

AN ANALYSIS OF PRICING AND
MARKETING PRACTICES OF A
MICHIGAN CELERY PRODUCER
ORGANIZATION

THESIS FOR THE DEGREE
OF Ph.D.

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THOMAS SCOTT CLEVINGER

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This is to certify that the

thesis entitled

AN ANALYSIS OF PRICING AND MARKETING PRACTICES
OF A

MICHIGAN CELERY PRODUCER ORGANIZATION

presented by

Thomas Scott Clevenger

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Agricultural Economics

Harold M. Riley
Major professor

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ABSTRACT

AN ANALYSIS OF PRICING AND MARKETING PRACTICES OF A MICHIGAN CELERY PRODUCER ORGANIZATION

by Thomas Scott Clevenger

The purpose of this study was to analyze the marketing and pricing practices of a relatively new marketing institution, the Michigan Celery Promotion Cooperative. The analysis provides information that is directly useful to the Cooperative in planning a more effective marketing program. Other commodity groups may also benefit from the case study of group action, including this organization's growth, experiences, and marketing practices.

The organization has overcome many of the problems that led to its formation in 1963. By 1967, the Cooperative was confronted with a problem of maintaining its market position. Possible alternative organizational and marketing techniques for the firm's growth were analyzed, including an analysis of their pricing activities.

This Cooperative has signed production contracts with its members and administratively determines its product prices. It markets its celery through non-member shippers (brokers) with whom it has signed exclusive supply contracts.

Weekly celery price relationships (1963-1966) were analyzed with single equation, least squares multiple regression methods. The dependent variable was the Cooperative's f.o.b. shipping point price. Independent variables selected for inclusion in the price estimating equations included celery f.o.b. shipping point prices at competing production areas in California and New York, and a Cooperative supply variable.

Due to within-season changes in celery supply originating outside Michigan, the Michigan celery season was divided between the seventh and eighth weeks. Equations developed for each portion of the season were used during the 1967 marketing season to determine their predictive power. Except for the third and fourth weeks, in which there respectively occurred a national railroad strike and a riot which closed the Detroit terminal market, the equations predicted well. The direction of price change was predicted more accurately than the actual weekly average price.

The regression equations were updated, including 1967 data, excluding the third and fourth weeks. The updated equation for the first portion of the season had a multiple correlation coefficient of .94 and a standard error of estimate of .24, while the equation for the last portion of the season had a multiple correlation coefficient of .80 and a standard error of estimate of .26. The prices estimated were weekly average prices. Industry practice is to change f.o.b. shipping point price by a minimum of \$.25. The low standard errors of estimate relative to the minimum price change indicate that these equations are useful to the Cooperative in their administrative pricing process.

The results of an open-end attitude survey of Michigan celery shippers, processors, and field buyers and of previous attitude surveys of Michigan celery growers conducted by the Cooperative Extension Service were presented to indicate the likelihood of the industry accepting alternative marketing organizations and practices.

A Michigan state celery marketing order was suggested as a means of improving the Michigan celery marketing activities. Through an order, all the Michigan celery producers could work to improve the

marketing and merchandising of their products, despite the adverse attitudes of Michigan celery shippers, processors, and field buyers toward a rigorous state celery marketing order.

Central packing was suggested to the Cooperative as a possible means of improving quality, meeting labor requirements for packing in a more efficient manner, and improving coordination of celery and possibly other vegetable marketing efforts by the Cooperative. Shippers, in general, would be opposed to the Cooperative expanding its market control through a central packing facility, even though they would recognize and value the more uniform and higher quality products that could result.

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OF A

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By

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CHAPTER I

INTRODUCTION

The focus in this study was a relatively new marketing institution, the Michigan Celery Promotion Cooperative. In seeking ways to further improve the effectiveness of their marketing efforts, the Cooperative requested assistance from the Department of Agricultural Economics at Michigan State University. Thus, the immediate goal of this study was to provide information that will be directly useful to the Cooperative in developing a more effective marketing program. An attempt has been made to determine feasible alternatives in the orderly movement of product and activities to expand demand and reduce handling costs. Other commodity groups may also benefit from a description and analysis of the organization's growth, experience, and marketing practices.

Consumers may benefit from improved marketing practices relative to quality and packaging suggested as a result of this analysis. Wholesalers and retailers may also benefit from possible reduced procurement and marketing costs.

The Problem

The Michigan Celery Promotion Cooperative was organized in late 1962 for the purpose of increasing returns to celery growers through programs to expand demand and to develop more effective handling and merchandising methods. By 1966 the Cooperative had made substantial progress in controlling their product quality, pricing, and distribution. During 1966 the organization marketed 75 percent of

the fresh and 60 percent of the processed celery harvested in Michigan. This was a decline, however, from the 90 percent of all Michigan celery handled by the Cooperative in 1963.

The Michigan Celery Promotion Cooperative is in a position to influence quality, price and market allocation of celery produced by Cooperative members, and has done so to some extent during past marketing seasons. In conjunction with a quality control program, pricing has been the center of attention for this producer organization. Daily prices for sales of members' celery are determined throughout each season by the Cooperative's Price Committee.

The Michigan Celery Promotion Cooperative has reached a crossroads in its service to the Michigan celery industry. The organization has reduced many of the problems that led to the Cooperative's initial development. The position of Michigan celery has gained greater recognition in the market through improved quality. However, the membership and acreage in the organization have declined. This is partly because as long as the Cooperative continues, the benefits of it are at least as great for nonmembers as for members, and the costs for nonmembers are much less. The economics of possible alternatives as the Cooperative and the industry seek to improve their marketing effort merit analysis.

The Cooperative and the Michigan celery industry may be tempted to merely refine their existing marketing programs, which is a common tendency for producer organizations once initial problems have been resolved. This approach could not be continued long, however, without the Cooperative experiencing a marked decline in its importance in celery marketing, for the effectiveness of this organization

is first attributable to the volume of celery it controls. The declining membership of this organization is an indication of a need for it to initiate organizational and marketing changes if the group is to remain viable.

Celery may be marketed along with many services such as quality control, assembly of sufficient quantity to meet the needs, and packaging, to name a few. Celery is marketed through marketing firms that handle other vegetables and fruits in addition to celery. The marketing of celery requires achieving a meshing of marketing effort (coordination) within this structure.

The goal of the Cooperative's Price Committee has been to determine appropriate prices to move the available supply of Cooperative celery to market in an orderly manner during the season. This is a difficult task in the complex celery market, and there is a need for quantification of price relationships. Pricing is interrelated to quality, market allocation, transportation and numerous means of nonprice competition. Indeed, the problem is not one of "just selling celery," but one which encompasses a total marketing program. Thus, there is a need for a comprehensive celery price analysis.

The Objectives

There are four primary objectives of this study. These are:

1. To describe the history and development of the Michigan Celery Promotion Cooperative.
2. To develop a price analysis which may be used to predict price of Cooperative celery and indicate the relationships between selected variables and price.
3. To analyze possible organizational and marketing

practice alternatives for Cooperative growth.

4. To recommend a course of action for the Michigan Celery Promotion Cooperative.

Plan of Thesis

The general environment of the celery industry will be briefly described. Important characteristics and nature of the crop are delineated. This is followed by a description of the industry structure, including the regional and seasonal production, distribution and consumption patterns and marketing organizations. An examination of the Cooperative's historical development is included. Michigan's position in relation to the total United States celery industry is also described.

An economic model of the demand and price structure faced by the Michigan Celery Promotion Cooperative was formulated. This model provides a basis for the development of statistical price predictive equations which include relevant supply and demand factors. These equations were tested during the 1967 marketing season, and their performance was analyzed. Then the regression equations were updated by including 1967 data. The possible use of these price predictive equations for weekly pricing decisions by the Cooperative is discussed.

Utilizing the current status of the Michigan Celery Promotion Cooperative as a starting point, alternative growth-oriented marketing organizations and practices available to the Cooperative and Michigan celery industry are specified. The economic rationale for considering these alternatives is also presented.

The results of an attitude survey of Michigan celery shippers, processors and field buyers and of previous attitude surveys of

Michigan celery growers conducted by the Cooperative Extension Service are presented in order to suggest which alternatives have greatest likelihood of industry acceptance. These attitude surveys also provide additional information on how the celery marketing system operates and attitudes toward existing marketing organizations and practices. These attitudes are then considered as facilitating or inhibiting certain alternatives for the Michigan Celery Promotion Cooperative.

Based upon the foregoing analysis, recommended actions are outlined for the Cooperative as a part of their total marketing program. Implications of these actions for the Michigan celery industry are evaluated.

CHAPTER II

THE UNITED STATES CELERY INDUSTRY

Introduction

The description of the United States celery industry in this chapter establishes the broader setting within which the Michigan Celery Promotion Cooperative group marketing activities have been conducted. But first it is useful to mention the relative position celery holds in United States fresh vegetable value and production. In recent years (1963-1966) celery has ranked about sixth in farm value (\$50.3 to \$70.3 million) among United States fresh vegetables, coming after potatoes, tomatoes, lettuce, onions, and sweetpotatoes. Celery, on a tonnage harvested for market basis, ranks about eighth (704 to 729 thousand tons) among United States fresh vegetables, coming after potatoes, lettuce, cabbage, onions. (59)

Ecological Characteristics of Celery

Celery production is limited to those regions with a growing season in which the monthly mean temperatures are between 60 and 70 degrees Fahrenheit for 65 to 90 days after transplanting. There is some field seeding in California, which lengthens the growing season one to two months. As the celery matures, stalk size increases, but quality begins to deteriorate approximately ten days after the stalk has attained full growth. Long exposure to cool temperatures (40 to 50 degrees Fahrenheit) causes most varieties to bolt; that is, produce seedstalks. (42:2, 11-12)

Celery is a very shallow-rooted plant, has high requirements for

water, nutrients, and good but not excessive drainage. Celery is produced on the following soils which, in conjunction with nutrient applications and control of a water table or irrigation, meet these requirements: muck, loamy sands, sandy loams, loams, and to some extent silt loams. Commercial celery production is limited to soils that range from slightly acid to neutral, that is, pH 5.8 to 7.0.¹ So called high lime muck soils, pH 6.0 to 7.0, are ideal (42:2)

Celery production requires rather intensive grower care to be certain that the crop has adequate water and that the many diseases and insects to which celery is susceptible remain under control. Labor requirements for harvesting and packing operations are rather high relative to those requirements for alternative crops that may be produced on the same land but harvested mechanically. Up to 300 man-hours are required to harvest an acre of celery. (53:7) Celery production has not been fully mechanized as has production of many alternative crops that may be grown on the same land, such as carrots, beets, onions and potatoes.² The degree of mechanization varies among producing areas. California and Florida celery growers, with relatively larger acreages, tend to be more mechanized. However, to the writer's knowledge, the technology for a fully mechanized harvest of fresh celery is not available.

Regional Patterns of Production and Distribution

¹pH is a symbol of the hydrogen ion concentration which determines acidity.

²The importance and possible implications of mechanizing celery harvesting are considered in Chapter 5.

Production Patterns

Celery is produced year around in the United States. Imports of celery into the United States are negligible. Florida and the southern areas of California comprise the bulk of fall-to-summer production. California also produces celery during the summer months along with Michigan, New York, New Jersey, Ohio, with small commercial amounts grown in Colorado, Massachusetts, Oregon, Pennsylvania, Utah and Washington. On an annual basis, California produces an average of 55 percent of the commercial crop, Florida 25 percent, Michigan 5 to 6 percent, and New York almost 4 percent, with the other areas making up the remainder. (42:5)

The Michigan celery marketing season generally lasts from the first of July through the first week or two of October. During this season, Michigan and New York celery compete principally with California celery in eastern United States markets. For the years 1963 through 1966 California was the top celery producer during the summer marketing season¹ (approximately July through September) with an average of approximately 45 percent of United States production. During that same period, Michigan produced an average of 21 percent and New York an average of approximately 20 percent of the United States summer celery crop. The remainder was produced by the other states mentioned above, with the exception of Florida who produces no celery during the summer season.¹ (59)

Michigan's summer season production builds up through the first two weeks of July to approximately 87 carlots per week, peaking in August

¹See Appendix A, Table 1 for additional detail.

at 95 carlots per week, and declining to 66 carlots the last week of September with the season's end around the second or third week in October. This is shown graphically in Figure 1 below in terms of volume shipped by weeks.

New York production is harvested in August and September. The Santa Maria and Salinas-Watsonville areas of California are the largest competing suppliers during the summer season. Rail shipments from these California areas are usually from 110 to 250 carlots the first three to four weeks of the Michigan season. They decline during August to approximately 80 carlots per week and increase again through September to 100 to 120 carlots per week, increasing to over 160 carlots per week at the end of the Michigan season. Table 1 provides a quantitative indication of these weekly fluctuations in competing California supply. The principal reason for the decline in California carlot rail shipments during August is a lack of earlier plantings that can be harvested at that time. This happens each year apparently in anticipation of eastern summer season celery production and California's freight disadvantage in shipping to eastern markets. Many eastern retail buyers rely upon purchases of Michigan and New York celery in August as it coincides with the maximum availability of celery from those areas and generally their lowest prices.

Distribution Patterns

Fresh market celery produced in the United States is available to consumers the year around. There are no large seasonal peaks or valleys in supply. Only very limited quantities of fresh celery are stored as its keeping qualities are poor. Table 2 shows availability of celery by months expressed as a percentage of total

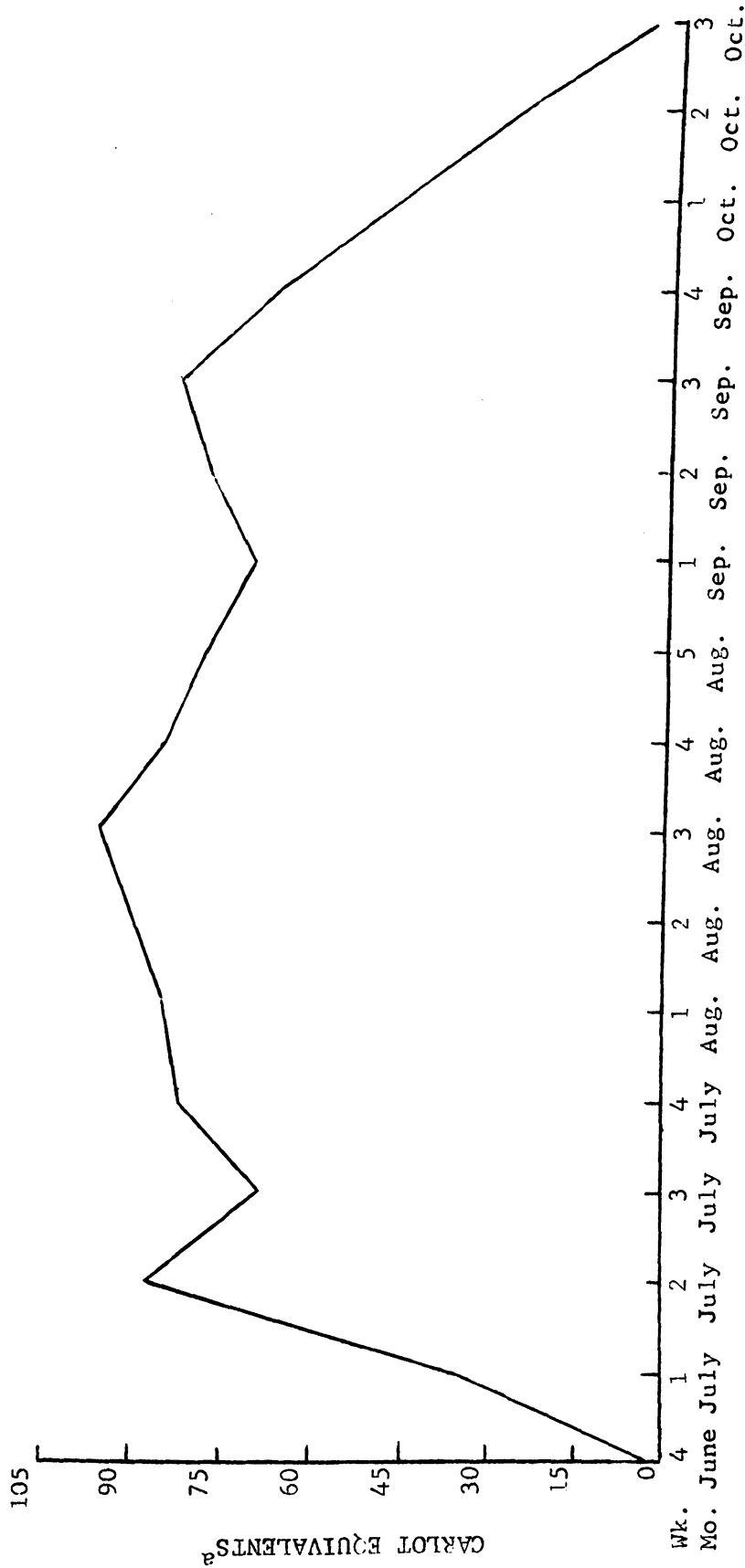


FIGURE 1.--Michigan fresh celery truck shipments as reported by the Michigan Celery Promotion Cooperative, average for 1963-1966.

^aA carlot of fresh celery contains 600-16 inch crates of approximately 60 pounds each. A carlot of heart celery contains 1,425 crates of approximately 30 pounds each.

Source: (27)

TABLE 1.--Rail shipments of California celery by week and month of the Michigan marketing season, average of 1963-1966.^a

Approximate Month of Season	Week of Michigan Season	Rail Shipments 1963-1966 Average (Carlots)
June-July	1	227
July	2	250
July	3	154
July-August	4	113
July-August	5	95
August	6	87
August	7	97
August	8	81
August-September	9	78
September	10	103
September	11	104
September	12	123
September-October	13	110
September-October	14	118
October	15	162

^aA carlot of celery contains 600-16 inch crates of at least 60 pounds each.

Source: (25)

annual supply. The largest quantity usually is available in November and the least in August and September. During the Michigan marketing season, celery availability reaches its lowest level of the year. This may be due in part to the production of other salad vegetables, often produced locally at that time.

The relative delivered prices of celery from the two areas might be expected to determine the market areas of each. However, in the markets of the eastern United States, shipments of California celery compete directly with Florida celery. (23:1) The California celery commands a price premium over the Florida celery. This California price premium is apparently due to superior quality and the "California"

TABLE 2.--Average monthly availability of celery as a percentage of annual supply.^a

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
9%	8%	9%	9%	9%	8%	8%	7%	7%	8%	10%	9%

^aPercentages based on unloads at 41 cities and United States market celery production for an average of years 1963-1966. See Appendix A, Table 2 for celery unload detail. Average annual market production of 39,200 carlots (23,519,583 crates or 1,411,175,000 pounds), calculated from source number 59, was used as a measure of 1963-1966 total supply. These percentages were estimated as follows:

<u>Unloads for a month in 41 cities</u>	(100) = availability of celery
<u>United States annual market production</u>	
<u>Annual unloads in 41 cities</u>	
<u>United States annual market production</u>	

label. However, Godwin found in retail store studies that, "The preference of customers for California celery over Florida celery is not strong enough to cause them to pay a very large premium to obtain the California product." (23:2)

California produces celery the year around due to favorable soils and climatic conditions. Celery is produced in the southern part of the state in the winter and in the central coastal counties in the summer. Having celery available on a year-around basis from a given state may ease procurement problems for some buyers. Also, it is likely that the availability of other fresh vegetables from the same area is viewed as a convenience by many buyers. Thus retail buyers may prefer California celery and be willing to pay a slight premium to obtain it. These factors detailing buyer preference for California celery affect all non-California celery producing areas.

California celery is the major competing supply area on the celery markets during the Michigan marketing season. However, Michigan celery has a freight advantage over California celery in the area east of a line drawn from Bismarck, North Dakota to San Antonio, Texas. (53:9) New York celery, a major competitor during the Michigan marketing season, has a freight advantage on the eastern seaboard over both California and Michigan celery. Nevertheless, because of apparent retail customer preference and procurement convenience for the retail grocery buyers, California celery is generally found in all market areas despite its freight disadvantage. Celery from Michigan and New York, on the other hand, tends to compete within the constraints of their respective freight advantages and available supplies. This suggests no quality advantage of celery from either of these areas.

Celery Consumption

Per capita disappearance¹ of United States celery production since 1947 of 7.9 pounds increased to 9.2 pounds in 1955 and then declined to 7.2 pounds in 1964 (Table 3). Over the most recent four-year period (1963-1966), annual per capita disappearance of celery averaged 7.3 pounds.

Using data from the United States Department of Agriculture's household food consumption survey conducted in 1955², (17, 18, 19, 20)

¹Per capita disappearance refers to quantity marketed per capita. Losses during marketing and after retail sale are not considered in arriving at this data. It has been estimated (42:5) that celery retail weight is 86 percent of farm weight.

²In April, May, and June of 1955 the United States Department of Agriculture conducted a household food consumption survey. Fresh celery was one of the commodities on which data was gathered. The survey was based on a national probability sample of approximately 6,000 housekeeping households of one or more persons. "Housekeeping

TABLE 3.--Annual per capita disappearance of United States marketed celery production in farm weight, 1947-1966.^a

Year	Lbs.
1947	7.9
1948	8.2
1949	8.3
1950	8.6
1951	9.1
1952	8.9
1953	8.9
1954	9.1
1955	9.2
1956	9.1
1957	8.8
1958	8.2
1959	8.4
1960 ^b	8.4
1961	8.1
1962	7.6
1963	7.5
1964	7.2
1965	7.3
1966	7.3

^aSee Appendix A, Table 3 for additional detail and source of data.

^bIncludes Alaska and Hawaii, beginning 1960.

it is possible to obtain some additional insights into the characteristics of consumers of fresh celery. Although fresh celery consumption patterns may have changed since 1955, these data are the most recent comprehensive data available on celery consumption in the United States.

households were defined as those in which at least one member had 10 or more meals from home food supplies during the week preceding the interview. Institutions and persons living on military reservations were not represented." (19:1) Information was obtained on the percent of households using fresh celery, quantity used per household, and money value spent per household on the commodity for the seven days preceding the interview. Additional classifications were by income groups, degree of urbanization, and region of the United States. The United States was divided into four regions--West, North Central, South, and Northeast.

In this survey the percentages of all households using fresh celery by degree of urbanization were as follows: all urbanizations--42 percent, urban and rural nonfarm--44 percent, urban--46 percent, rural nonfarm--38 percent, and rural farm--29 percent. This indicates that a greater degree of urbanization is associated with a larger percentage of households using fresh celery. Higher celery use in more urbanized households also prevailed when the data were broken into one-person households and households of two or more persons. However, households of two or more persons used at least one-third more celery than one-person households. (19:113, 115, 117, 120, 123) This consumption pattern may be related to the form in which celery is typically marketed at the retail level--that is, in stalks. A stalk of celery is a considerable amount of celery for an individual to consume in view of the limited keeping quality of fresh celery. Thus, there may be a need for a smaller retail package of celery.

Based upon data compiled in the 1955 household food consumption survey, over 50 percent of the households other than rural farm having gross annual incomes over \$5,000 used fresh celery. These households consumed more than one-half pound per week. Sixty-three percent of all urban households in the survey with gross annual incomes over \$10,000 used fresh celery. (19:117)

The quantity of fresh celery consumption per household for all urbanizations in a given week by region¹ of the United States were as follows: West--.56 pounds, North Central--.47 pounds, Northeast--.43 pounds, and South--.24 pounds. (20:111; 16:113; 17:112; 18:113) The previously noted patterns of increased consumption with greater

¹See footnote 2, pages 13 and 14.

urbanization and with higher income were consistent in every region of the country.

A 1952 to 1958 consumer expenditure study of approximately 275 families in Lansing, Michigan by Shaffer provides additional information on consumer purchase patterns of fresh celery for a given market area. (45) During the period 1952-1958, average annual expenditure per capita on fresh celery for those in the study ranged from \$1.02 to \$1.11. During this same period the average percent of these families buying fresh celery in any given week was from 22 to 26 percent. These percentages are about one-half of those for the percentage of urban households using fresh celery in the North Central region of the United States Department of Agriculture's 1955 consumption survey.

In Shaffer's study, for the five years 1954 to 1958, each year was divided into 13 four-week periods. Per capita expenditures and the average percent of families buying fresh celery during each of the four-week periods of the study are shown in Table 4. The late summer decrease in fresh celery consumption, noted in Table 2 above, is again apparent in Table 4. Both expenditure per capita and average percent of families buying fresh celery were less during periods 8 through 11 relative to the other four-week periods. (45:34) These periods correspond to the late summer months during which Michigan's celery production reaches its peak.

Market Organization and Practices

General Characteristics

Fresh market celery typically moves from the producer to a shipper who acts as an initial broker. Some producers are also shippers. The

TABLE 4.--Expenditures and purchases for fresh celery from a sample of Lansing, Michigan families for yearly four-week period averages, 1954-1958.

Seasonal Averages Period	Expenditure Per Capita	Average % of Families Buying
1	\$.083	23.5
2	.081	23.1
3	.090	24.8
4	.085	24.2
5	.082	23.8
6	.090	24.3
7	.088	23.5
8	.076	22.2
9	.060	19.6
10	.062	19.8
11	.070	21.5
12	.089	25.9
13	.090	25.0

Source: (45:34)

celery may be packed by the producer or shipper. Temporary storage facilities are typically available at this level.

Buyers who purchase celery from shippers can be classified into the following five categories:

1. Brokers at terminal markets
2. Retail organizations
3. Wholesale-handlers
4. Military
5. Food processors

Processors also procure part of their requirements from producers on a contractual basis. Others purchase celery at terminal markets as their needs arise. Celery grown under contract with a processor is generally delivered unsized, in bulk boxes or tied in bundles.

Although the United States Department of Agriculture has grades and standards for celery (57), use of these grades and standards is voluntary and they are not widely used in the industry. There are no federal grades or standards established specifically for processing celery.

Product differentiation of fresh celery is generally limited to producer or shipper brand or trademark promotion on shipping crates and in trade publications. Florida celery producers as a group have done some advertising and promotion of celery in general to consumers. The possibilities of celery product differentiation through prepackaging are currently being explored by producers, shippers, repackers, and retailers. Michigan producers have made the greatest strides in differentiating their fresh celery product from their processing celery. This has been accomplished by performing pre-processing operations to the celery.

Market Organization by State

Florida. Florida celery growers have achieved a substantial degree of market organization in recent years. Most celery growers and shippers in Florida have been organized into a marketing cooperative.¹ A state marketing order for celery was also adopted by Florida growers in 1961. This marketing order contained provisions for direct and indirect production controls in addition to provisions for quality control and promotion. The supply control provisions of this state order were declared unconstitutional in 1965, and a federal order was adopted shortly thereafter, permitting acreage regulation of Florida celery. The voluntary marketing cooperative and compulsory marketing

¹Some celery growers are also celery shippers.

orders operate with interlocking directorships and committees. (8:5) Thus, coordination of these three means of market organization is greatly enhanced.

The Florida celery industry is very concentrated, having only 38 producers in 1961. (8:3) Individually the producers grow from 20 to 2,200 acres of celery, and 8 to 10 producers grow 80 percent of Florida's 11,000 acres of celery. (56:3) This concentration has been beneficial to these producers as they have sought to improve their marketing efforts through group action. Through the use of marketing orders and a cooperative marketing organization, these celery producers have conducted programs in quantity and quality regulation, advertising, and promotion. Through the Cooperative, daily prices for sales of its members' celery are determined throughout the marketing season.

California. California growers do not have a celery marketing organization. There is, however, a trade association of vegetable growers and shippers that has been active since 1930 in the areas of labor relations, public relations, transportation,¹ legislative matters; and it arranges for settlements of rejections and allowance requests. This association does not handle sales. Sales are made only by individual shippers, although some of the larger growers are also shippers. (6)

California celery is generally sold without the benefit of United States federal celery grades. Quality control of California celery is in the producers' hands. Celery from California is available the year around in most major market areas of the United

¹This refers to the association's negotiation with the railroads on freight rates, car availability and similar matters. (4)

States. The f.o.b. shipping point prices of California celery are available daily through the Market News Service. Numbers of buyers and sellers in the California celery industry were not available, but the market has been generally characterized as approximating the competitive model. (6) The number of sellers is generally less than would be the case in the competitive model.

New York. Prior to 1967 there were no grower or shipper organizations marketing celery in New York. (6) In 1967, four vegetable producers in Orange County, New York formed a cooperative to market their produce. The principal vegetables produced and marketed by this organization were celery, lettuce and onions. These growers produced celery on 325 acres. They employed a quality inspector and attempted to ship celery that graded United States Number 1 or better. This New York organization handled their own sales and priced their products prior to offering them for sale. (28) Through this organization, these producers have decreased competition among themselves and increased their market power.

Michigan. Most Michigan celery growers have been organized into a marketing organization--first under the Michigan Celery Promotion Association and later with the Michigan Celery Promotion Cooperative--since early 1962.¹ It was first organized as a growers' association and by late 1962 had become a marketing cooperative.

The Michigan organization is similar in many respects to the Florida celery cooperative. Both organizations have signed contracts with their grower members which give complete marketing control and

¹Details of this organization's development are discussed below under Development of the Michigan Celery Promotion Cooperative.

title of the grower's celery to their respective organizations. Both organizations have also signed contracts with existing shippers, designating the shippers as exclusive sales agents for the cooperative. These shipper contracts bind the shippers to all rules, regulations, and prices established by the grower marketing organization.¹ (8:5) In connection with these contractual arrangements, Michigan's celery marketing cooperative has been actively involved in setting the price of its members' celery prior to sale.

Without a marketing order, they have been able to control supply through harvesting moratoriums, quality regulation and market diversion to processing outlets. They have conducted a quality improvement program and have been active in advertising and promotion of their product. They have also signed contracts with food processors to supply them specified quantities of celery at specified times and prices.

¹Organizational and marketing possibilities afforded by the close similarity of these two cooperatives are discussed in Chapters 5 and 7. See Appendix B for copies of the Michigan Celery Promotion Cooperative's grower and shipper contracts.

CHAPTER III

THE MICHIGAN CELERY PROMOTION COOPERATIVE

Introduction

This Chapter deals specifically with Michigan's largest celery producer marketing organization--the Michigan Celery Promotion Cooperative. Its environmental and organizational setting and development are presented here for the interest of other commodity marketing groups and to provide a framework for the analytical portions of the study.

In Michigan, there are approximately 90 commercial celery growers who harvested a total of 2,000 acres of celery in 1966. Of the present 90 growers, 85 are located on the western side of Michigan's lower peninsula. In that area, within a 75 mile radius of Zeeland, approximately 1,850 acres are devoted to celery production. The remaining approximately 150 acres of celery are in Lapeer County, located in eastern Michigan.

Michigan's celery growers produce an average of 22 acres of celery per grower with a range of 1 to 85 acres devoted to celery production. (53:4) Celery is the only field crop grown by more than half of these farmers, but some produce other truck crops such as onions, carrots and potatoes. Some growers also have green houses which they use to produce celery transplants and annual flowering plants. Most Michigan celery is grown on muck soil.

Conditions Which Motivated Group Action

Michigan's celery acreage increased until 1941 to a high of

7,200 acres. Celery acreage in Michigan has declined since that peak to approximately 2,000 acres in recent years (Table 5). Yield per acre has increased from a 1947-1951 average of 276 hundred weight to a 1962-1966 average of 357 hundred weight. The net result has been a down trend in production over the 20-year period 1947-1966.

TABLE 5.--Michigan celery: acreage, yield, production and price, 1947-1966.

Year	Yield		Production (000 Cwt.)	Average Price Received by Growers	
	Harvested (Acres)	Per Acre (Cwt.)		(\$ Per Cwt.)	(\$ Per 60 lb. Crate)
1947	4,900	231	1,133	3.45	2.07
1948	4,400	278	1,221	2.57	1.54
1949	3,900	274	1,069	3.05	1.83
1950	3,600	292	1,050	2.64	1.58
1951	3,400	304	1,032	3.48	2.09
1952	3,300	271	893	4.93	2.96
1953	3,500	294	1,028	2.54	1.52
1954	3,100	270	838	3.22	1.93
1955	2,800	300	841	4.32	2.59
1956	2,500	329	822	2.80	1.68
1957	2,400	243	584	3.74	2.24
1958	2,400	360	864	3.05	1.83
1959	2,000	340	680	3.51	2.11
1960	1,900	398	757	3.06	1.84
1961	2,400	377	909	2.60	1.56
1962	2,600	407	1,058	3.42	2.05
1963	2,500	365	912	2.86	1.72
1964	2,200	360	792	3.76	2.26
1965	2,000	370	740	3.96	2.38
1966	2,000	281	562	5.70	3.42

Source: (32)

Average annual Michigan farm price per 60-pound crate of celery does not appear to be consistently influenced by Michigan production. That is, when Michigan celery production increases over a previous year, prices may increase because of the large impact of changes in competing areas. Years 1952-1953 and 1954-1955 in Table 5 are

examples of the inconsistent price response to changes in production. Since Michigan celery production is not a large part of national production, the inconsistency is not unexpected.

The small celery acreages of individual growers are often the result of small, confined muck areas. There are few areas in Michigan in which larger single fields of celery might be grown. Muck areas are also scattered which tends to limit individual size of Michigan celery producers. This may prove to be a more limiting factor in Michigan and New York celery production than in Florida and California as increased mechanization of production and harvesting operations becomes possible.

Available celery marketing data for most states notes that their "fresh" celery figures include some quantities for processing. Generally, no attempt is made to estimate the quantity for processing. However, Michigan has estimated that 25 to 30 percent of the Michigan celery crop is marketed directly to processors. (3:8) The proportion of Michigan celery that is processed is apparently higher than in Florida and California. (6,8)

Fresh market celery may be divided into two categories--hearts and sized. Celery hearts are small stalks of celery from which the larger petioles have been stripped, leaving the smaller and presumably more tender inner petioles. These are washed, cut to length, and frequently packaged two to three hearts to a ventilated sealed-end film bag. These are then packaged for movement to retail outlets, either 12 or 24 bags to a crate. Celery heart production accounts for about 20 percent of total Michigan celery production. (53:8) Sized stalks of celery make up 50 to 55 percent of Michigan celery

production and are marketed in crates.

In Michigan, "Howard," wire-bound crates are the standard package for celery shipped to fresh market. Into these standardized crates may be packed any one of the following number of dozens of celery stalks: $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, 4, and 6. The $2\frac{1}{2}$ dozen size comprises the largest volume of these shipments, approximately 33 percent. (11) Michigan also had limited experience since 1963 with a paper corrugated half crate and prepackaging of the larger fresh market sizes. The prepackaged products were well accepted by the trade. (53:8-9) Celery hearts and sized celery are frequently displayed side by side in retail stores.

The decline in Michigan celery production and the increase in California and Florida celery production during the 1941-1959 period appears to have been due to a number of factors. Drost and Trocke have enumerated a number of these factors. (12:3) A partial listing of them appears below:

1. California could ship fresh celery all year.
2. Large volume California grower-shippers marketed a more uniform and higher quality product relative to Michigan's offering.
3. Increased winter production of celery in California and Florida reduced the market for Michigan celery marketed from storage supplies.
4. The relatively small Michigan producers, pressed by increasing producing costs, did not readily adopt new varieties, packing techniques and handling methods.
5. Urbanization and industrialization near Michigan celery producing areas increased the attractiveness of nonfarm

employment as an alternative.

6. Michigan celery traditionally was sold by shippers whose primary interest was their sales commission of \$.25 per crate sold. With no ownership interest, they frequently engaged in unnecessary price competition among themselves.
7. Michigan celery was frequently sold without inspection or grade.

There are undoubtedly other reasons, but these appear to be the most important factors contributing to the decline of the Michigan celery industry during 1941 to 1959.

The Organizational Efforts

The decline in acreage, and in quality in the eyes of many buyers, prompted a number of Michigan's celery growers to seek assistance in solving their celery marketing problems. In 1957 a district marketing agent in the Cooperative Extension Service began working with the Michigan celery industry to assist them in finding solutions to their problems. There were two celery grower organizations in existence at that time. One group, the Muskegon Cooperative Celery Growers, had hydrocooling and storage facilities and operated as a shipper. The other group was the Michigan Celery Promotion Association. This organization employed a fieldman to assist the producers with their cultural practices and was primarily production oriented.

When the district marketing agent began working with the celery industry, all growers sold their celery through shippers. According to the district marketing agent, "The price for a crate of celery would start out relatively high at the first of the season and by the

middle of August the price would be at \$1.25 or the bottom." The agent conducted a cost-of-production study over a two-year period 1957-1958 in an attempt to provide the Michigan celery industry with basic cost data. This study also provided a basis for analyzing Michigan's competitive position relative to other areas. Cost of harvesting and packing into crates were found to average about \$1.25 per crate. They varied from \$1.18 to \$1.94 per crate, depending primarily upon yield. (46)

In the fall of 1958, a celery price panel was organized. This group became known as the Celery Price Information Committee. They formed a panel which was to determine the price that shippers "should" charge for celery each day. The panel was composed of two growers from each shipping district for representation and participation. The membership of this voluntary group produced approximately 75 percent of Michigan's celery. (46)

The Celery Price Information Committee's activities were financed by assessing themselves \$1.50 per acre of celery produced. These funds were used primarily to cover the costs of accumulating and disseminating celery market information. Current market information was obtained by telephoning shippers or Market News reporters in principal producing areas and from a daily market news report from California. The price panel reviewed this market information and decided upon prices that should be charged for various celery sizes each day. They would then prepare a recording to be played over the telephone, summarizing the daily market conditions and the prices that should be charged for the various sizes that day. Growers could then call a certain telephone number and receive the market report

and prices that should be charged for the day. (46) They were then able to compare prices among shippers and could recommend a price to the shippers.

It should be kept in mind that this was a voluntary effort. If the shippers did not sell for the prices the growers were asking, their recourse was to not deliver celery to that shipper in the future. Producers found they could work together and that some shipper cooperation could be obtained. The lowest price in 1959 was \$2.75 per crate of fresh celery compared to \$1.25 per crate in August of previous years. (46) The price increase may also have been due to a decline in Michigan celery production from 1958 to 1959 of 184 thousand hundred weight.¹

The three groups representing the Michigan celery industry in early 1960 were the Michigan Celery Promotion Association, primarily a grower group formed to improve production practices; the Celery Price Information Committee, a grower price information group; and the Muskegon Cooperative Celery Growers, a grower-shipping group. There was a definite lack of coordination and cooperation among these groups. Also, there were great variations in the quality of celery packed by individual growers.

Several activities were carried out in the celery industry in 1960 with assistance from Michigan State University and the Cooperative Extension Service. These included an unofficial survey of middleman buyer reactions to the Michigan celery industry, continued meetings with growers and shippers to study the Michigan celery industry including discussions of its problems and some possible solutions to

¹See Table 5 above.

the problems, distribution of a summary of the previously conducted cost of production work to all segments of the celery industry, a series of educational seminars on marketing, continued assistance in gathering and interpreting market and price information, and a consumer panel to determine consumer reaction to Michigan versus California celery. (54)

By early spring 1961, two alternative approaches to unifying the marketing effort for Michigan celery had developed. One was a federal market order and the other was a bargaining association. A review of the Michigan Celery Promotion Association's board meeting minutes during that period indicates that this group was the principal organization advancing both of these proposals. (35)

A number of celery industry meetings were held; and personnel from the United States Department of Agriculture, among others, explained the various factors involved in a federal marketing order. A federal marketing order for Michigan celery was written, and all preparations were made to hold hearings on the order. Concurrently, the Michigan Celery Promotion Association developed plans for a bargaining association which could perform quantity and quality regulation, advertising and product promotion. Membership in this organization was to be voluntary. These two alternative programs were presented to Michigan celery growers and shippers. They reached a nearly unanimous agreement to try the bargaining association approach. (54) Hearings on the federal marketing order were never held.

In early 1962, the Michigan Celery Promotion Association was joined by the other two marketing groups, the Celery Price Information

Committee and the Muskegon Cooperative Celery Growers, in order to coordinate marketing activities. Growers belonging to this expanded association signed contracts with it, making it the legal sales agency for their celery. Machinery was also set up for price bargaining between the association and the shippers. The association's objective was to achieve a uniform price at any one time between shippers. The association contracted with shippers for them to act as brokers and to permit establishment of a quality control program with mandatory enforcement by federal-state inspectors. Approximately 85 percent of the Michigan celery acreage belonged to members of this organization in 1962.

Celery growers on the eastern side of the state did not affiliate with the Michigan Celery Promotion Association partly because of different marketing channels being used. Most celery produced on the eastern side of the state is sold on the Detroit wholesale market or direct to local chainstores. They, along with other vegetable growers, formed a vegetable marketing corporation to handle their sales. This group continues to operate independently of the celery organization on the western side of the state and is their competitor principally in the Detroit market area.

Late in 1962 the Michigan Celery Promotion Association changed its organizational structure from an association to a cooperative. The principal reason for this change was cited at the annual meeting of this group as follows: "A cooperative composed of agricultural producers may band together to establish a uniform base price for their products." (35) This change was made to permit the organization to administratively price its products prior to offering them for sale.

The organization has remained a viable cooperative since that time. Change and innovation are an integral part of this group's operations. A principal change relative to the marketing effort has been the contracts that shippers sign with the Cooperative¹ which bind the shipper to sell only that celery produced by Cooperative members at no less than the price dictated by the Cooperative. The Cooperative was able to get shippers to agree to these contracts by indicating that they would not sell celery through them if they did not sign. Continuing quality and promotion efforts by this organization have also been noteworthy.

The Organization and Operations of the Michigan Celery Promotion Cooperative

Structure of the Cooperative

An organization table for the Michigan Celery Promotion Cooperative is shown in Figure 2 below. The organization table indicates the hierarchy of authority and responsibility in the Cooperative.

Since becoming a producer cooperative in 1963, the Michigan Celery Promotion Cooperative has had two general managers. During the 1963 season, the manager of the Michigan Celery Promotion Association continued as general manager of the Cooperative. The board of directors hired a new general manager for the 1964 season, and he has continued in that capacity. Membership participation in the Cooperative has been active. During 1966, over half the membership served the Cooperative as elected or appointed members of committees and action groups. (47)

Celery producers must sign at least a one-year marketing

¹See Appendix B for copies of the contracts.

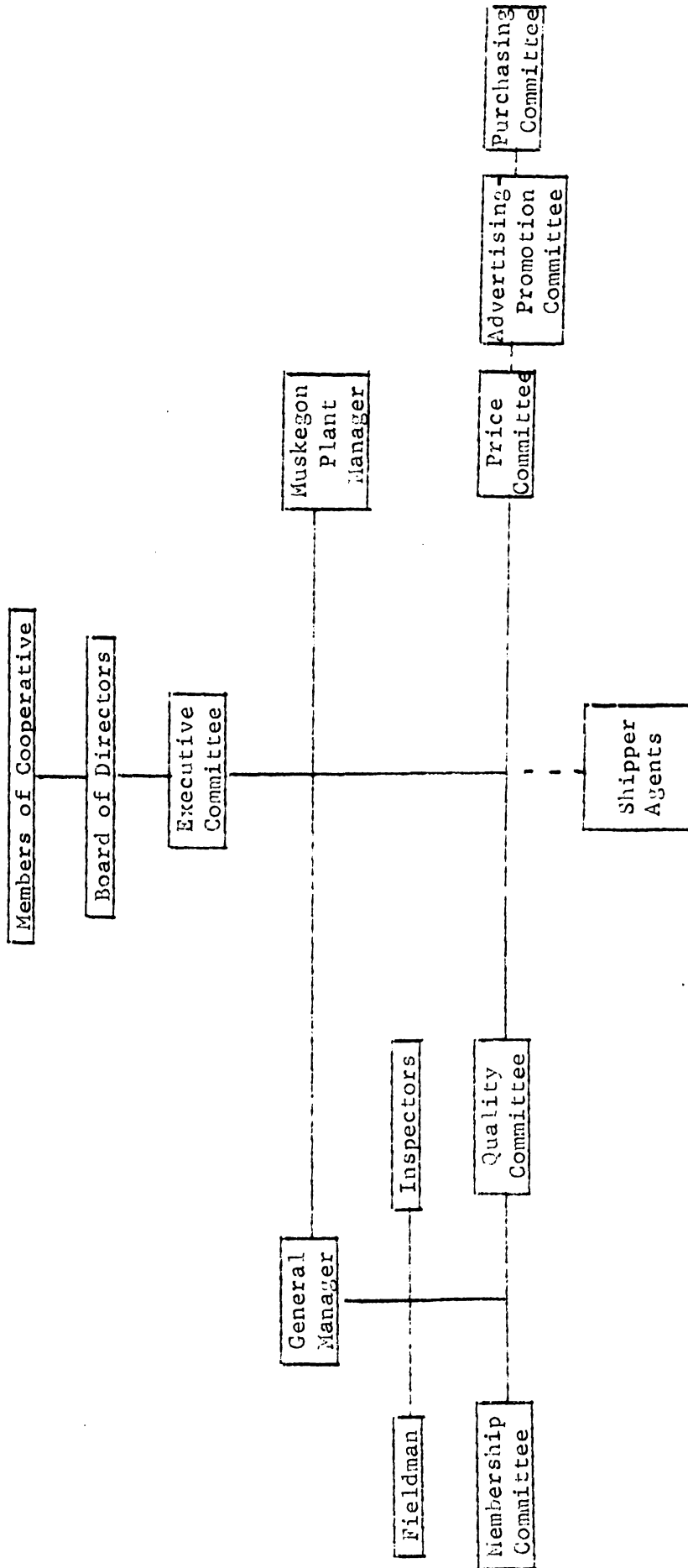


FIGURE 2.--Organization table for the Michigan Celery Promotion Cooperative.^a

^aShipper agents act under contract as exclusive sales agents for the Cooperative.

Source: (39)

agreement with the Cooperative to become members. The agreement designates the Cooperative as exclusive sales agent for celery grown or acquired by that producer during the year. In order to increase certainty in planning packing operations, the Cooperative initiated a long-term (6 year) marketing agreement with its grower-members. A fourth of the grower membership had signed these long-term agreements in 1966. The Cooperative has not required that all members sign these long-term agreements, because many members have said they would leave the organization rather than commit themselves that far in advance.

Apart from assigning control over the amount harvested and over the marketing of his celery to the Cooperative, the producer has the freedom to plant, spray and otherwise care for his crop as he sees fit. The Cooperative's fieldman provides production assistance when requested and assists the grower in determining when to harvest his crop. The Cooperative has the right, under the marketing agreement, to regulate the volume and quality of celery of any size, pack, variety, and maturity that may be shipped. The Cooperative has declared some "cutting holidays" during which all grower-members stop harvesting celery. Recently they have moved to regulate, as equitably as possible, the volume of celery harvested daily or weekly by grower-members. Although no grower-member's celery has ever been left unharvested in the field for other than quality reasons, quality may have declined due to harvest postponement.

Shippers desiring to sell celery produced by members of the Cooperative also must sign a marketing agreement with that organization. The agreement designates the shipper as selling agent for the

Cooperative and binds him to sell only celery produced by that group's members. In addition, the agreement binds the shipper to sell this celery under conditions and terms, including minimum f.o.b. prices, designated by the Cooperative.

The Michigan Celery Promotion Cooperative owns a plant with hydrocooling, storage and preprocessing facilities. They purchased this facility in 1964 from the Muskegon Cooperative Celery Growers Association whose members had joined the Michigan Celery Promotion Cooperative in 1963. Growers designated by the Cooperative to deliver their crate celery to this plant are assessed \$.18 per crate for hydrocooling, storage and handling. However, in this case, the Cooperative, not the shipper, receives the \$.18 per crate assessment which is based upon average shipper costs. This celery is sold by one of the selling agents with whom the Cooperative has previously signed a marketing agreement.

Celery for the processing market may be preprocessed at this plant. This is done by removing the butt of the stalk and cutting the individual petioles to a length designated by a processor. Celery not meeting quality standards for direct movement to either the fresh or processing market may be partially salvaged for sale to a processor by stemming it. The Cooperative has contracted to deliver this stemmed celery to processors prior to the start of the Michigan season. They have also sold stemmed celery to processors during the Michigan celery season.

Finance

The Cooperative finances its operations by assessing its members \$.05 per crate equivalent of celery sold. In 1964 an additional

assessment of $1\frac{1}{2}$ percent of f.o.b. price was added to cover new services such as a full-time fieldman and operation of a fresh packing and preprocessing facility. Growers are also assessed \$.18 per crate for precooling, handling, and storage and $8\frac{1}{2}$ percent of f.o.b. price for the shipper's commission. The \$.18 per crate goes to the shipper to whom the grower is assigned to delivery his celery. Pre-cooling is done in the shipper's hydrocooler. If temporary storage is necessary prior to shipment, the celery is kept in the shipper's cold room. The shippers receive their commission for locating buyers and arranging transportation.

Celery heart growers are assessed marketing and operating charges in a manner different from the way crate and bulk celery growers are assessed. Growers producing celery for the heart market deliver it to a shipper who packs and sells it for \$2.00 per crate. This includes the shipper's sales commission and assessments by the Cooperative. This \$2.00 per crate for celery hearts can be contrasted to the \$.23 per crate equivalent plus 10 percent of f.o.b. price assessed crate and bulk celery for operating and marketing costs.¹ The celery heart charge is higher because the shipper does the packing and furnishes the crates and wrapping materials, whereas the crate and bulk celery producers have generally done their own packing and furnished their own materials in the past.²

¹ The \$.23 per crate equivalent is the sum of the \$.18 per crate precooling, handling and storage fee that goes to the shipper plus the \$.05 per crate equivalent for Cooperative operations. Ten percent of f.o.b. price is the sum of the $8\frac{1}{2}$ percent sales commission the shipper receives plus the $1\frac{1}{2}$ percent assessment by the Cooperative.

² The Cooperative's move toward central packing of crate celery and their preparation of processing celery are discussed in the section on quality efforts.

At the beginning of the 1967 season, the Michigan Celery Promotion Cooperative became a stock cooperative. This change resulted from a need for additional funds. The organization was interested in building and operating a central packing plant, and as determined through a firm analysis, conversion to a stock cooperative provided an adequate financial base. The membership subscribed to a special 1967 mandatory assessment for purchase of common stock in the amount of \$50 for each acre of celery produced.

Quality Improvement Program

Quality improvement efforts of the Cooperative's Quality Committee have been effective and have provided a foundation upon which to build their marketing program. When the grower-member delivers celery to a shipper, a sample is inspected by a federal-state inspector who is hired by the Michigan Celery Promotion Cooperative. The Cooperative's quality standards for fresh crate celery exceed those for the federal celery grade, United States Number 1. However, they do not qualify the product for the next and highest federal celery grade, United States Extra Number 1. Generally, the Cooperative uses its own quality standards in marketing its fresh celery, not the United States grades.

Celery meeting the Michigan Celery Promotion Cooperative's Number 1 standards is marketed under the Cooperative's brand--Emblem of Quality. This celery must meet the federal standards for United States Number 1 grade celery and exceed them in the following four areas:

1. The stalk must be "well formed" instead of "fairly well formed."
2. The stalk must have not less than an 8-inch average midrib

on 3-dozen and larger sizes instead of a 6-inch average minimum midrib length on all sizes.

3. On trim, only 15 percent tolerance is allowed for two or more thin, short or spindly or coarse fibrous outer branches. The remainder is to have not more than one of this kind of branch. This is instead of the statement that the stalk be "well trimmed."
4. The stalk must be clean and of good general appearance and bloom, and shall be practically free from foreign materials and yellow or discolored leaves. This standard is in addition to those for United States Number 1 grade celery. (39)

Celery that does not meet the Cooperative's Number 1 standards may be returned to the grower for repacking or disposal, as the organization's general manager directs. It is not to be shipped to the fresh market except with the general manager's expressed consent, and then it must be shipped in an unbranded crate.

Most of the Cooperative's celery that is shipped to the fresh market has been hydrocooled and must be properly iced enroute if shipped out of the state. This is done as an additional effort toward quality control.

The Quality Committee has also made an effort to improve the quality of processing celery. Since there were no United States standards written specifically for processing celery, the Quality Committee developed their own quality standards. The Cooperative's preprocessed stemmed celery also must meet certain quality requirements.

These quality improvement efforts have won Michigan celery, and

especially the Cooperative's celery, a more respected name in the marketing channels among shippers, processors and field buyers. Some field buyers are willing to pay \$.50 to \$1.00 per crate for premium quality celery.¹ However, Michigan celery does not measure up to the usual quality of California celery. (30:4) This quality difference is very difficult to quantify. Even though celery from both areas may be United States Number 1 or better, buyers recognize that the California product generally is more compact, has more weight, and presents a better appearance. Part of this difference is due to varietal differences and growing conditions between the two producing areas.

California's transportation disadvantage in selling to eastern markets necessitates rather rigorous grading and standardization in order that the celery will compete favorably upon arrival. This is done voluntarily as California's celery quality control efforts are at the discretion of individual growers and shippers, and the celery is not inspected by federal-state inspectors as had been done with fresh market Cooperative celery in Michigan. Since this is a voluntary effort, there are exceptions at times to the usual "California quality." California appears to enjoy a reputational advantage in the fresh celery market. This has probably been strengthened by the considerable promotion efforts that have been conducted for other California crops and for processed crops by national brand distributors located in California. Conceivably, the rather numerous individual promotional efforts of industry segments and of large firms have had a cumulative effect in the minds of consumers even though California celery has not been heavily promoted. (22:13-14)

¹ See under Quality in the Attitudes section of Chapter 6.

Apart from stemmed celery for processors and heart celery for fresh market, Michigan producers have traditionally packed their celery on their own farms. The celery is cut and moved from the field to a nearby building or "shed"¹ where it is trimmed, washed, sorted and packed into crates according to size of stalk. With this occurring on each producer's farm, there is a tendency for disparity in pack uniformity even with inspection at the shipper receiving point. In the interest of alleviating this situation, the Michigan Celery Promotion Cooperative has actively explored the possibilities of a central packing operation(s).² During the 1967 season, the Cooperative contracted with one of the larger shippers to undertake central packing of celery produced near their packing facility. The Cooperative has also moved ahead with plans to construct a central packing facility of their own in another area.

The Cooperative's quality improvement efforts have provided a firm foundation for their involvement in other aspects of marketing their celery. Their experiences in quality, pricing, advertising and promotion efforts have been carried on simultaneously as part of a total marketing effort.

Pricing Activities

The Michigan Celery Promotion Cooperative's Price Committee (five growers, the manager, and the Cooperative Extension Service agent as an ex-officio member) sets f.o.b. prices of its products daily during

¹The celery industry refers to this method of packing celery as "shed packing."

²In Chapter 5 the economic rational for central packing is considered. Industry attitudes toward central packing are described in the Producer Marketing Cooperative section of Chapter 6.

its marketing season. Celery market information is gathered by this committee from a wide number of sources (Figure 3). A teletype service has been leased each season to provide prompt market information as supplied by the United States Department of Agriculture from other producing areas and from terminal markets. The general manager summarizes the information received by teletype. He also contacts each of the shippers daily to ascertain their inventory, sales and general feeling of the market and movement. Each of the grower-members of the Price Committee are also responsible for contacting a shipper to whom they have been assigned to ascertain his feeling of market conditions.

The general manager gathers data each day on the organization's inventory, f.o.b. prices at competing producing areas, terminal market conditions, and other relevant factors. He then calls the chairman of the Price Committee and discusses the situation with him. Together they decide on the advisability of convening the Price Committee. The members of the committee normally meet by means of a telephone conference call. Price changes, if made, are generally for the following day. Members of the Price, Quality, Advertising and Promotion Committees and the Board of Directors, as well as all shippers, are kept informed of relevant market factors through a "Daily Market Report" summary sheet.

The Price Committee members, during the conference calls, are generally most concerned with the Cooperative's inventory and expected receipts, f.o.b. prices in competing areas, shipments of California and New York celery, and shippers' comments about the market situation. They evaluate these and other factors and attempt to price their

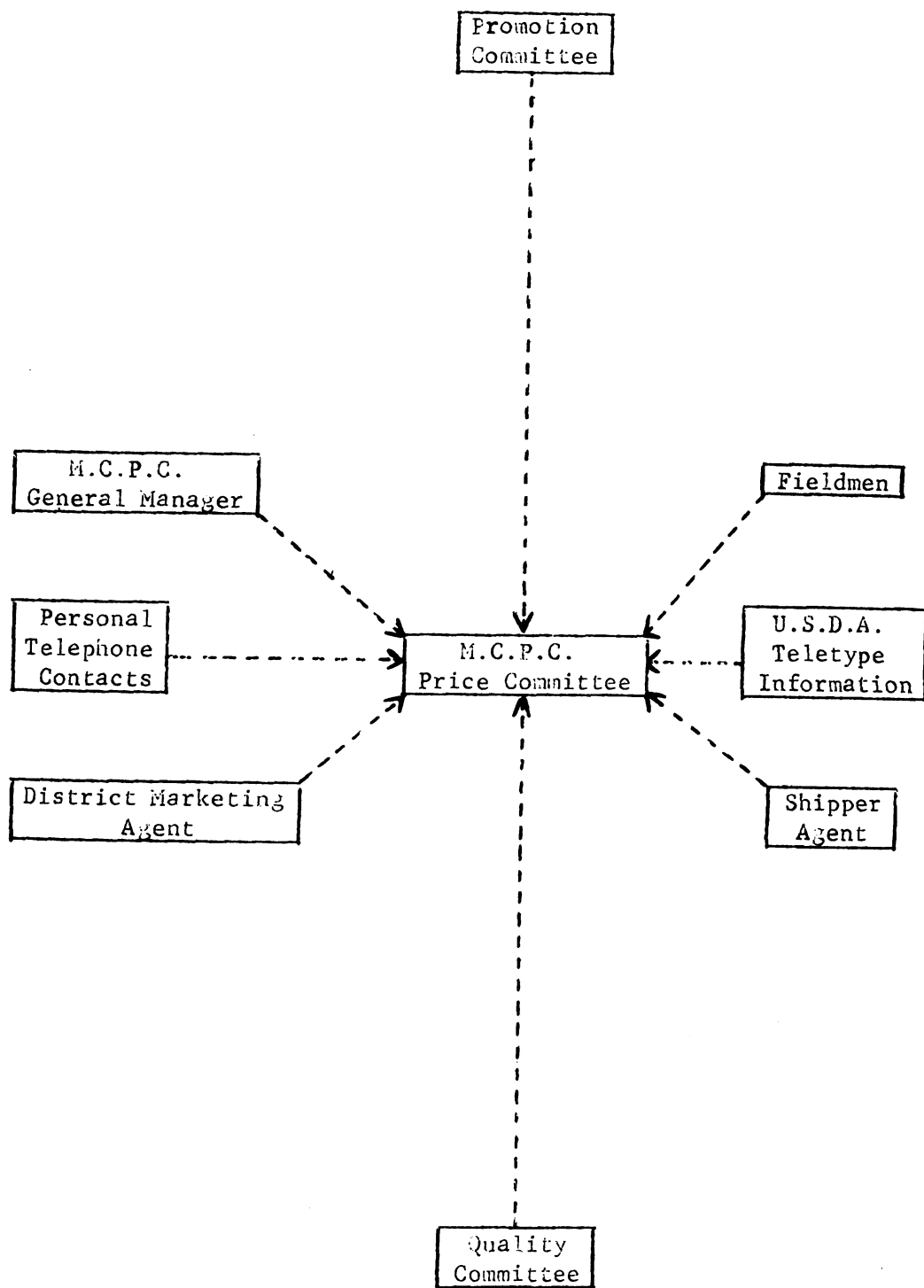


FIGURE 3.--Sources of information for the Michigan Celery Promotion Cooperative's Price Committee.

- - - - - Informational Sources

Source: (55:2)

products and divert their supplies so that they can sell all of the celery produced that meets the quality standards for the market for which it is intended.

The Price Committee administratively determines prices for each of the Cooperative's products: heart celery, each size of crate celery, bulk celery, stemmed celery, and different qualities. The f.o.b. price on fresh crate celery is almost always quoted to the nearest \$.25. This practice is apparently a matter of custom among all the celery producing areas. When market conditions necessitate a change in an f.o.b. price, it is seldom changed more than \$.25 in any one day. This practice, too, is common of all the producing areas but may be due to the magnitude and rapidity with which market factors change rather than due to custom.

Shippers with whom the Cooperative has contracted are usually notified by telephone the morning of the day when the change is to be effective, of any price changes made by the Price Committee. Shippers quote the f.o.b. prices determined by the Price Committee to prospective buyers. Each shipper also has available the usual transportation charges to various locations in order that he can tell the buyers what the product will cost delivered. Although the celery is sold for a set price, the Cooperative, through its shippers, offers what is known as "protection" or a guarantee that any downward price changes in the next two days will be retroactive. Protection might be viewed as a competitive technique except it is "offered" by practically all celery shippers. It is not representative of supply and demand conditions, thus the market power of the buyers apparently permits them to seek protection as a condition of purchase. In addition, the

Cooperative takes the responsibility that the celery will be delivered in a marketable condition to the buyer. Under the Perishable Agricultural Commodities Act, the buyer, upon receiving an order, is entitled to have it inspected by a licensed inspector and may reject it or arrange for a settlement if the product was misrepresented. (26:265, 273, 277)

The dollar receipts from all crate and processing celery are pooled, after the Cooperative and shipper assessments have been deducted, in semi-weekly pools, Monday-Wednesday and Thursday-Saturday. Different qualities of crate and processing celery are pooled separately. Bulk celery sold at a contract price to processors prior to the season is pooled with uncontracted bulk celery and converted to crate equivalents. The difference between the Cooperative's pooled bulk price and the crate pool price is also pooled. (48)

The Cooperative's 1963 through 1967 fresh celery shipments and celery deliveries for processing are shown in Table 6. Celery movement by the Cooperative was greatest in 1963 when 1,452 carlot equivalents of celery were shipped to the fresh market and 5,730 tons of processing celery were delivered to processors. In 1966 the celery volume shipped by the Cooperative to the fresh market (840 carlot equivalents) was about two-thirds that shipped in each of the three preceding years. This decline in volume may be attributed to quality problems necessitating a higher grade out.

Prices related to the Cooperative's annual celery movement may be shown within and between seasons by using weekly average f.o.b. prices of 16-inch crates of $2\frac{1}{2}$ dozen size Michigan Celery Promotion

TABLE 6.--Quantity of Michigan Celery Promotion Cooperative fresh and processing market celery sales, 1963-1967.

Year	Fresh Market (Carlots ^a)	Processing Market (Tons)
1963	1,452	5,730
1964	1,333	3,220
1965	1,282	2,247
1966	840	2,775
1967	1,270	2,662

^a600 crates of 16-inch crate celery per carlot and 1,425 crates of heart celery per carlot.

Source: (25)

Cooperative Number 1 celery as a guide.¹ Weeks of the Cooperative's marketing season were numbered beginning with 1, when the organization quoted f.o.b. prices 3 consecutive days in the same calendar week. Each calendar week thereafter until f.o.b. price quotes by the organization ceased was considered a week of the marketing season. These average weekly f.o.b. prices for 1963 through 1967 are shown in Figure 4. The general level of f.o.b. prices per crate of $2\frac{1}{2}$'s appears to be inversely related to the marketed production each year. That is, in the year of lowest marketed production, 1966, f.o.b. prices on $2\frac{1}{2}$'s were at their highest level, with the exception of the first and eleventh weeks of the 1967 season. In turn, the year of highest marketed production, 1963, saw f.o.b. prices per crate of $2\frac{1}{2}$'s at their lowest level for the five years 1963-1967.

¹The weekly average f.o.b. prices were calculated by weighting each price during the week by the number of days it held and dividing that total by the number of market days in the week.

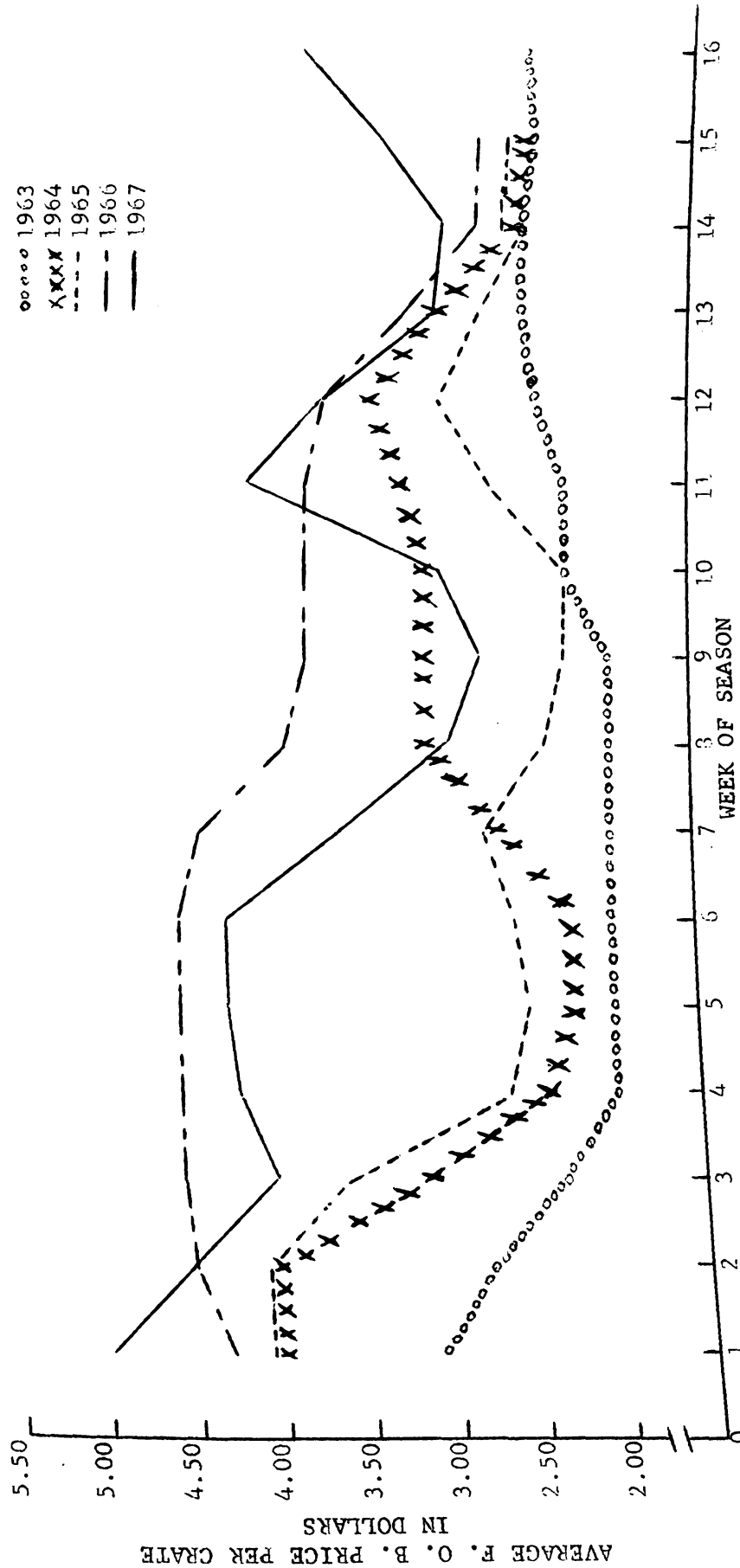


FIGURE 4.--Michigan Celery Promotion Cooperative average weekly f. o. b. prices per crate of 2½ dozen size celery, 1963-1967.^a

^aMichigan Celery Promotion Cooperative Number 1 quality of approximately 60 pounds per crate.

Source: See Appendix A, Table 4 for actual average prices.

Within the state of Michigan, during the Michigan celery marketing season the Michigan Celery Promotion Cooperative is the dominant firm and is surrounded by firms that may be referred to in the aggregate as a competitive fringe. The dominant firm sets the price for Michigan celery, and the small firms sell all the celery of comparable quality they produce at that price. The remaining Michigan market is available to the dominant firm. This is the case of price leadership by a dominant firm as described by Leftwich. (29:245) The small firms, however, are not always able to supply the quantity and quality needed by the larger chainstore operations. These orders are often filled by the dominant firm which is an advantage of Cooperative membership.

The market structure for the United States celery industry during the Michigan celery season is characterized by California's "barometric" price leadership. California prices perform this function because California produces at least 50 percent of the available supply,¹ and there is a 4 to 7 day transportation lag before this produce reaches the eastern United States markets. In contrast to the Michigan market structure, no California celery marketing firm sets price prior to sale. California celery prices, determined by the market assessments of a large number of buyers and a relatively smaller number of sellers, do perform this "barometric" price leadership.

As indicated earlier, the transportation costs for Michigan and California celery are approximately equal at the Mississippi River,

¹See Chapter 2, page 8 for the percentages by state of United States celery production.

which acts as a western market boundary for Michigan celery, but not for California celery which must sell at a premium over Michigan celery east of the Mississippi River. Comparisons of how the Michigan Celery Promotion Cooperative has set its prices relative to the f.o.b. prices of other areas are detailed in Chapter 4.

Advertising and Promotion

The Advertising and Promotion Committee of the Michigan Celery Promotion Cooperative has directed its activities principally to retailers and processors. This is the "push" approach to advertising and promotion in which the product is "pushed" into market channels with little concern for consumer demand. When these activities are directed toward the consumer, it is referred to as "pulling" the product through. Until 1967, the committee itself actually conducted the advertising and promotion program.

Advertisements were placed in selected trade publications prior to and during each marketing season. In addition, direct mail advertisements were distributed to chainstore buyers at timely dates. Members of the Advertising and Promotion Committee or other Cooperative personnel, in a number of promotional trips in past years, called upon fresh market and processor buyers. This committee has also been actively seeking a container other than the wire-bound "Howard" crate in which celery might be shipped and exploring the possibilities of marketing individually wrapped, prepackaged celery stalks. Cooperative advertising which appeared on the packages or containers was standardized at the request of the Advertising and Promotion Committee. However, a number of shippers under contract with the Cooperative are permitted to advertise their own brands on celery heart packages

and in trade publications and may or may not note their Michigan Celery Promotion Cooperative affiliation. Shippers may also perform a broker function for commodities other than celery. The shipper's brand and line of products are his means of differentiating himself from other shippers.

For the 1967 season, the Advertising and Promotion Committee engaged a merchandising agency to conduct their advertising and promotional program. This was done to achieve a more professional and effective program and to free the committee members from a time-consuming activity. The agency's program included advertising in trade publications, promotional visits to produce merchandisers and buyers in several major midwest cities, a direct mail program, and publicity releases. This program for the most part remains directed at retailers and processors, not the ultimate consumer. The Advertising and Promotion Committee continues with the package and prepackage efforts.

Other Areas of Concern

In 1965 the Michigan legislature passed and the Governor signed the Agricultural Commodities Marketing Act, Public Act 232, that permits state agricultural commodity market orders. The Michigan Celery Promotion Cooperative has investigated the possibilities of a state market order for Michigan celery and requested a hearing in 1966 on an order which they prepared, but the hearing was never held. Reports as to why the hearing was not held were vague and contradictory. The Cooperative maintains a continuing interest in the potential for a state market order.

Another area of considerable interest to the Cooperative is mechanical celery harvesting. There are a few mechanical celery

harvesting aids developed, but for the most part Michigan celery remains hand harvested. Producers are looking to potential labor savings arising from a mechanized harvester. However, celery harvest mechanization may be related to celery marketing if the nature of the product¹ or its quality are altered by harvest mechanization. Possible interrelationships between harvest mechanization and central packing have been acknowledged by Cooperative personnel. Market orders and harvest mechanization as related to central packing are given detailed consideration in Chapter 5.

Problems Confronting the Cooperative

The problem as presented in the introductory chapter (Chapter I) describes the situation confronting the Michigan Celery Promotion Cooperative and the Michigan celery industry. More specifically relative to the Cooperative, the organization is faced with declining membership and acreage. Due to this situation, the membership is reluctant to make capital expenditures for new or improved packing and grading facilities. The membership is also reluctant to pursue other expansionary tactics such as growth into a multi-vegetable organization, feeling that they must first have a successful celery organization.

The above discussion again points out the need for an analysis of alternative organizational techniques and marketing practices that could possibly be implemented.

The declining membership and consequent decrease in celery

¹For example, cutting the stalk above the butt so that the petioles would no longer be held together.

production controlled by the Cooperative places the possible effectiveness of their price program in jeopardy. If the group is to continue to be active in pricing its products there is a need for improved price information and a viable organization.

CHAPTER IV

PRICE PREDICTION EQUATIONS FOR MICHIGAN COOPERATIVE CELERY

Introduction

The Michigan Celery Promotion Cooperative's role in pricing its products denotes the need for quantitative information concerning the price relationships. An analysis of annual United States celery prices is presented to provide a setting for examining the Cooperative's celery prices. To provide quantitative information on the Cooperative's price relationships, price prediction equations for Cooperative celery were developed. These equations furnish improved decision-making information to the Cooperative and others in the industry.

In Chapter 3 it was noted that the Michigan Celery Promotion Cooperative has priced its celery prior to offering it for sale since the Cooperative's inception in 1963. This process of price determination is best described as administered pricing, in which any price set by a firm official is an administered price. The Cooperative is limited in its freedom of pricing action by the broad forces of supply and demand that affect its products. These market constraints were first examined in this study through an analysis of annual United States average f.o.b. shipping point celery prices. This provided a more comprehensive framework for analyzing the within-Michigan celery season price predicting equations that were developed.

The within-Michigan marketing season f.o.b. shipping point price predicting equations were developed to quantify factors bearing

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on Michigan Celery Promotion Cooperative prices. Statistical significance of factors believed to influence Michigan f.o.b. celery prices was determined to empirically evaluate hypotheses concerning the relationship of the factors to the prices. The within-season equations also were developed to quantify the change in price the Michigan Celery Promotion Cooperative could expect through controlling its celery supply. A principal consideration in formulating and developing these equations was that they be computationally usable to the Cooperative's Price Committee.

A single equation--multiple regression--approach was selected for the within-season analysis because, in a behavioral sense, this technique approximates the procedure the Cooperative's Price Committee goes through in arriving at a price and would be computationally usable to the committee. The influence of both supply and demand factors was considered.

The single equation approach was also utilized in analyzing annual United States celery prices to permit their comparison with the within-season analysis. Because the annual analysis was done after the within-season analysis, variables such as supply of other salad vegetables and weather for consuming areas, not significant within season, were not considered in the annual analysis. The objective of this analysis was to determine factors that could be used to estimate celery price on an annual basis and how these factors relate to those used to estimate Michigan Celery Promotion Cooperative price on a weekly basis. Another objective of the analysis was to determine with what accuracy annual United States f.o.b. celery prices could be estimated. A broader view of celery prices was provided by

this approach, and it permitted a longer-run (1947-1966) view of these prices.

Analysis of Annual United States Celery Prices

Economic aspects of the United States celery industry were presented in the second chapter. The demand and price structure relationships for United States celery are diagrammatically illustrated in Figure 5 below. The arrows indicate the direction of the relationships.

Celery production is determined by the acreage harvested and its yield per acre. Weather may influence both the celery acreage planted and harvested. Rainfall, making it impossible to move equipment onto the fields, and freezing temperatures are the principal weather variables limiting celery acreage planted. These weather variables also restrict the acreage harvested. Temperature extremes, either hot or cold, and disease may decrease yields and quality.

Data indicating the quantity of United States celery production moving into fresh and processing market uses respectively are not available. The United States Department of Agriculture Statistical Reporting Service classifies all United States celery production for fresh market use and notes that some is used as processing celery. The Market News Service in each state producing celery reports that state's harvested production and its value at f.o.b. shipping point to the Statistical Reporting Service, United States Department of Agriculture. Value is for the crop year and does not correspond to calendar year income. Per unit (60 pound crate) value is the quotient derived by dividing the total celery production value for all states by the total harvested production for all states. As used in this

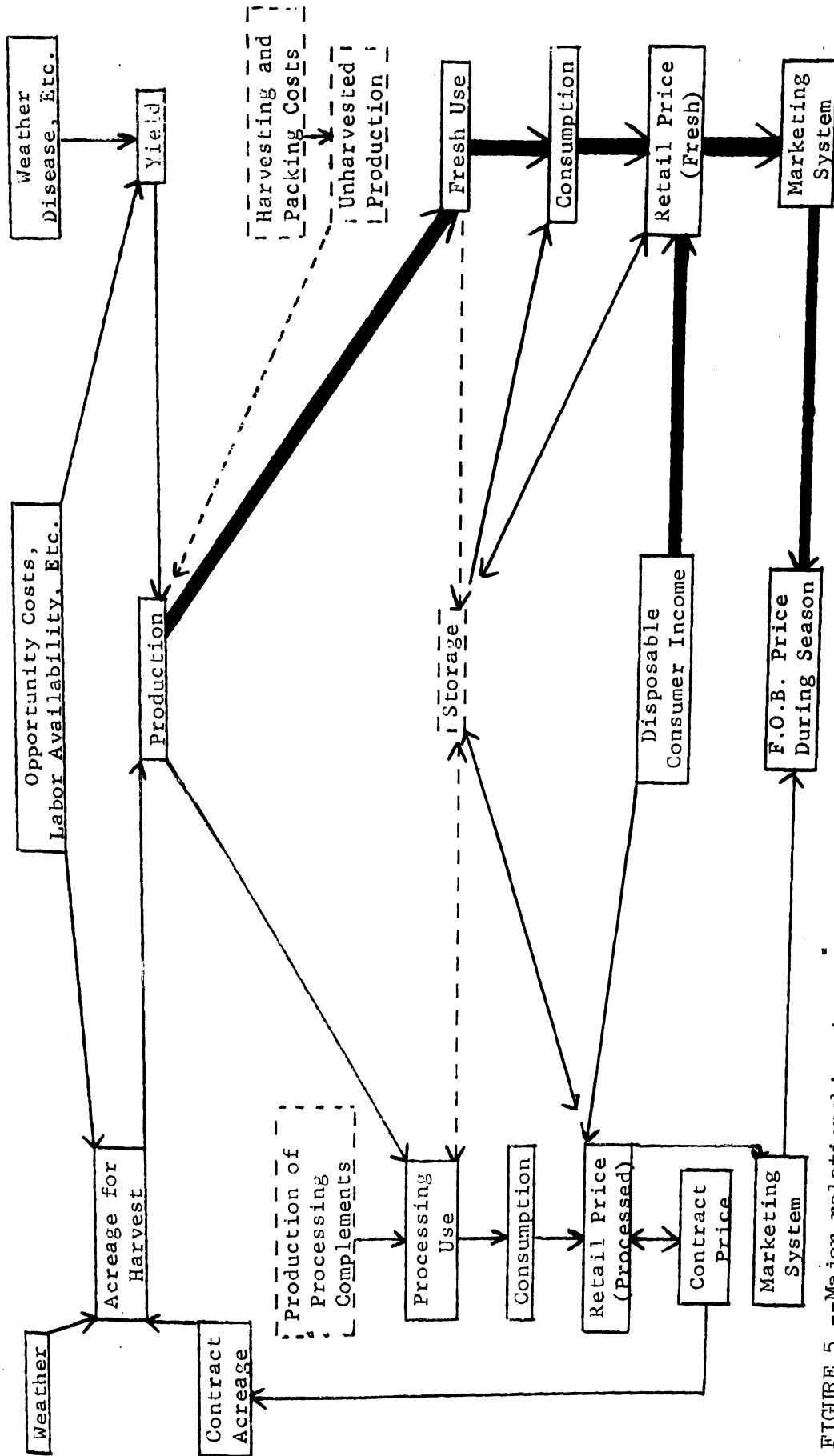
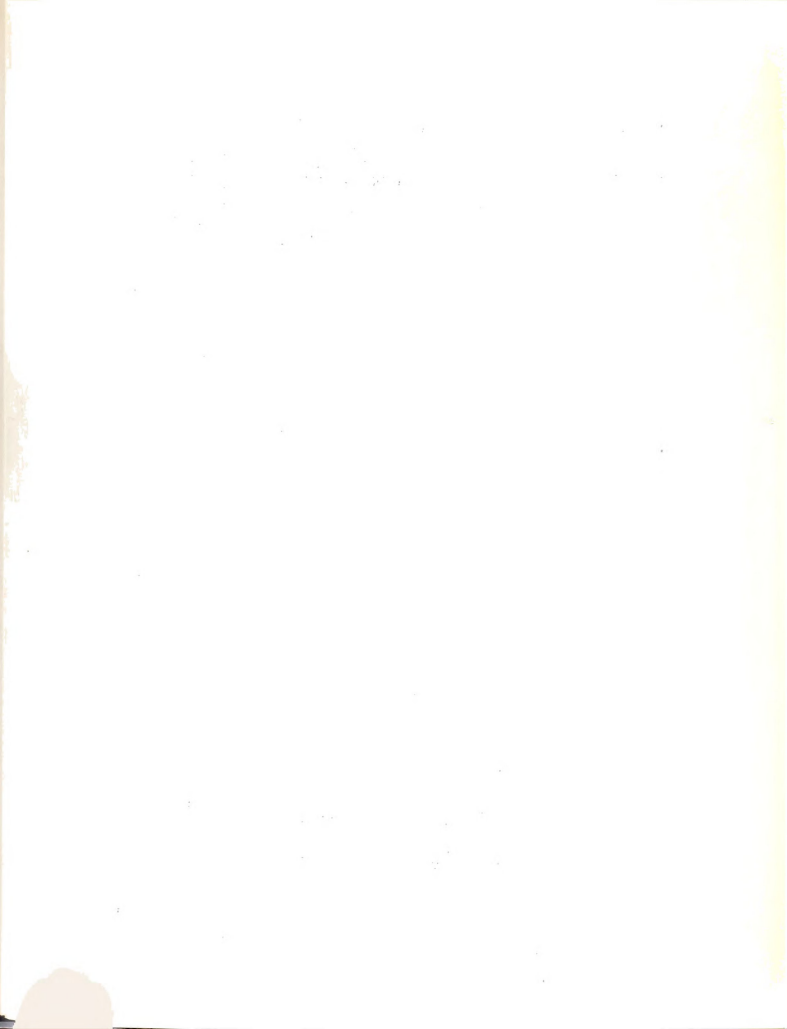


FIGURE 5.--Major relationships in the demand and price structure for celery in a given year.

^aHeavy arrows indicate the more important relationships, and dashed boxes indicate factors of minor importance each season.



annual analysis, "price per crate" is not in general a "price" that occurred under market conditions for the related quantity. (59)

The analyses of average annual United States f.o.b. shipping point prices were based on the years 1947 through 1966. Earlier years were not utilized because of market changes during the 1930's depression and World War II. Although there were shifts in production from Michigan to Florida and California during this period and market structure changes in Michigan and Florida, these changes, for purposes of these analyses, are assumed to have had a negligible influence on annual United States celery prices.

In analyzing annual United States celery prices, production per capita and disposable income per capita were used as variables that influence price. Annual United States celery price as a function of these factors was analyzed with and without deflating the dependent and independent monetary variables by the Bureau of Labor Statistics Consumers' Price Index. Natural data and first differences of natural data were both employed to determine comparability of fit and results. From the standpoint of variation in price "explained" by the independent variables, the analyses yielded poor results. The relationships obtained, however, merit discussion because of their logical validity.

Tables 7 and 8 respectively show the undeflated and deflated (by Consumers' Price Index) natural statistical series used, together with actual and computed United States annual average celery prices. The use of first differences of natural data increased the coefficient of multiple determination for both the deflated and undeflated relationships, although they remained less than .60 as shown in Table 9.

TABLE 7.--Actual and computed United States annual average celery prices and related variables, 1947-1966.

Year	P		Qp	Yp
	Price Per Crate Actual ^a	Computed ^b	Production Per Capita ^c	Disposable Income Per Capita ^d
	(\$)	(\$)	(Lbs.)	(\$)
1947	3.11	2.75	7.9	1,173
1948	2.13	2.44	8.6	1,280
1949	2.42	2.49	8.5	1,261
1950	2.21	2.34	8.8	1,359
1951	2.29	2.18	9.1	1,465
1952	2.44	2.21	9.0	1,512
1953	2.17	2.19	9.0	1,568
1954	1.99	2.07	9.3	1,567
1955	2.36	2.05	9.3	1,637
1956	1.97	1.86	9.7	1,741
1957	2.32	2.20	8.8	1,803
1958	2.66	2.44	8.2	1,826
1959	1.94	2.17	8.8	1,905
1960	1.97	2.32	8.4	1,947
1961	1.93	2.43	8.1	1,984
1962	2.80	2.61	7.6	2,064
1963	2.13	2.59	7.6	2,136
1964	2.72	2.67	7.3	2,273
1965	2.67	2.63	7.3	2,411
1966	2.95	2.53	7.4	2,568

^aCompiled from sources numbers 2 and 59.

^bComputed from the following equation whose coefficients were estimated by ordinary least squares:

$$P = 6.2871 - 0.0403Q_p - 0.0003Y_p$$

$$(1.2379) \quad (.0114) \quad (.0002)$$

Numbers in parentheses under the coefficients are the respective standard errors.

$$R^2 = .45 \quad \text{Standard error of estimate} = .28$$

^cCompiled from sources numbers 2 and 59 with production divided by July 1 population including armed forces abroad.

^dDisposable income divided by July 1 population including armed forces abroad.

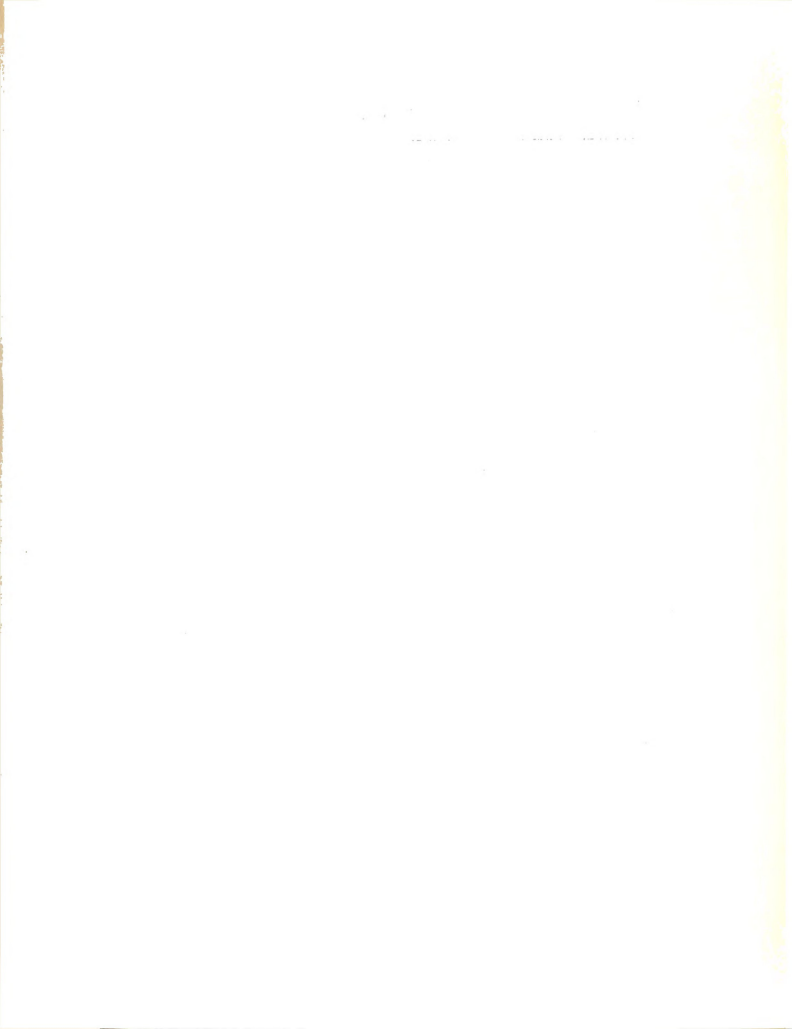


TABLE 8.--Deflated actual and computed United States annual average celery prices and related variables, 1947-1966.

Year	Pi		Qp	Ypi
	Price Per Crate Deflated by		Production Per Capita ^c	Disposable Income Per Capita Deflated by Consumers' Price Index ^d
	Actual ^a	Computed ^b		
	(\$)	(\$)	(Lbs.)	(\$)
1947	4.00	3.29	7.9	1,508
1948	2.54	2.91	8.6	1,527
1949	2.92	2.98	8.5	1,519
1950	2.64	2.64	8.8	1,622
1951	2.53	2.49	9.1	1,619
1952	2.64	2.51	9.0	1,635
1953	2.33	2.43	9.0	1,682
1954	2.13	2.29	9.3	1,674
1955	2.53	2.14	9.3	1,755
1956	2.08	1.79	9.7	1,838
1957	2.37	2.23	8.8	1,840
1958	2.64	2.58	8.2	1,813
1959	1.91	2.16	8.8	1,877
1960	1.91	2.34	8.4	1,888
1961	1.85	2.45	8.1	1,904
1962	2.66	2.60	7.6	1,958
1963	2.00	2.52	7.6	2,002
1964	2.52	2.48	7.3	2,103
1965	2.43	2.31	7.3	2,194
1966	2.61	2.11	7.4	2,271

^aCompiled from sources numbers 2 and 59 and deflated by the Consumers' Price Index, 1957-1959 base=100.

^bComputed from the following equation whose coefficients were estimated by ordinary least squares:

$$Pi = 10.0216 - 0.0494Qp - 0.0019Ypi$$

(1.8676) (0.0143) (0.0005)

Numbers in parentheses under the coefficients are the respective standard errors.

$$R^2 = .50 \quad \text{Standard error of estimate} = .35$$

^cCompiled from sources numbers 2 and 59 with production divided by July 1 population including armed forces abroad.

^dDisposable income divided by July 1 population including armed forces abroad and deflated by the Consumers' Price Index, 1957-1959 base=100.

TABLE 9.--General results of the two United States annual average price relationships for each of the data forms.^a

Price Relationship ^b	Data Form	R ²	Standard Error of Estimate	Significance Level, Independent Variables	
				Qp	Yp
P:Qp, Yp	Natural	0.45	0.28	0.003	0.177
	First Differences	0.56	0.33	< 0.0005	0.374
				Qp	Ypi
Qi:Qp, Ypi	Natural	0.50	0.35	0.003	0.001
	First Differences	0.59	0.35	< 0.0005	0.194

^aCoefficients were calculated by ordinary least squares.

^bThe subscript "i" refers to deflation of the variable by the Bureau of Labor Statistics Consumers' Price Index, base 1957-1959=100.

The negative regression coefficients for disposable income per capita, both deflated and undeflated,¹ indicate that United States price per crate of celery has decreased with an increase in this factor. Nationally, civilian consumption of fresh vegetables has been declining relative to consumption of processed vegetables (Table 10). The percentage of vegetables consumed in fresh form by civilians declined from 78 percent in 1945 to 69 percent in 1963. This substitution of processed for fresh forms of vegetables in consumption is attributed to changes in consumer incomes and living patterns. (38:15; 55)

Celery is a vegetable primarily consumed in fresh form and in processed form such as juices or soups. Its processing uses are limited and,

¹See Tables 7 and 8, footnote b.



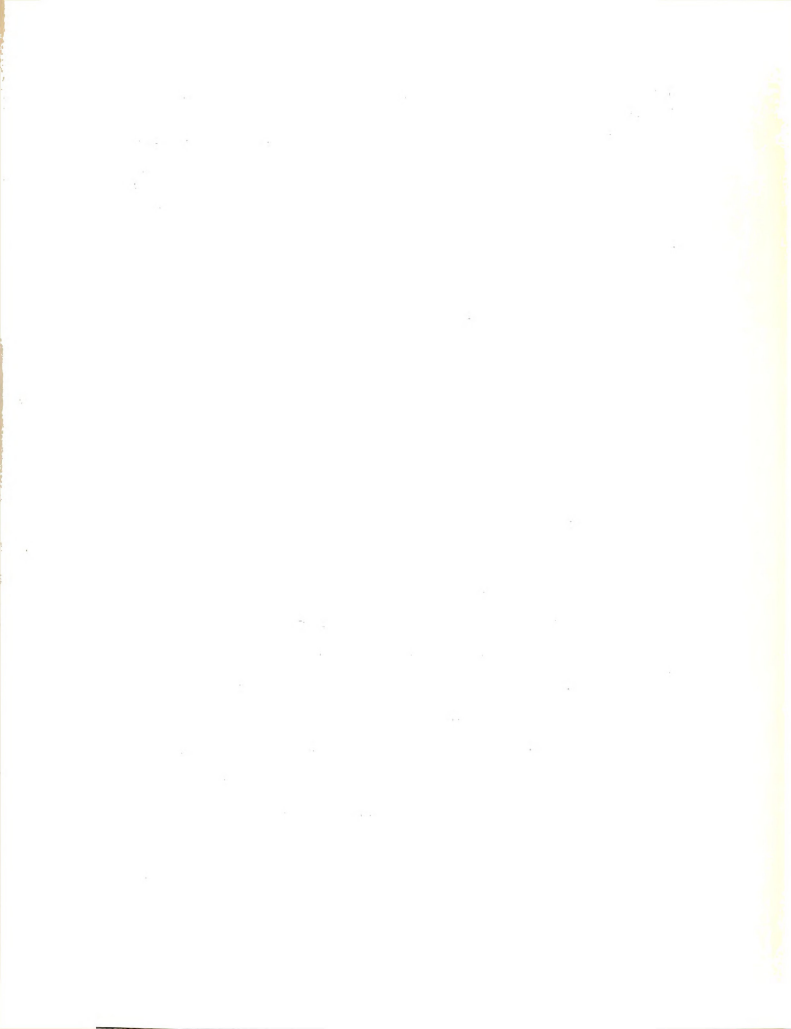
TABLE 10.--Percentage civilian consumption of vegetables in fresh and processed form for selected years.

Year	Fresh (%)	Processed (%)
1945	78	22
1950	75	25
1955	73	27
1960	71	29
1963	69	31

Source: (58:123-138)

therefore, its fresh per capita consumption could decline if consumers were to substitute other processed vegetables for fresh celery. To determine if there may have been a shift in demand for celery during the period 1947-1966, United States annual average celery prices per crate deflated by the Consumers' Price Index were plotted with annual celery production per capita as shown in Figure 6.¹ Simple least squares regression was used to "fit" straight lines to the data for the periods 1948-1957 and 1960-1966 (See Figure 6). The analysis indicates a decrease in demand for celery from the first to the second period and a decrease in slope of the demand curve from -0.53 to -0.34. However, caution should be exercised in considering these results as the coefficient of determination for the first period is 0.57 and for the second 0.17. The variation in price "explained" by per capita consumption is rather low for the 1960-1966 period relative to the 1948-1957 period. The analysis indicates that the general decline in fresh vegetable consumption noted in Table 10 has occurred

¹For data series, see Table 8 above.



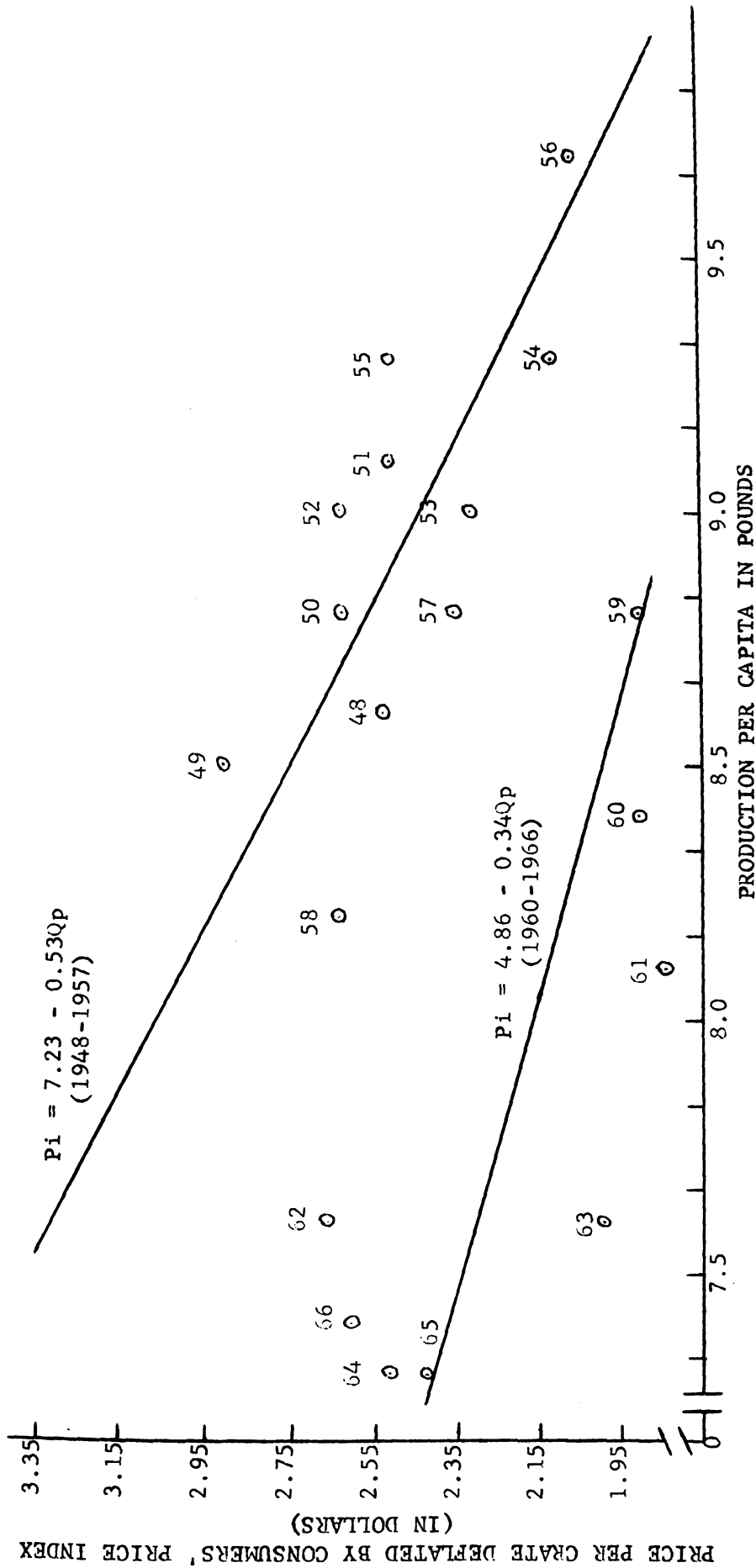


FIGURE 6.--United States annual celery production: actual and estimated dollars (deflated) per crate and per capita production.^a

^aSee Table 8, page 57, columns headed "Price per Crate Deflated by Consumers' Price Index--Actual" and "Production per Capita" for additional detail.

for celery. Caution should be exercised in considering this analysis as farm to market losses were ignored and the quantity data was production and not consumption data.

Analysis of Michigan Celery Prices

Economic and price administrative aspects of the Michigan Celery Promotion Cooperative were described in Chapter 2. The diagrammatic illustration of celery demand and price structure relationships in Figure 5 above is applicable to the Cooperative in a broad sense, but other factors not directly noted also impinge in the short run. The following structural model was developed to represent some of the economic factors that could influence the Cooperative's celery prices each week throughout their season:

$$P_{mt+1} = Q_m, Q_{mt+1}, Q_{ct}, Q_{nyt}, Q_{svt}, W_{ct}$$

where:

P_{mt+1} = Michigan Celery Promotion Cooperative f.o.b. fresh celery price during period $t+1$

Q_m = Michigan Celery Promotion Cooperative fresh celery inventory at end of period t

Q_{mt+1} = Michigan Celery Promotion Cooperative fresh celery receipts during period $t+1$

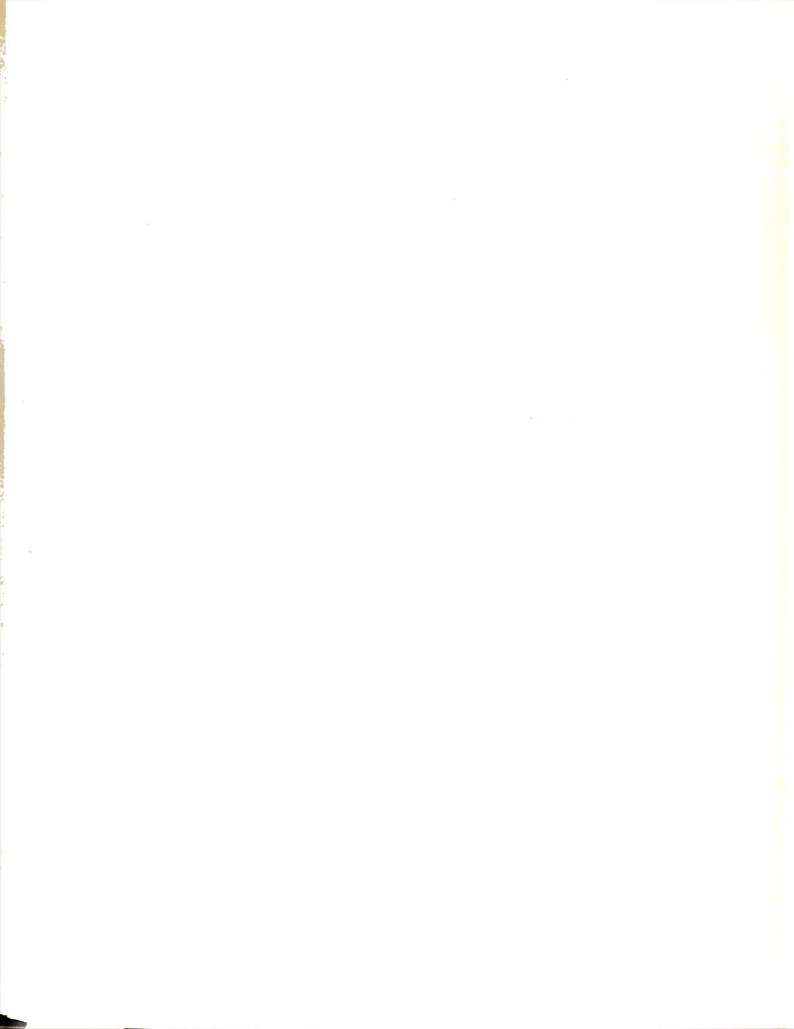
Q_{ct} = California celery quantity shipped east during period t

Q_{nyt} = New York celery quantity shipped during period t

Q_{svt} = Quantity of salad vegetables other than celery shipped during period t

W_{ct} = Weather index of major celery consumption areas during period t

Processing celery enters the model through variable Q_{mt+1} (Michigan Celery Promotion Cooperative fresh celery receipts during period $t+1$), which can be altered by the Cooperative controlling the



quantity harvested for the fresh versus processing markets. Neither quantity nor price data for processing celery were available outside of the Cooperative, which was another reason for utilizing the single equation approach.

The model includes a number of variables that the Cooperative's Price Committee has historically considered in arriving at prices for their celery. Their interest in pricing has been to set a price that would move the organization's supply through the market without resulting in their having an excess supply exhibited by an unusually large inventory or an excess demand evidenced by a large number of unfilled orders.

An equation based upon this structural model would describe supply and demand intersection points over time, within the limits of the variables utilized. The equations do not necessarily show the maximum price, but points that are equal to or less than the maximum demand curve. The maximum demand curve (a hypothetical curve) would be a function of market structure and various nonprice tactics that an organization might use.

Price Prediction Results

Statistical Model

The Michigan Celery Promotion Cooperative's formation in 1963 limits the period available for historical analysis of their celery prices. Equations were fitted with 1963 through 1966 data and were tested during the 1967 Cooperative marketing season. These results were analyzed at the completion of the marketing season, and regression coefficients for selected equations were updated using data for the period 1963 through 1967.



The Cooperative's Price Committee adjusts its prices throughout the market season as they deem necessary based upon their judgment of market conditions. At the initiation of this study, the Committee expressed an interest in making their pricing decisions prior to or on Monday morning of each week, and they would then adjust prices during the week if conditions warranted.

The sales period is broken each Sunday throughout the Cooperative's marketing season. Because of the Cooperative's interest in Monday morning pricing and the Sunday break in sales, seven-day periods coinciding with calendar weeks were used as the time periods within the marketing season. The weekly time periods were also used because they were of sufficient length for the Cooperative to reflect, through its daily prices and control of receipts, what was required to move the supply through the market as evidenced by their inventory and volume of orders. Weeks were numbered consecutively for each marketing season, starting with the first week in which the Cooperative quoted a price on $2\frac{1}{2}$ dozen size celery for three consecutive days. Numbering of weeks continued each season until the Cooperative no longer quoted a price on $2\frac{1}{2}$ dozen size celery in their Daily Market Reports (11). These numbered weeks provided a basis for comparing within-season prices among seasons. All marketing seasons in the analyses had 15 weeks except 1963 and 1967 which were each 16 weeks in length.

After testing a number of price relationships, it became apparent that a better fit could be obtained by dividing the Cooperative's marketing season into two parts and fitting an equation to each portion. Due to a shift in volume of sales from major celery producing areas generally occurring about the seventh week of the Cooperative's



marketing season, the season was divided between the seventh and eighth weeks. Orange County, New York, generally not a celery supplier prior to the eighth week, begins marketing on the eastern seaboard at that time.¹ The other shift in origin of celery marketed occurs between two California celery producing areas--Santa Maria and Salinas. By the eighth week of the Cooperative's marketing season, the majority of California celery being shipped is produced in the Salinas rather than Santa Maria area, and by the end of the Cooperative's season, approximately 20 percent of the California celery originates from Salinas.² Also, a better fit was obtained by making the division at the end of week 7 rather than at the end of week 6, 8, 9 or 10.

Based upon relationships hypothesized in the structural model, variables were selected for which data would be available in week t in order that the equations could be used to predict price for week $t+1$. All variables used in these analyses were expressed in actual terms.

The price estimating equation selected for the first seven weeks of the Cooperative's marketing season was:

Equation 1.

$$Pl_{mt+1} = 62.7915 - 0.0019Q_m + 0.9680P_{mft} \\ (30.4854) \quad (0.0010) \quad (0.0551)$$

Numbers in parentheses under the coefficients are the respective standard errors. To convert price estimates and coefficients to a price-per-crate basis, they must be multiplied by 0.01.

¹Orange County, New York began quoting prices in week 7-1963, week 5-1964, week 5-1965, week 7-1966, and week 5-1967.

²See Appendix A, Table 5 for additional detail.



$R^2 = .95$ Degrees of freedom = 24 Standard error of estimate = .22

where:

P_{1mt+1} = M. C. P. C. average f.o.b. shipping point price in dollars per crate of $2\frac{1}{2}$ size celery for week $t+1$

Q_m = Sum of 1) Number of M. C. P. C. $2\frac{1}{2}$ dozen crates on inventory Saturday evening of week t , and 2) Number of M. C. P. C. $2\frac{1}{2}$ dozen crates that were harvested for week $t+1$

P_{mft} = Midpoint of Santa Maria, California f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t

The price estimating equation selected for the eighth week of the M. C. P. C. marketing season to its completion was:

Equation 2.

$$P_{2mt+1} = 97.1591 - 0.0028Q_m + 0.2315P_{m7} + 0.5216P_{sft} + 0.1234P_{oft} \\ (33.5785) (0.0009) (0.0734) (0.1385) (0.0597)$$

Numbers in parentheses under the coefficients are the respective standard errors. To convert price estimates and coefficients to a price-per-crate basis, they must be multiplied by 0.01.

$R^2 = .78$ Degrees of freedom = 28 Standard error of estimate = .27

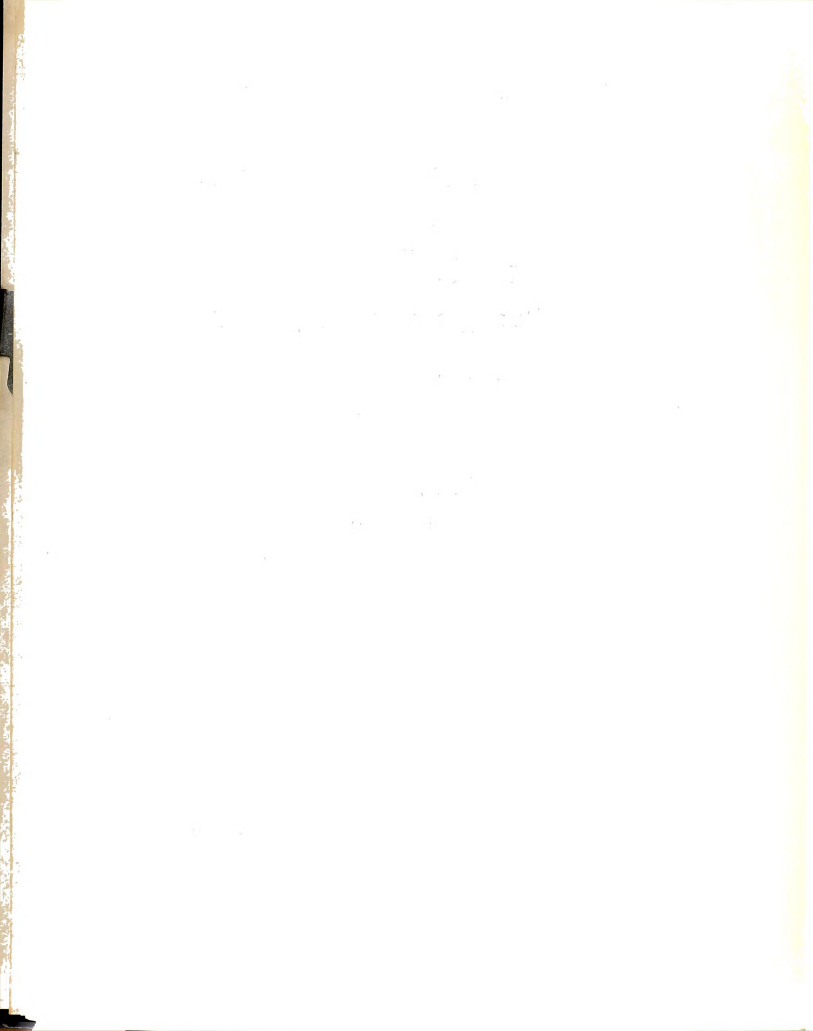
where:

P_{2mt+1} = M. C. P. C. average f.o.b. shipping point price in dollars per crate of $2\frac{1}{2}$ size celery for week $t+1$

Q_m = Sum of 1) Number of M. C. P. C. $2\frac{1}{2}$ dozen crates on inventory Saturday evening of week t , and 2) Number of M. C. P. C. $2\frac{1}{2}$ dozen crates that were harvested for week $t+1$

P_{m7} = M. C. P. C. average f.o.b. shipping point price in dollars per crate of $2\frac{1}{2}$ size celery during the seventh week of the M. C. P. C. marketing season

P_{sft} = Midpoint of Salinas, California f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t



Poft = Midpoint of Orange County, New York f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t

Actual and estimated Michigan Celery Promotion Cooperative's average f.o.b. shipping point price per crate of $2\frac{1}{2}$ size celery each week of the 1963, 1964, 1965 and 1966 Cooperative marketing seasons are respectively shown in Figures 7, 8, 9 and 10.¹ The usual f.o.b. price change per crate of celery is \$.25, and an additional measure of accuracy is the number of times the estimated price was within plus or minus \$.125 of the actual average price. In 1963 the estimated price was within plus or minus \$1.25 of the actual average price 9 out of 15 weeks, 1964--11 out of 15 weeks, and in 1965 and 1966, 4 out of 15 weeks.² Another accuracy measure of the estimating equations is their ability to indicate the direction of price change or no price change, whichever occurs. Actual Cooperative prices are not necessarily changed each week. In these instances, an estimated price within plus or minus \$.125 of the actual price is assumed to indicate no change. In 1963 and 1966 the estimating equations predicted the direction of price change or no price change 10 out of 14 times and in 1964 and 1965, 11 out of 14 times.²

These variables provided better estimates for 1963 and 1964 than for 1965 and 1966. However, the indication of direction of price change or no price change was about equally satisfactory for each of the years 1963-1966. Following a discussion of variables included and excluded

¹For additional detail see Appendix A, Table 4. The data series for the independent variables for the first seven weeks of the Cooperative's marketing season are in Appendix A, Table 6, and those for the eighth week on are in Appendix A, Table 7.

²See Appendix A, Table 4 for additional detail.



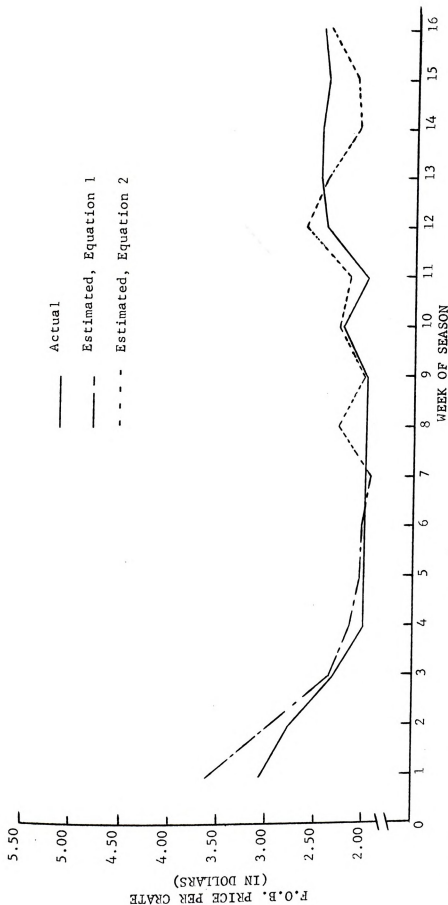


FIGURE 7.--Michigan Celery Promotion Cooperative actual and estimated average weekly f. o. b. shipping point price per crate of $2\frac{1}{2}$ dozen size celery, 1963 marketing season.^a

^aSee Appendix A, Table 4 for additional detail.

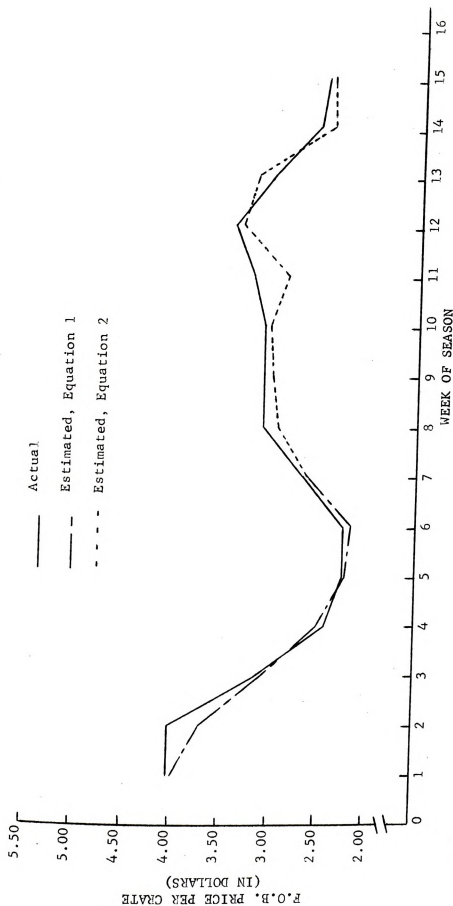


FIGURE 8.--Michigan Celery Promotion Cooperative actual and estimated average weekly f. o. b. shipping point price per crate of 2½ dozen size celery, 1964 marketing season.

^aSee Appendix A, Table 4 for additional detail.



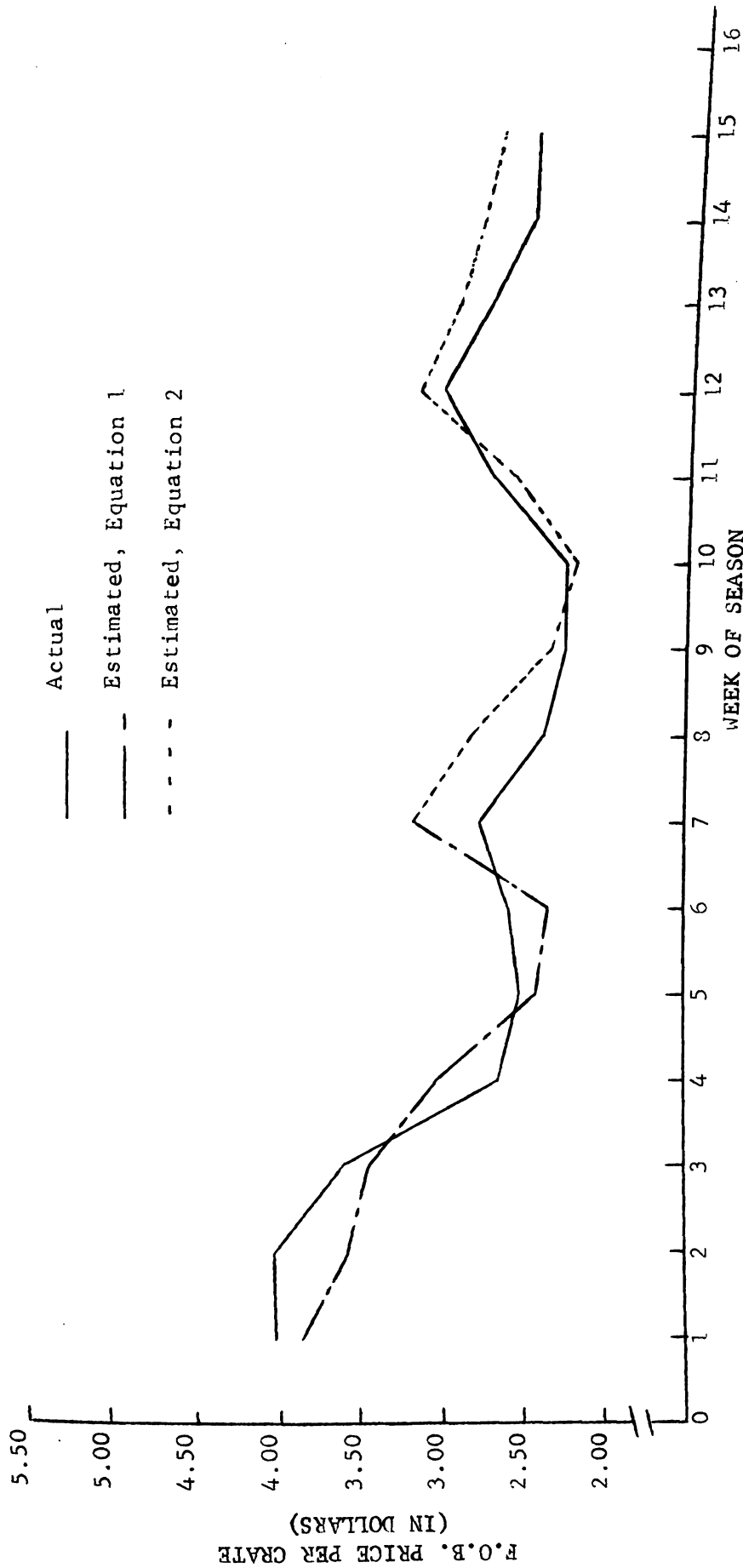


FIGURE 9.--Michigan Celery Promotion Cooperative actual and estimated average weekly f. o. b. shipping point price per crate of 2½ dozen size celery, 1965 marketing season.^a

^aSee Appendix A, Table 4 for additional detail.



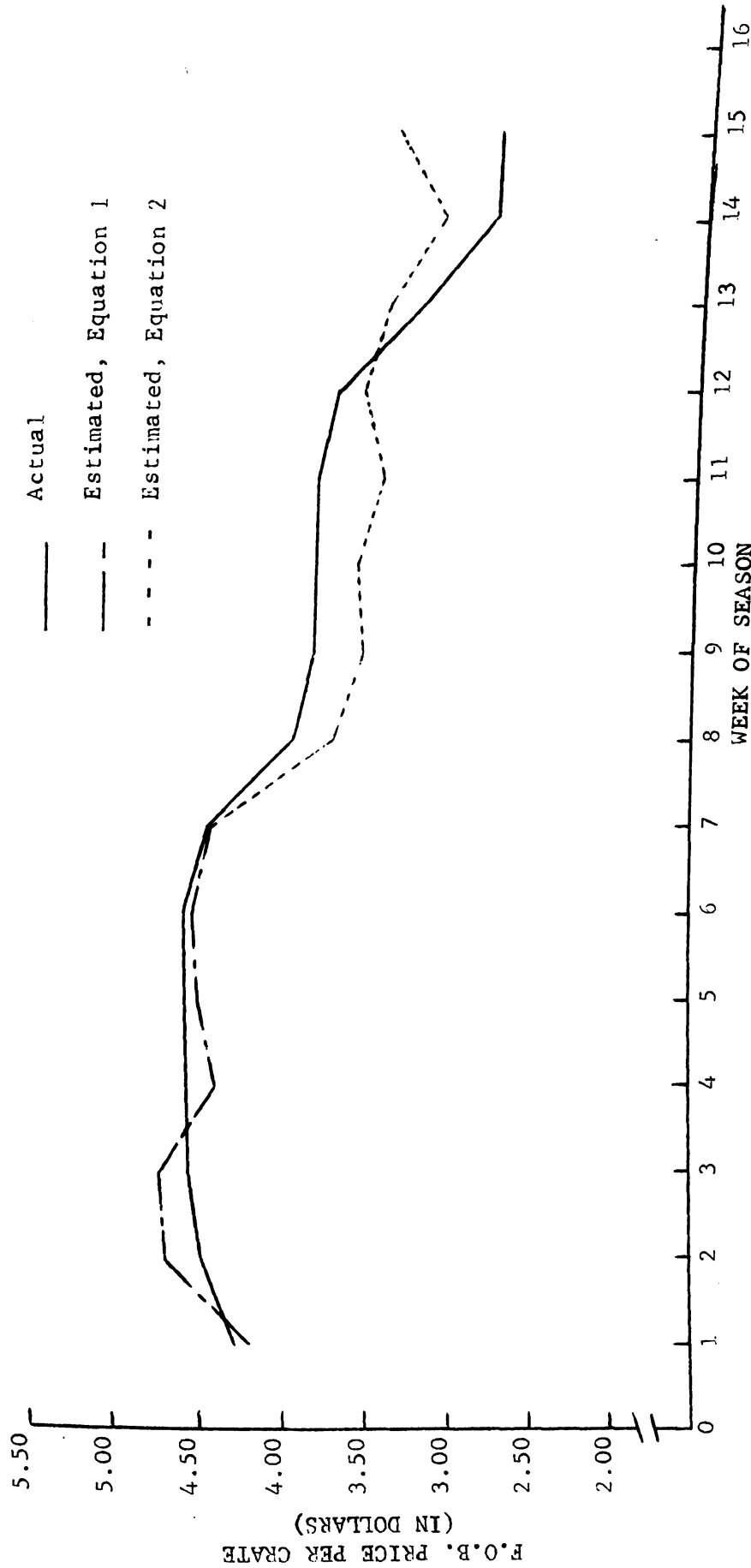


FIGURE 10.--Michigan Celery Promotion Cooperative actual and estimated average weekly f. o. b. shipping point price per crate of 2½ dozen size celery, 1966 marketing season.^a

^aSee Appendix A, Table 4 for additional detail.



in the selected equations, the predictive power of the selected equations during the 1967 Michigan Celery Promotion Cooperative's marketing season will be discussed.

Variables Included and Excluded in Selected Equations

The price of each size of fresh celery at shipping point is quoted separately. For this reason, prices were estimated for only the most important size of fresh celery. Crates of $2\frac{1}{2}$ dozen size celery were selected because of their ready acceptance by chainstores and because they make up the largest proportion (approximately 33 percent) of the Cooperative's sized, fresh celery crate sales.¹

Prices f.o.b. shipping point of fresh crate celery are generally quoted to the nearest \$.25, and the minimum price change per crate is \$.25. Both practices are apparently traditional customs in the celery trade. The Michigan Celery Promotion Cooperative frequently does not change its price per crate of $2\frac{1}{2}$ size celery during a week, seldom changes it more than \$.50 per crate, but has changed it as much as \$1.25 during a week.²

The time periods selected for analysis within each season were weeks. Since the price per crate of $2\frac{1}{2}$'s may vary during a week, the dependent variable is a simple unweighted average of the Cooperative's $2\frac{1}{2}$ size prices per crate each week. In estimating these prices, no attempt was made to restrict to the nearest \$.25 the estimates, dependent variable, or any of the independent celery price variables.

¹Computed from source number 11.

²See Appendix A, Table 8 for Michigan Celery Promotion Cooperative's f.o.b. price per crate of $2\frac{1}{2}$ dozen size celery each day of the 1963 through 1967 marketing seasons.

This permits an indication of trends or pressures on price relative to \$.25 increments and yields estimates representative of the averaging process utilized.

The relevant supply of the Cooperative's $2\frac{1}{2}$ size celery consistent with the selected dependent price variable consists of the number of Cooperative $2\frac{1}{2}$ size crates on inventory Saturday evening of week t (Q_{mt}) and the number of Cooperative $2\frac{1}{2}$ size crate receipts during week $t+1$ (Q_{mt+1}). Significance and sign of these two variables were tested, and they were then added together for a single Michigan Celery Promotion Cooperative supply variable, the selected Q_m . Use of Q_{mt} as a variable to represent a portion of the Cooperative's $2\frac{1}{2}$ crate supply did not yield statistically significant coefficients.¹ The coefficients obtained for this variable were negative, indicating that the Cooperative's price per crate of $2\frac{1}{2}$ size celery in the coming week is depressed by the inventory carryover from the present week. The reason for lack of statistical significance was most likely the small quantity involved, less than 4,000 crates per week and often less than 1,000 crates per week. The other quantity variable, Q_{mt+1} , making up the selected Cooperative supply variable Q_m also had negative coefficients as expected, but they were statistically significant. Data for this variable (Q_{mt+1}) were actual Michigan Celery Promotion Cooperative $2\frac{1}{2}$ crate receipts for week $t+1$. The selected single Cooperative supply variable, Q_m , yielded coefficients that were negative and statistically significant.

California celery shipped east by rail is available in all Michigan Celery Promotion Cooperative market areas four to seven days after

¹Statistically significant is taken throughout this chapter to mean at the 5 percent level unless noted otherwise.



shipment. The quantity of celery shipments from California was measured in terms of variable Q_{ct} --California carlot rail shipments in week t .¹ The regression coefficient for this variable was significant. However, the positive sign for this variable indicates that the Cooperative's price per crate of $2\frac{1}{2}$ size celery increases in the coming week as rail shipments of celery from California increase during the current week. A positive coefficient is not what was expected for this variable. Generally, without a shift in demand, an increase in quantity results in a lower price. The positive sign for this coefficient may be the result of multicollinearity between this variable and a demand shift variable such as Q_{svt} (carlot shipments of salad vegetables excluding celery for week t). The simple correlation between Q_{ct} and Q_{svt} was 0.43.

Carlot rail shipments, except to processors, of United States salad vegetables for week t (Q_{svt})² was tested as an independent variable to determine its relationship to the price per crate of Cooperative $2\frac{1}{2}$ size celery in the coming week. Negative coefficients for this variable were obtained but were not statistically significant, possibly because particular salad vegetables included may have been substitutes and others complements.

Carlot equivalents of combined rail, boat and truck unloads of celery in 41 cities during week t (U_{41t})¹ was tested as an independent variable. This was done to quantify the relationship between the celery supply available on the retail market in week t and the

¹Data for this variable compiled from source number 25.

²Salad vegetables included cabbage, carrots, cucumbers, lettuce, romaine, green onions, peppers, tomatoes, radishes, escarole, endive, and greens. Data for this variable were compiled from source number 21.



Cooperative's price per crate of $2\frac{1}{2}$ size celery in week $t+1$. Regression coefficients for this variable were not statistically significant, nor were they consistent in sign. The coefficients varied so little from zero that observations excluded from some of the equations and included in others may have been sufficient to produce sign changes in the coefficient. These observations that were excluded from some of the equations and included in others were due to missing data for variables other than $U41t$ that were included in some of the equations.

Celery quantity data for all individual production areas other than that in the Cooperative were not available on a week-to-week basis. This was especially true for New York celery, a major competitor with Michigan celery. For this reason f.o.b. prices per crate of $2\frac{1}{2}$ size celery from the various celery producing areas (which were available) were tested to determine the extent to which they "explained" Michigan Celery Promotion Cooperative f.o.b. price-per-crate variation of $2\frac{1}{2}$ size celery. For specific California shipping points, an average of f.o.b. prices in dollars per crate of $2\frac{1}{2}$ size celery during week t and separately for Wednesday, Thursday and Friday of week t were tested to determine which gave the better fit. The midpoint of Santa Maria, California f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t ($Pmft$)¹ gave the best fit of these alternatives for the first seven weeks of the Cooperative's marketing season. For this reason, this variable was picked for inclusion in the selected equation (Equation 1).² For the remaining weeks of the Cooperative's marketing season, the midpoint of

¹For data series see Appendix A, Table 6.

²See Pages 64 and 65 for Equation 1.



the Salinas, California f.o.b. price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t ($Psft$)¹ gave a slightly better fit than did Santa Maria prices in Equation 2.² Regression coefficients for both of these California price variables selected were less than one, highly significant³ and had positive signs. The coefficients for these variables indicate that as f.o.b. price per crate of $2\frac{1}{2}$ size celery from these two California areas changes, the Cooperative's $2\frac{1}{2}$ f.o.b. price per crate for the coming week changes in the same direction but by less than the amount of the California price change.

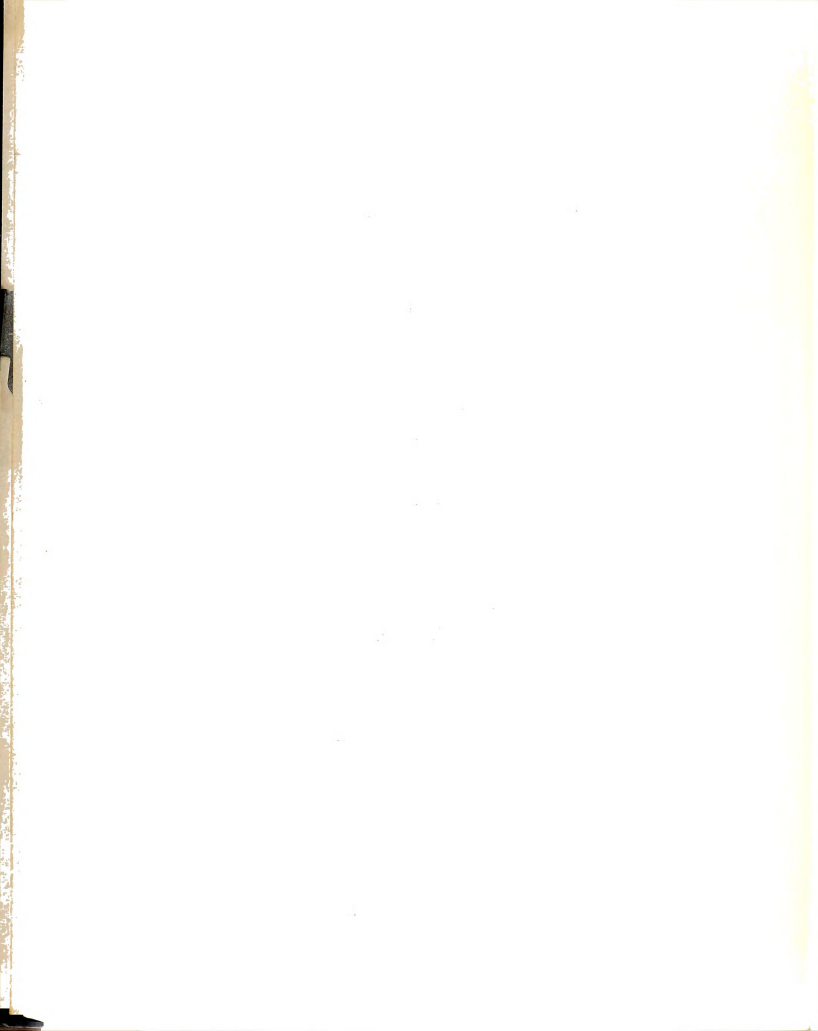
Historically, the Michigan Celery Promotion Cooperative Price Committee has used Salinas, California f.o.b. prices as a principal indicator of California f.o.b. celery prices throughout the Michigan season. Based upon carlot rail shipments of celery, starting one week prior to the Cooperative's marketing season, the volume of Santa Maria shipments was larger than Salinas shipments 1 week in 1963, 3 weeks in 1964, 5 weeks in 1965 and 2 weeks in 1966.⁴ This shift in volume of shipments between the two areas may in part contribute to the better fit obtained using Santa Maria prices the first seven weeks and Salinas prices the remainder of the Cooperative's marketing season. However, it is also possible that at the first of the Cooperative's marketing season, Salinas shippers looked to Santa Maria for price leadership while the Cooperative's Price Committee was looking to Salinas for this

¹For data series see Appendix A, Table 7.

²See pages 65 and 66 for Equation 2.

³Significant at less than 0.05 percent.

⁴For detail see Appendix A, Table 5.



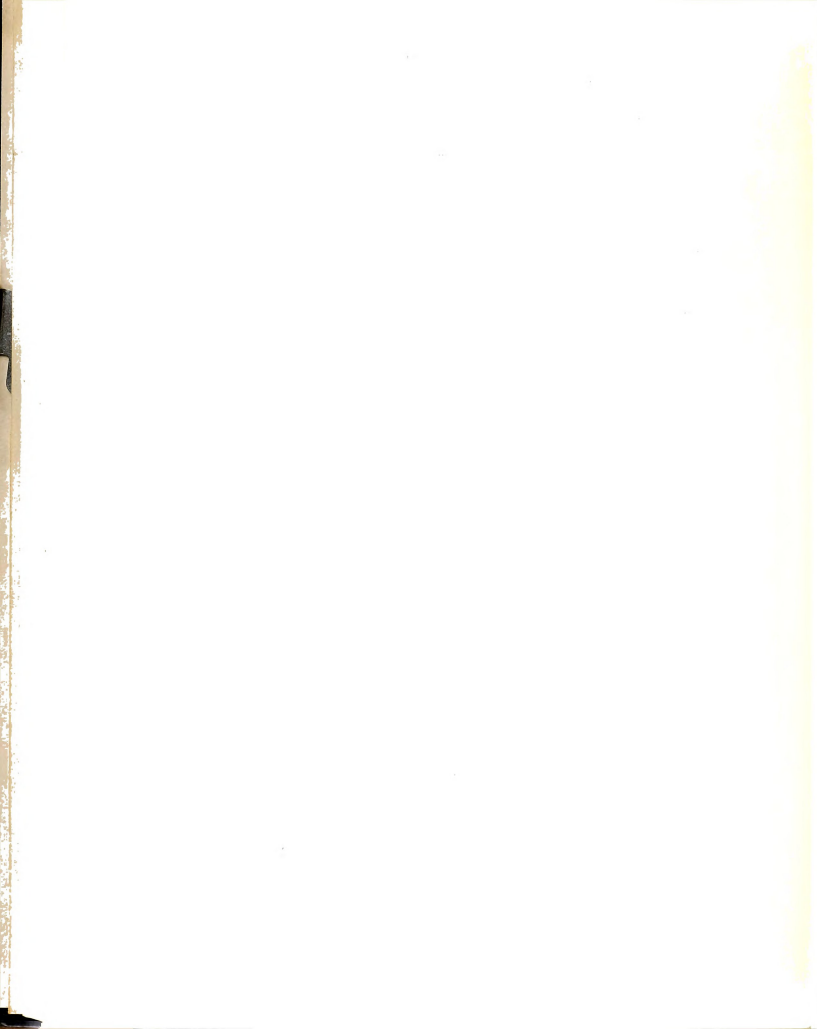
leadership. The end result was that the Price Committee's reactions to the reaction of Salinas to Santa Maria price changes brought Cooperative price changes more nearly in line with Santa Maria's.¹

New York celery prices were also tested as an independent variable in estimating the Cooperative's celery prices because data were not available on quantity of celery marketed each week by the two New York celery producing areas--Orange County and Western New York. Due to the proximity to Michigan of these two competing areas, only two price variables for each area were tested--the midpoint of the f.o.b. price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t and an average of the f.o.b. shipping point prices in dollars per crate of $2\frac{1}{2}$ size celery during week t . Friday prices for week t yielded more statistically significant results than did average prices for all of week t .

The midpoint of Orange County, New York f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t ($Poft$)² was selected as an independent variable and included in the estimating equation for the latter part of the season (Equation 2). This variable was selected over the midpoint of Western New York f.o.b. shipping point price range in dollars per crate of $2\frac{1}{2}$ size celery on Friday of week t because Western New York's marketing season often starts later than the eighth week of the Cooperative's marketing season. By using Orange County, New York price per crate as a variable, the influence of New York celery on Michigan celery prices is accounted for much earlier in each season than if Western New York

¹Pricing in this imperfect market may involve some game strategy.

²For data series see Appendix A, Table 7.



prices had been used.

The second part of the Cooperative's marketing season (eighth week on), a simple average of Cooperative f.o.b. shipping-point price in dollars per crate of $2\frac{1}{2}$ size celery during the seventh week of the Cooperative's marketing season ($Pm7$)¹ was selected as an independent variable. This variable had a positive coefficient and was highly significant.² It was included in the estimating equation for the latter part of the Cooperative's marketing season to provide an indication of the Cooperative's price level.

A number of other factors were tested to determine the extent to which they might "explain" the variation of Cooperative prices. None of these other factors tested were included in the selected equations and were not deemed sufficiently important to merit discussion in the text. They are discussed in Appendix C.

Predicting Michigan Cooperative Celery Prices

Testing Equations

The selected estimating equations presented on pages 64, 65, and 66 above are evaluated in this section for their ability to correctly predict Michigan Celery Promotion Cooperative administered prices and the direction of change or no change in these prices beyond the period of fit. This can be done since the regression coefficients were calculated using data for the 1963-1966 Cooperative marketing seasons, and data are available for the 1967 marketing season for testing the soundness of the relationships. These estimating equations were

¹For data series see Appendix A, Table 7.

²Statistically significant at 0.4 percent.



developed in anticipation of their ability to correctly predict the Cooperative's weekly average $2\frac{1}{2}$ size celery f.o.b. price per crate for weeks in a season beyond the period of fit. The success with which this can be done will be an indication of the usefulness of these equations to Michigan Celery Promotion Cooperative's Price Committee.

Actual and predicted Michigan Celery Promotion Cooperative average f.o.b. shipping prices per crate of $2\frac{1}{2}$ size celery by week of their 1967 marketing season are shown in Figure 11.¹ Predictions for weeks 3 and 4 of the marketing season were notably distant from the actual prices. For week 3 the predicted price was \$.63 below the actual price and for week 4 \$.95 below the actual price. A possible reason for this in the third week may have been a nationwide railroad strike that occurred on the Saturday prior to week 3 and lasted through Sunday and Monday of that week. There were no rail shipments of California celery Sunday and Monday of week 3.² Expectations of a railroad strike may have dampened Friday celery prices at Santa Maria, California, decreasing the magnitude of that variable (Pmft). Santa Maria average f.o.b. price on $2\frac{1}{2}$ size celery was down \$1.12 from its Friday level of week 2. In the event of a railroad strike, California celery prices could be expected, in the short run, to decline due to the increase in California celery supply that could not leave California by its usual method of transportation--railroad. Actual Cooperative price per crate could also be higher than the predicted price for the third week due to retailers making purchases to replace in the short

¹Appendix A, Table 4 provides additional price detail.

²See source number 9, 1967 for additional detail.



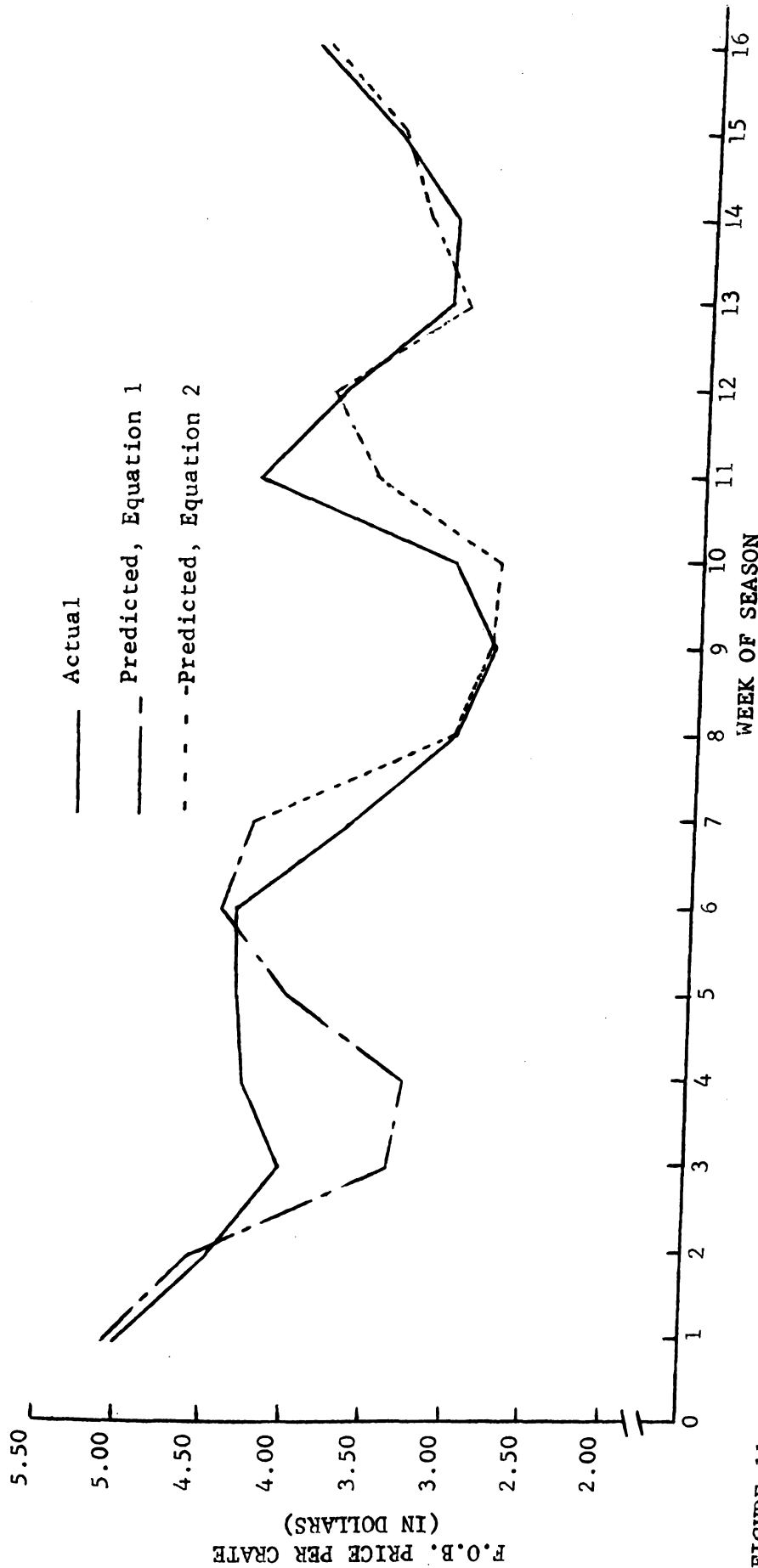


FIGURE 11.--Michigan Celery Promotion Cooperative actual and estimated average weekly f. o. b. shipping point price per crate of 2½ dozen size celery, 1967 marketing season.
^a See Appendix A, Table 4 for additional detail.



run the absent rail shipments of California celery. A possible reason for the discrepancy between the fourth week price prediction from the actual price may have been the disruption and closure of the Detroit terminal market for almost a week by the 1967 Detroit riot. The Cooperative's price increased the fourth week over its third week level, while predicted price decreased the fourth week relative to the predicted third-week price. Unavailability of the Detroit market as an outlet for celery meant a larger or expectation of a larger celery supply on other terminal markets. This should have resulted in a decrease in f.o.b. celery prices due to a larger supply for a reduced market area, and in fact the Santa Maria $2\frac{1}{2}$ size celery f.o.b. price per crate did decrease Friday of week 3 as noted above. The increase in the Cooperative's actual price could be accounted for by a demand from retail markets surrounding Detroit which normally purchase their supplies on the Detroit terminal market. During the riot these retailers may have purchased their supplies directly from Michigan Celery Promotion Cooperative shipping points.

During the Cooperative's 1967 marketing season, the predicted price using Equations 1 and 2 was within plus or minus \$.125 of the actual price 9 out of 16 weeks. Assuming that an estimated price within plus or minus \$.125 of the actual price indicates no price change, the estimating equations correctly predicted the direction of price change or no price change 11 out of 15 times during the 1967 season. Apart from the third and fourth weeks which have been discussed above, the equations did a good job of predicting the Cooperative's weekly average f.o.b. price per crate of $2\frac{1}{2}$ size celery during the 1967 marketing season.



In order to test these equations during the 1967 marketing season, it was necessary that the Michigan Celery Promotion Cooperative provide an estimate of its $2\frac{1}{2}$ crate receipts for each coming week, prior to that week. This estimate was necessary as a component (number of M. C. P. C. $2\frac{1}{2}$ dozen crates to be harvested for week $t+1$) of the Cooperative's supply variable Q_m . The other component of this variable was "the number of M. C. P. C. $2\frac{1}{2}$ dozen crates on inventory Saturday evening of week t ." Prior to this 1967 experience in estimating receipts, the Cooperative had not, as a matter of course, attempted to estimate its receipts for the coming week for a particular size of celery. Using acreage data, fieldman reports, and expectations relative to the need for cutting holidays, the Cooperative made the estimates, compared with actual receipts, in Table 11 below.

The regression coefficient for Q_m in Equation 1 is $-.0019$, which indicates that a 1,000 crate overestimate of $2\frac{1}{2}$ crate receipts for the coming week would have lowered the predicted price per crate by \$.019, and an underestimate would have increased it by \$.019 per crate. In Equation 2, the regression coefficient for Q_m is $-.0028$. A 1,000 crate overestimate of $2\frac{1}{2}$ receipts for the coming week during the latter part of the season would have lowered predicted price per crate by \$.028, and an underestimate would have increased it by \$.028 per crate. The coefficients do not provide a valid estimate of the true slope of the demand curve.

Predicted prices for 1967 were recomputed using the Cooperative's actual $2\frac{1}{2}$ crate receipts during week $t+1$ in variable Q_m instead of the Cooperative's estimate of what their receipts would be for the coming week. These recomputed prices were compared with actual prices

TABLE 11.--Michigan Celery Promotion Cooperative actual and estimated crate receipts of $2\frac{1}{2}$ dozen size celery, 1967.^a

Week of Season	Qmt+1 Actual Crates	$\hat{Q}mt+1$ Estimated Crates	Qmt+1 - $\hat{Q}mt+1$ Crates
1	2,374	2,670	- 296
2	11,326	9,000	+2,326
3	11,490	14,000	-2,510
4	12,986	14,000	-1,014
5	17,013	15,000	+2,013
6	21,763	21,000	+ 763
7	20,772	26,000	-5,228
8	20,810	22,000	-1,190
9	24,066	23,000	+1,066
10	16,162	20,000	-3,838
11	16,616	15,000	+1,621
12	16,457	13,500	+2,957
13	12,310	13,000	- 690
14	12,679	10,500	+2,179
15	7,088	10,000	-2,912
16	1,676	1,000	+ 676

^aActual crate receipts were compiled from source number 11. The estimate was submitted prior to each week of the season by the Cooperative's general manager.

and the original price predictions (Table 12). Using the Cooperative's actual $2\frac{1}{2}$ crate receipts resulted in "predicted" prices closer to actual prices for half the weeks. However, the largest absolute price change as a result of these computations was only \$.11. Therefore, it may be concluded that although the Cooperative was not able to estimate very accurately its receipts for the coming week, the discrepancy of these estimates from the actual receipts had little influence on the predicted prices.

Inclusion of 1967 Data

Upon completion of the 1967 marketing season, coefficients of the

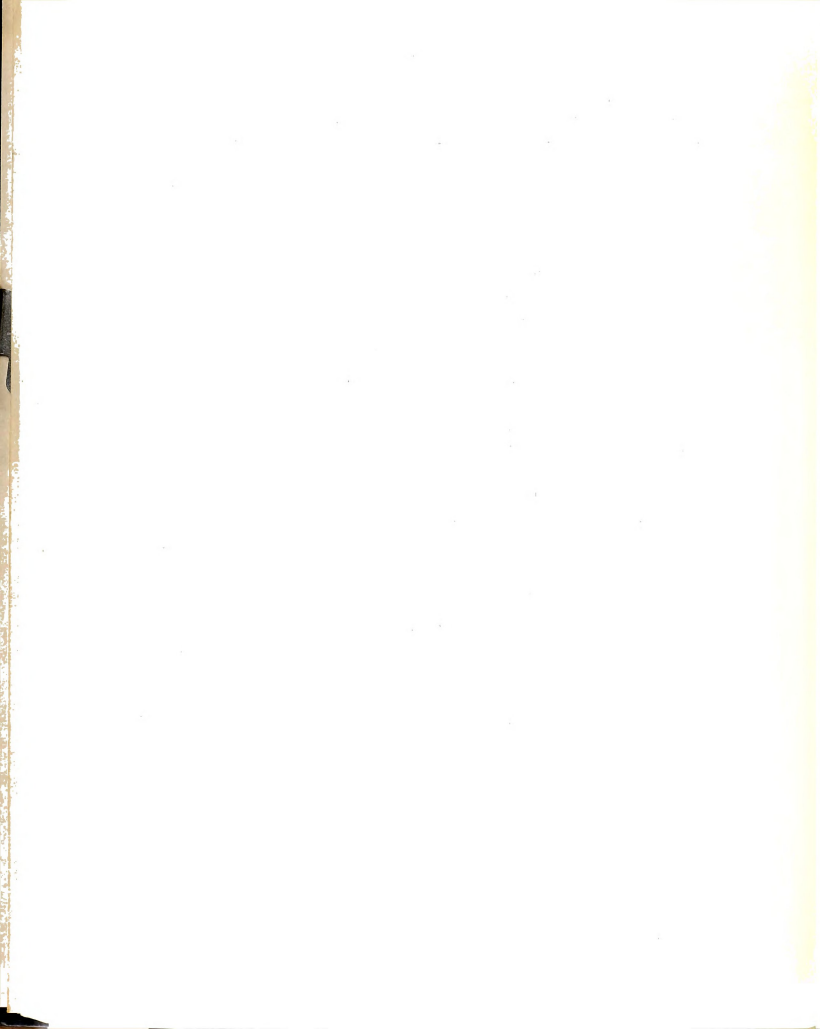


TABLE 12.--A Comparison of actual, predicted, and predicted using actual receipts rather than estimated receipts Michigan Celery Promotion Cooperative average f.o.b. price per crate of $2\frac{1}{2}$ size celery, 1967.^a

Week of Season	Actual P (\$)	Predicted P (\$)	Predicted Using Actual Receipts P (\$)
1	5.00	5.06	5.07
2	4.42	4.54	4.50
3	4.00	3.37	3.42
4	4.21	3.26	3.28
5	4.25	3.95	3.91
6	4.25	4.33	4.32
7	3.58	4.17	4.27
8	2.96	2.96	2.99
9	2.75	2.76	2.73
10	3.00	2.72	2.83
11	4.13	3.48	3.43
12	3.63	3.73	3.65
13	3.04	2.95	2.97
14	3.00	3.18	3.12
15	3.38	3.35	3.43
16	3.83	3.79	3.77

^aPredicted prices were calculated using Equation 1 for the first seven weeks of the Michigan marketing season and Equation 2 for the remaining weeks.

two selected price estimating equations were updated by including 1967 data. However, the observations for the third and fourth weeks of the Cooperative's 1967 marketing season were excluded because of the extremely remote possibility that a national railroad strike and Detroit riot would occur respectively in those weeks in another season. Definitions of the variables in these updated equations remain respectively the same as those for the variables in Equations 1 and 2 on pages 64, 65, and 66 above. These updated equations utilizing 1963

through 1967 data¹ are distinguished from Equations 1 and 2 (utilizing 1963 through 1966 data) by noting the equations using 1963 through 1967 data with an asterisk (*).

Equation 1*

$$P1*mt+1 = 91.0740 - 0.0027Qm + 0.0179Pmft \\ (26.9383)(0.0009) \quad (0.0506)$$

Numbers in parentheses under the coefficients are the respective standard errors. To convert price estimates and coefficients to a price-per-crate basis, they must be multiplied by 0.01.

$$R^2 = .94 \quad \text{Degrees of freedom} = 29 \quad \text{Standard error of estimate} = .24$$

Equation 2*.

$$P2*mt+1 = 89.3305 - 0.0028Qm + 0.2348Pm7 + 0.5486Psft + 0.1297Poft \\ (31.2448) \quad (0.0007) \quad (0.0665) \quad (0.1177) \quad (0.0527)$$

Numbers in parentheses under the coefficients are the respective standard errors. To convert price estimates and coefficients to a price-per-crate basis, they must be multiplied by 0.01.

$$R^2 = .80 \quad \text{Degrees of freedom} = 37 \quad \text{Standard error of estimate} = .26$$

The inclusion of 1967 data, except for the third and fourth weeks, in updating coefficients for the equation covering the Cooperative's marketing season's first seven weeks decreased its fit only slightly over that obtained using 1963-1966 data. The coefficient of multiple determination, R^2 , was decreased from .95 to .94 while the standard error of estimate was increased from .22 to .24 by including 1967 data. The regression coefficient for the variable Qm in the equation for the first seven weeks was increased in absolute value from 0.0019 to 0.0028, indicating an increased depressing effect of Cooperative supply

¹For data see Appendix A, Tables 4, 6 and 7.



on Cooperative prices in 1967. The regression coefficient for the remaining variable, Pmft, in the equation for the first seven weeks decreased approximately 5 percent. This indicates that the Cooperative price is more dependent on Cooperative supply conditions than prior to including the 1967 data.

The inclusion of 1967 data in updating coefficients for the equation covering the eighth week of the Cooperative's marketing season to its completion increased the fit over that obtained with 1963-1966 data. The coefficient of multiple determination, R^2 , was increased from .78 to .80, and the standard error of estimate was decreased from .27 to .26 by including the 1967 data in computing the regression coefficients. The regression coefficient for the variable Qm remained unchanged by inclusion of 1967 data. However, the regression coefficients for each of the remaining price variables increased--that for Pm7 by 1 percent, for Psft by 7 percent, and for Poft by 5 percent. The larger regression coefficients for these independent price variables indicates that the Cooperative's price was more dependent upon these variables in the 1963-1967 period than the 1963-1966 period.

Use of Equations by Michigan Celery Promotion Cooperative

If celery were a homogeneous product, then it should not make any difference where additional celery supply originated; the regression coefficients for each of the producing areas would be approximately the same. However, this is apparently not the case as the price coefficients for each of the areas are of different size. This may be due to other forces, such as buyer-seller relations and stability of supply.

The regression coefficients for the two California price

variables, P_{mft} in the equation for the first seven weeks and P_{sft} in the equation for the eighth week to the season's completion, are each very near 1. The magnitude of the regression coefficients for California prices relative to the other independent variables indicates their dominance in influencing the Cooperative's prices. The volume of California celery relative to Michigan celery contributes to California's dominance in influencing the Cooperative's prices.¹

Use of California and New York f.o.b. celery prices per crate from Friday of week t to predict the Cooperative's prices for week $t+1$ was based upon the transportation supply lag of celery from these areas into the Michigan market area and the assumption that celery supply fluctuates more than demand on a weekly basis. Due to the supply lag, these f.o.b. prices in other producing areas provide an advance market evaluation of celery demand and supply conditions in the coming week for the Michigan producers. This evaluation would, of course, include Cooperative supply. In this sense, these week t prices reflect a number of factors such as disposable income per capita that change only slightly from one week to another.

The Michigan Celery Promotion Cooperative could use Equation 1* and Equation 2* as guidelines in administratively setting their prices during the 1968 marketing season. Equation 1* would be very useful in arriving at the Cooperative's opening price for the season. This initial decision is often most difficult as the Cooperative's Price Committee would not have made pricing decisions since last season and may not have what they would refer to as a "feel for the market." The equations would provide a prediction of average price

¹See Chapter 2, pages 8 and 9 for volume difference during M. C. P. C. marketing season.



for each week of the season. The standard error of estimate for each of the equations of approximately \$.25 is an estimate of how well the regression lines fit the data. Approximately two-thirds of the differences between actual and estimated prices lie within plus or minus \$.25 of the regression lines. The low standard errors of estimate indicate that these equations can be useful to the Cooperative since the predicted prices will be weekly average prices, and if price is changed, it is changed a minimum of \$.25. Because the predicted prices will be an average for the week and the standard error of estimate is \$.25, the Cooperative could justify a starting price per crate each week \$.25 over the predicted price for the week and adjust it during the week if necessary. This approach would most nearly result in approximating the weekly predicted prices.

These equations are only guidelines as they do not consider "shock" factors such as the railroad strike and riot which occurred in 1967. If the Price Committee has information on any factor not included in the equations and the factor is believed to have an influence on the Cooperative's celery prices outside of the "normal" range of experience, then the price predictions should be weighted by the new evidence. These equations should be useful to the Cooperative as long as the market structure remains the same as during the 1963-1967 period. As long as the market structure does remain the same, it would be possible to update the regression coefficients for each equation at the end of each season. This would provide a broader historical base for the coefficients and improve their validity. If the market structure does change, then the analysis should be reconsidered in view of the changes that occurred.

The Cooperative's supply variable Q_m is a measure of the quantity of Cooperative celery which will be on the retail market the coming week. One component of this variable "M. C. P. C. $2\frac{1}{2}$ crate inventory on Saturday of this week" is a measure of how far the Cooperative's average f.o.b. $2\frac{1}{2}$ price per crate that week deviated from the market equilibrium price. By altering their receipts for the coming week through cutting holidays, more rapid harvesting, or diversion to processing markets, it is possible, utilizing Equations 1* and 2*, for the Price Committee to estimate the resulting effects on price. Based upon the Cooperative's cost information and processing market prices, they may also evaluate their estimated net return for the coming week that would result from various supply control activities.



CHAPTER V

ALTERNATIVE MARKETING ORGANIZATIONS AND PRACTICES FOR THE MICHIGAN CELERY INDUSTRY

Since 1957 the Michigan celery industry has made rather rapid advances in adjusting its marketing organizations and marketing practices to meet many of its problems and the demands of the market. The Michigan Celery Promotion Cooperative has come to the forefront in this regard. However, as is the tendency for many types of organizations, after reaching solutions to initial problems facing the organization which are satisfactory to most of the membership, the drive and motivation for the group fades. The Cooperative's development has brought it to this point where it may continue to be an organizational leader in Michigan and in the market for its products, or by not altering its pattern, may find its market position declining in importance in this country's rapidly changing marketing system. Alternative marketing organizations and practices are presented below which, if adopted, might advance the position of the Michigan celery industry and the Michigan Celery Promotion Cooperative in the market place and thereby provide a renewed motivation for the organization.

Marketing organizations and marketing practices are dependent upon each other. That is, particular marketing organizations may limit and even define possible marketing practices while marketing practices themselves may determine or alter marketing organizations. The first part of this chapter is devoted to consideration of alternative marketing organizations for Michigan's celery industry. These alternatives are defined by the producer groups that might be represented and



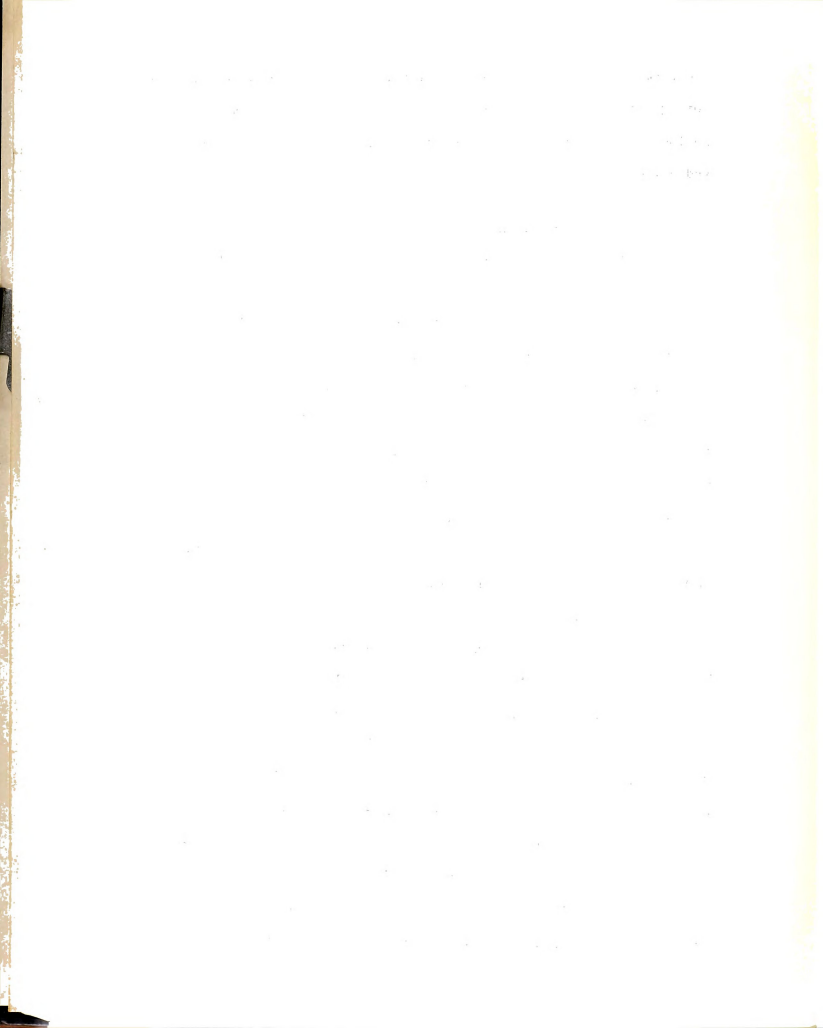
the form of group action uniting the producers. Alternative marketing practices are then presented along with their economic rationale. Relationships between alternative marketing practices and organizations are also considered.

Alternative Marketing Organizations

The approach taken in this section is to consider possible alternative marketing organizations for the Michigan celery industry starting with its present status as described in Chapter 3 and within the scope of existing federal and state market rules. The various organizational alternatives considered are not all exclusive of each other, and these instances will be noted. Although a number of these alternative marketing organizations could have interests or activities other than marketing of their products--social activities, for example--these aspects are not developed.

The term "alternative marketing organizations" has been used above as if those involved might obtain whatever form of organization they choose simply by declaration. These alternative marketing organizations could not be achieved that easily. As noted by DeLoach, "There is a good deal of 'sunk' capital in market organizations, in terms of both physical facilities and personnel, adapted to specific types of business and operational methods." (12:1526) To change from one form of organization to another is not without problems. In Chapter 6 industry attitudes toward a number of alternatives suggested here are presented indicating whether the suggested alternative would be facilitated or inhibited by these attitudes.

The organizational alternatives presented all are means whereby celery growers might attain a greater degree of market power through



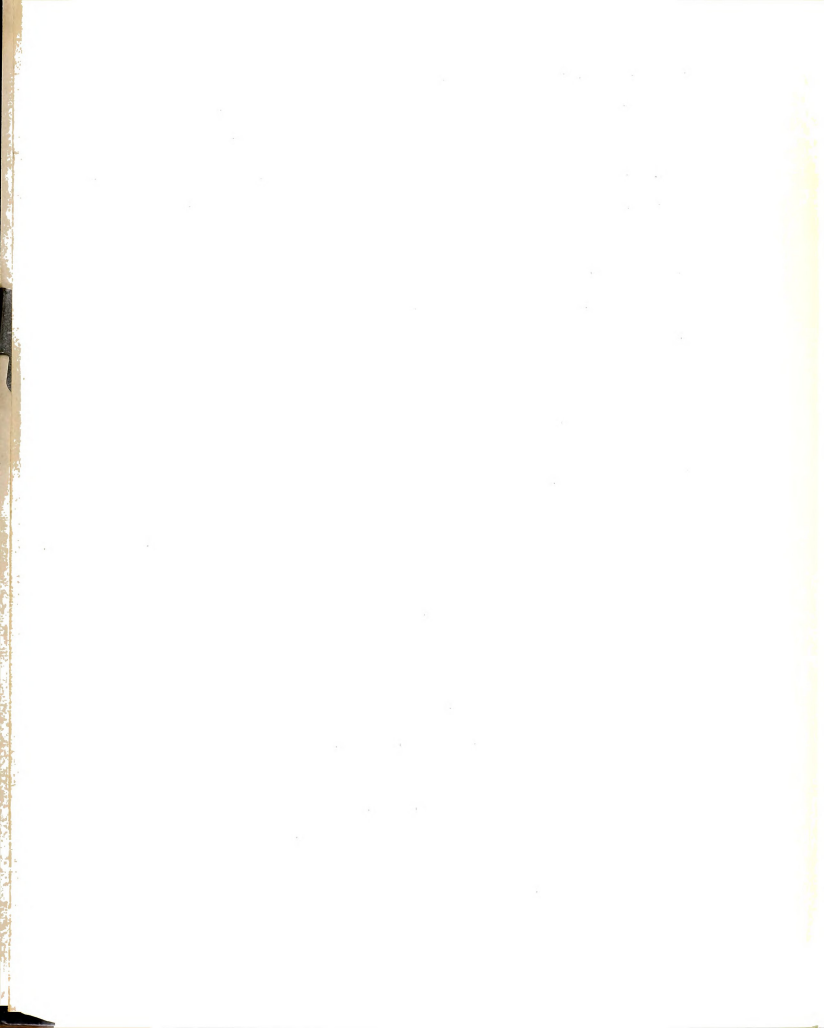
group action. Market power is defined as being in a position to follow price, product, and marketing policies different than those that would prevail in a purely competitive market. (27:1229) However, there are obstacles which stand in the way of building and maintaining market power. These obstacles include difficulties in disciplining members, or in getting members to act as a united and cohesive group, along with preventing entry by new producers or encroachment by substitute products. What market power could be attained would depend upon the organizational alternative or alternatives and marketing practices adopted.

Merge Cooperatively with Other Market Areas

Florida and Michigan. As noted in Chapter 2, both Florida and Michigan have similar cooperative celery marketing organizations.¹ The Florida Fresh Produce Exchange and the Michigan Celery Promotion Cooperative are both cooperative celery marketing organizations formed to market celery produced in their respective states. They are both master sales organizations operating under contractual arrangements with growers and shippers.² The cooperatives authorize celery shippers to be sales agents for them. Contracts between the cooperatives and their authorized sales agents (shippers) require the shippers to agree to abide by all rules and regulations for marketing celery as expressed by the respective cooperative organizations. Both cooperatives administratively determine their f.o.b. celery prices in advance of sales. The process by which each of these organizations determines its

¹See pages 18 and 19 for additional detail.

²Copies of Michigan Celery Promotion Cooperative's contractual forms which it signs with growers and shippers are shown in Appendix B.

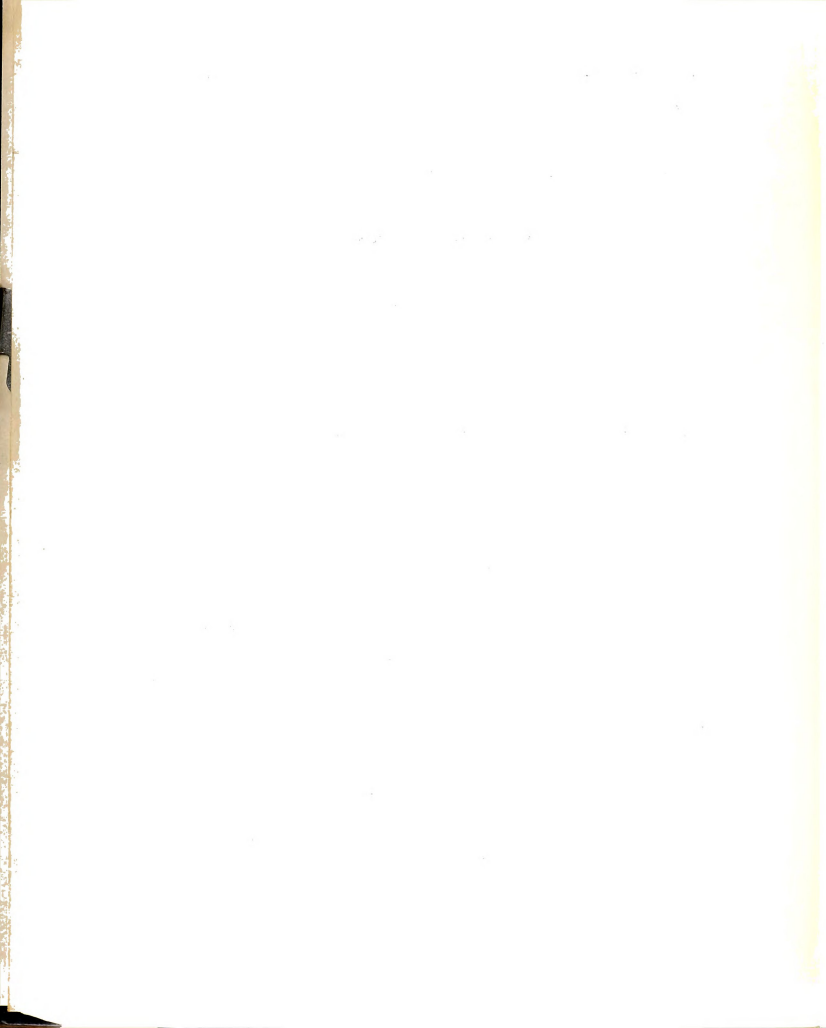


administered product prices is similar in that both use a committee system to assist in assessing market information assembled by the general manager.

Two two celery marketing cooperatives have other similarities in their activities. They regulate the grades and packs of members' celery, control the use of containers, promote and merchandise celery, and develop and distribute market information. (7:54) The Michigan Celery Promotion Cooperative has developed its market segmentation beyond that practiced by the Florida cooperative. The Michigan cooperative recognizes, caters to, and prices its products to a fresh celery market and a processing celery market. The Florida celery group recognizes a processing celery market, but for the most part does not cater to it and prices all its celery at fresh market prices. Celery prices are quoted f.o.b. by both marketing groups. However, Florida celery prices are quoted f.o.b. plus a precooling and handling charge while the Michigan cooperative includes this precooling and handling charge in its f.o.b. quote.

In addition to the close similarity in the marketing activities of these two groups, they also currently have limited ties as some shippers work nine months of the year in Florida celery and the remaining three months in Michigan. This is also true for at least one chainstore field buyer.

A merger of the Florida and Michigan celery marketing cooperatives could be mutually beneficial to both organizations. The marketing seasons for the two areas are such that they would permit a single organization to market celery the year around. Principal advantages attainable from this arrangement would be those derived from a

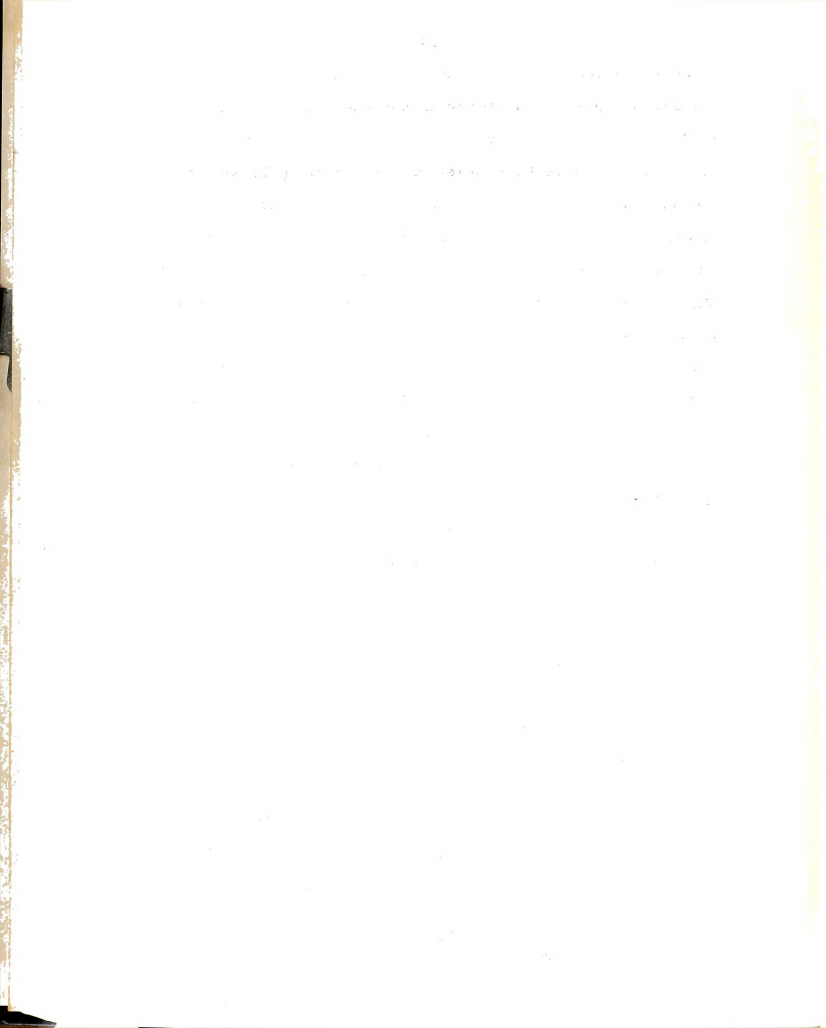


year-around product offering through a single organization. Principal disadvantages would be the geographic separateness and the difference in quantity produced by the two areas. The merged cooperative would be in a position to regulate its celery supply, quality, and volume moving into various outlets. Both the Florida and Michigan cooperatives have been pricing their products prior to offering them for sale and could continue to do so if they merged. Also, the merged organization could forward contract with processors which both firms now independently supply, and merchandising to retail stores could be facilitated by being able to offer celery the year around. Both organizations could benefit from additional management assistance if the two groups were to merge into a single organization.

The price predicting equations developed in Chapter 4 would not apply if these two organizations were to merge their marketing activities, as such an action would substantially alter the celery market structure. Viewed on an annual basis, the proposed group's competition would be California celery, and the structure of the national celery market would accordingly resemble a duopoly. The merged Florida-Michigan cooperative organization could have the advantage of being able to exert substantially more market control over its members' celery than it would be possible for California celery producers to exercise given their present degree of organization.¹

Merging the celery marketing activities of the Florida and Michigan cooperatives could be accomplished by merging both organizations into a single new organization, forming a super cooperative and

¹See Chapter 2, pages 19 and 20 for a description of California celery market organization.



allowing the existing organizations to operate as locals, or merging only the celery marketing aspects through contractual arrangements. This merger could also be accomplished in conjunction with a federal marketing order which is discussed later in this chapter.

Florida celery is produced on about 11,000 acres and Michigan celery on 2,000 acres. Markets developed on the basis of the volume Florida could supply could not be adequately serviced from Michigan's production. For this reason, a Florida-Michigan celery marketing group would need to encourage summer season celery producers to join their organization in order to increase their supply of summer celery. This could include celery growers in New York, Ohio and others in that region of the United States.

Michigan and Others. Apart from the Florida group, there are no other large celery producer cooperative marketing organizations for the Michigan Celery Promotion Cooperative to affiliate or merge with. If it is not possible to merge celery marketing activities with Florida, then in the interest of increasing market power and coordinating the marketing activities of summer season celery producers, the Michigan celery cooperative's membership could be enlarged by seeking members in other states such as New York and Ohio. Apart from California celery competition, Michigan's biggest competitor is New York celery. New York celery producers have had quality problems very similar to those experienced in Michigan prior to the Cooperative's quality improvement efforts. The formation of a small producer cooperative marketing group in New York in 1967 provides an introduction through which marketing activities such as prices, market areas, quality and promotion may be coordinated.



Although there could be difficulties in coordinating cooperative marketing efforts between widely separated production areas, there would be definite advantages for all involved. The Cooperative would gain further control over the supply of summer season celery and could provide all members two market outlets (fresh and processing), reduced risk through improved market information, an enlarged price pool, and quality improvement assistance.

In addition to New York celery growers, those in New Jersey, Ohio and Wisconsin might also be encouraged to join the Michigan cooperative. Producers in these smaller production areas might appreciate the opportunity to broaden their outlets and reduce their risk by affiliating with a larger marketing organization. Marketing of this celery could then be coordinated by one organization.

A Multi-Vegetable Marketing Organization

Michigan shippers for the most part assemble mixed loads and market them independently of producer marketing organizations. Those who have signed a contract with the Michigan Celery Promotion Cooperative may market Cooperative celery in mixed loads, but it is their arrangement and not the Cooperative's. The availability of mixed loads is an enhancement to marketing Michigan celery. Being able to purchase several types of produce on a single call and having it delivered in mixed loads is of interest to many buyers.¹

Expansion of the Michigan Celery Promotion Cooperative to include producers of commodities frequently shipped in mixed loads with celery would permit the organization to market a more complete product line,

¹See Pricing section in Chapter 6 for additional detail.



thereby meeting market needs and permitting a greater degree of freedom in pricing. Approximately one-half of the Cooperative's members produce other commodities frequently shipped in mixed loads with celery, and as the Cooperative begins to centrally pack its celery, fixed costs per unit associated with central packing could be lowered by utilizing these facilities to prepare and store produce in addition to celery.¹ Onions, carrots and potatoes could all lengthen the season during which central packing facilities might be used.

A multi-vegetable marketing organization could also increase the efficiency of salesmen, advertising and promotion. Salesmen working for a multi-vegetable marketing organization could devote their efforts to selling and would not have to spend time securing supplies. Funds for advertising and promotion could be drawn from a larger base and used to promote a more complete line, rather than individual products. The Eastern Michigan Vegetable Association of Imlay City, Michigan which markets celery and other crops produced on the eastern side of the state operates in this fashion and could possibly be included in expansion activity. Vegetable producers in surrounding states should also be included in such an expansion activity to increase the firm's control over similar product supplies destined for the same markets as those of the expanding organization.

The possibilities of a merged Florida-Michigan celery marketing organization expanding into a multi-vegetable marketing organization also merit consideration. Ability to offer mixed vegetables the year

¹ The Cooperative initiated central packing of some of its celery in 1967 as noted in Chapter 3, page 39.



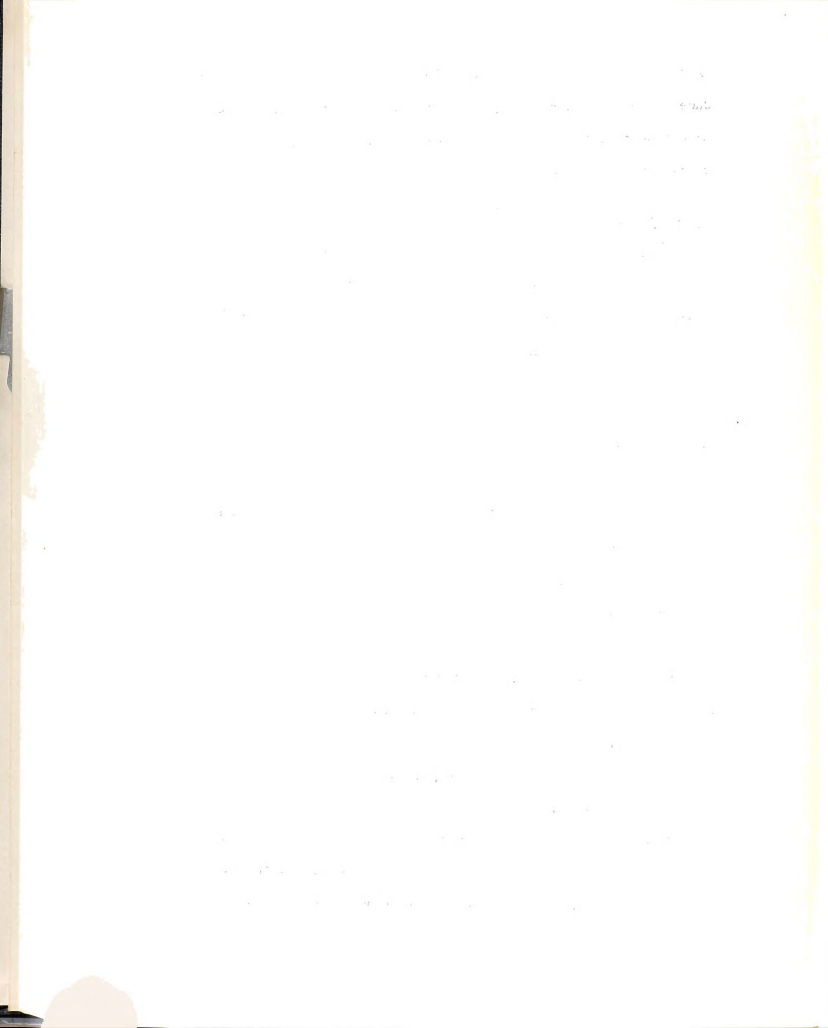
around through a single organization could differentiate the producer group in the market place. The possibilities for increasing marketing efficiency mentioned above could be even greater for a year-around organization.

Marketing Orders

Since the 1965 enactment of enabling legislation permitting agricultural commodity marketing orders in Michigan, Michigan celery producers have had the option of implementing a state and/or a federal marketing order. A marketing order would permit celery producers to collectively regulate their own celery marketing activities except for pricing, which may not be regulated under a vegetable marketing order. A state marketing order for Michigan celery would be binding only on those producing and handling celery in the state, whereas a federal celery marketing order could be established for any celery producing state, region, or group of states or regions having celery moving in or affecting interstate or foreign commerce. (44:1)

Marketing orders are implemented through a hearing and voting procedure and once voted in, an order is binding on the entire group for which it has been written. Orders may also be removed by a prescribed voting procedure. A celery marketing order would enable celery producers and handlers to collectively establish and maintain orderly market conditions for celery.

Marketing orders are not presented here as a market organization technique to reinforce the Michigan Celery Promotion Cooperative or other existing celery marketing organizations. They are suggested as a possible adjunct to better coordinate the marketing programs for



these organizations. A marketing order would help alleviate "free riders,"¹ because all producers and handlers for whom the order is written are bound by its provisions. Federal and state marketing order alternatives are presented below.

Federal Marketing Order. A federal marketing order cannot be used to regulate producers of an agricultural commodity directly, but operation of an order can affect them considerably. Federal orders achieve their objectives by the regulation of handlers; and in the celery industry, these would be the shippers.² Under present regulations, only fresh celery could be regulated by a federal marketing order, (3:2) and the market for processing celery is an important one for Michigan producers. This limits the possible effectiveness of a federal order for Michigan celery producers.

There are only a few states that can be classified as major celery producers--California, Florida, Michigan and New York head this list. For this reason, establishment of a nationwide celery marketing order could be suggested but would be considerably more difficult to achieve than establishing an order for a more limited area, simply because of the educational program that would be necessary to reach the number of producers and shippers involved. Apart from a nationwide marketing order, two other possibilities for a federal marketing order for celery have potential for Michigan celery producers. The first of these would be an order including those states harvesting celery only during the Michigan harvest season. This area includes

¹A "free rider" is an individual who shares many benefits achieved by a group without sharing the costs incurred by that group.

²See Appendix D for details of how federal marketing orders are instituted and administered and for order provisions.

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Michigan, New York, New Jersey, Ohio and a few other north central and eastern seaboard states having limited celery production. Celery producers and handlers in these states have similar marketing problems and interests due to their summer or early fall harvest seasons and market locations. The second federal marketing order alternative having potential for Michigan celery growers would be an order covering the states mentioned above and Florida, or possibly just Michigan and Florida. This second alternative is suggested because it would bring together celery production areas, none having year-around marketing seasons, that cater to the same market, and they would then have the potential of marketing on a year-around basis.

Celery producers and shippers in Florida and Michigan have demonstrated, through cooperative celery marketing organizations in both states and state and federal celery marketing orders in Florida, a willingness to seek solutions to their marketing problems through group action. A federal marketing order for Florida and Michigan celery could be a useful adjunct to a Florida-Michigan cooperative engaged in marketing celery. A Florida-Michigan celery marketing cooperative and a federal marketing order for celery in these two states would operate interdependently with the same mutual objective--service to the Florida-Michigan celery industry.¹ All Florida and Michigan celery growers would be under the jurisdiction of the federal order, and nearly all of these growers would be affiliated with the voluntary cooperative. The option would then exist for the Florida-Michigan celery industry either to use the cooperative or the order

¹They would be interdependent because both the Florida and Michigan cooperative membership represents the major celery producing interests in each area. See Chapter 2 for additional detail.



to meet most marketing problems. The one actually used would depend upon the circumstances involved and the program which could best expedite the matter.

State Marketing Order. The Michigan Celery Promotion Cooperative is the major producer marketing organization in the Michigan celery industry. Its effectiveness could be enhanced by an expansion of its membership to include all Michigan celery growers. The usual techniques for expanding membership have previously been employed by the organization but have not brought all Michigan celery growers into the Cooperative. Because of benefits available to "free riders," this has been difficult to achieve. What is needed are means of substantially increasing membership benefits relative to their costs over any benefits of nonmembership. Alternatively, the costs of nonmembership might be raised above possible benefits that might be derived from it. The means for pursuing either of these approaches lies with alternative market organizations and marketing practices and in changing the market rules.¹

Florida celery producers have a state marketing order which they may use to assist them with their marketing problems. Michigan celery producers also have the option of instituting a state marketing order to assist them in forming marketing rules within the state marketing order framework, collective advertising, and financing market development. Major provisions of Michigan's enabling legislation provide an opportunity for quality control, market research, advertising and promotion, quantity control, and uniform packaging.

¹The last alternative is not considered in this text.

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All or any of these provisions may be included in a state marketing order.

A state marketing order could increase coordination among Michigan celery producers and shippers in marketing the celery crop. It would alleviate, but not solve, the Michigan "free rider" problem for the Michigan Celery Promotion Cooperative, because pricing activities could not be conducted under the auspices of an order. However, pricing activities could be continued by the Cooperative and possibly enhanced by quality, supply control, and advertising activities conducted through an order. It is also possible that a state marketing order for celery could facilitate a merger of the Michigan Celery Promotion Cooperative and the Florida celery cooperative. It would not be as useful as a federal marketing order over both areas, but it could be of assistance as both states would then have state marketing orders to assist them in coordinating marketing activity within their own states. Possible state marketing order provisions will be discussed in the following part of the chapter.

Alternative Marketing Practices

Alternative marketing practices are presented with reference to the Michigan celery industry and more specifically, the Michigan Celery Promotion Cooperative. These practices, in conjunction with the organizational alternatives presented above, are means of achieving and utilizing market power. They could also result in increased coordination of marketing activities. However, a position of market power could be abused and if this power is abused, "...there is the possibility that society will not look with favor on a private group which would unduly



enrich itself at the expense of the public. The fact should be kept in mind that if there should be opportunities for producer groups to gain significantly from society through collectively imposed controls, society may prefer to see government administer the controls than the private groups themselves." (15:90)

Possible relationships between alternative marketing practices presented in this section and the alternative marketing organizations presented above are discussed in analyzing the practices. For the most part these alternative marketing practices would not be exclusive of each other and could be coordinated into a marketing program. However, for ease of presentation, they are raised below as separate practices, and in analyzing them their interrelationships with other practices are considered.

Pricing

A long standing practice among celery shippers when quoting f.o.b. fresh celery crate prices is to quote them to the nearest quarter of a dollar. The Michigan Celery Promotion Cooperative, when it began pricing its products prior to offering them for sale, continued this practice. Quarter dollar pricing has little economic justification as buyers are interested in a delivered price, and celery supply and demand situations do not always justify \$.25, \$.50 or \$.75 price changes. By changing to quoting prices using a full coinage range, the Michigan Celery Promotion Cooperative could permit a more complete reflection of celery demand and supply conditions through their prices. This full coinage pricing could be advantageous in meeting the competition's delivered prices. Whether the Michigan Celery Promotion Cooperative could make this change as a relatively small segment of the United



States celery industry depends upon the strength of the institutional rigidities surrounding the current pricing system.

The Cooperative sells its fresh celery on a uniform f.o.b. basis. Its market extends only as far as its f.o.b. price plus transportation does not exceed the f.o.b. plus transportation of some other firm selling at that point. This limits the Cooperative's market area during New York's heavy celery marketing season as the Cooperative cannot compete on a price basis on the eastern seaboard during that period. There exists a degree of locational monopoly among celery producers due to the f.o.b. pricing practice.

Alternative bases for sale that would permit the Cooperative to extend its market include freight absorption and/or zone pricing. Freight absorption would involve reducing f.o.b. prices to outlying customers by the difference in transportation cost to that customer from a competing seller. The Cooperative would absorb the difference in freight costs and would be able to seek business in more distant markets by accepting a lower return than on nearby sales. Zone pricing would involve dividing the celery market into zones and quoting a single delivered price for each zone such that the celery could not be traded between zones. This would most certainly involve the full coinage range in pricing. A zone pricing pattern could be constructed to be competitive with rivals. Either of these pricing plans or a combination of them would be difficult to institute due to the Cooperative's short price pool periods and possible revenue loss for individual members whose crop moved at lower prices. If either of these pricing programs was initiated, the Cooperative would experience nearby buyer reluctance to make purchases at f.o.b. prices



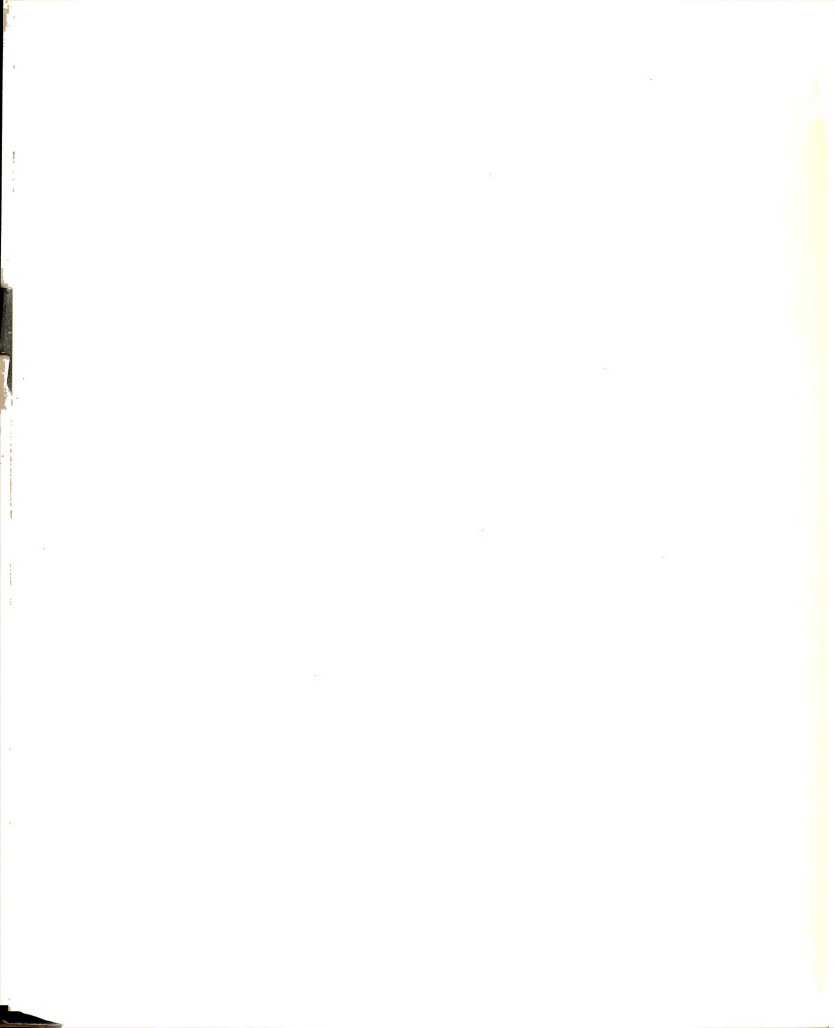
higher than those for more distant buyers. These price spreads would be limited by transportation costs among the areas which would necessitate use of the full coinage range in pricing. The Cooperative currently does not control sufficient volume to be certain that enough buyers would purchase from it to permit it to market all of its supply if it adopted either of these alternatives.

Volume discounts including cumulative volume discounts could be used as pricing practices by the Cooperative. These volume discounts could improve the Cooperative's competitive position among its larger and repetitive purchasers. Volume and cumulative discounts would be justified on the basis of selling cost savings and assurance of stable volume. Due to volume of celery moving in mixed loads, the cumulative volume discount might be the most useful of the two types of discounts. Cumulative volume discounts could also be of assistance in maintaining customers at the last part of the Cooperative's marketing season. Another important cost-justified discount could be granted to customers shifted to an off-peak work load (and correspondingly sales) period, either weekly or seasonally.

Volume and cumulative discounts would both be difficult to institute with the present selling arrangement. They could be initiated with greater ease if the Cooperative sold its own celery.

The Michigan Celery Promotion Cooperative sells celery to two broad market segments--fresh and processing. With each of these two markets, they have been able to further segment buyers through product differentiation. In the fresh market this is done by offering celery hearts and prepackaging.¹ Processing celery is offered in

¹The use of prepackaging for larger sizes has been limited.



bulk, crate or stemmed form. If these different market segments can be kept separated, an opportunity exists for market diversion and, correspondingly, price discrimination.

"Price discrimination refers strictly to the practice by a seller of simultaneously charging different prices to different buyers for the same good.... The concept of price discrimination may be reasonably extended to include, however, a seller's practice of charging different prices to different buyers for different varieties of the same good if the price differences are not the same as or proportional to the differences in the costs of producing the several varieties of the good.... Further, when two different goods are yielded from the same basic production process, with a considerable share of their costs identical but with certain separate added costs for each, their sale at a difference in price which is not proportional to their difference in cost may also be designated as price discrimination." (5:400)

Prices for fresh market celery are generally greater than for processing celery, and the difference generally is based on quality and harvesting cost differences. Stemmed celery does not necessarily follow this price pattern as additional utility is added to it through stemming. The price discrimination principle is to allocate the supplies in such a way that additional supplies in each market add equal amounts to the total net revenues. This is based upon the assumption of different price elasticities of demand among the market segments. Quantities of Cooperative celery moving into the market segments may be controlled by the Cooperative and/or a marketing order. The Cooperative currently does not have sufficient monopoly



control to consistently enhance its fresh market prices by limiting the quantity moving into that market. The fresh market has the more inelastic demand. There are also limits to the current demand for processing celery--principally, those firms using celery in their products. In the aggregate, the demand for processing is almost totally inelastic. Because of this, there is a limit to the additional quantity of processing celery that could be marketed at a reduced price. It should also be noted that there are no good substitutes for celery in its processing uses.¹ However, opportunities do exist for price discrimination in the fresh and processing markets based upon product differentiation. Quality and prepackaging as differentiation techniques could be used in the fresh market and bulk and stemmed celery in the processing market. The Cooperative must take account of the valuation placed on its product-service "package" as well as the valuations of rival products by the market segments it is most anxious to cultivate in effectively differentiating its products. The effects on price and quantity of celery marketed as related to merchandising, advertising and promotion activities are discussed later in this chapter under Market Expansion.

In administratively determining prices through a committee as the Michigan Celery Promotion Cooperative does, both a pricing policy and pricing strategy would reduce decision making time and improve consistency, when needed, in making these decisions. It is possible and useful to make a distinction between policy and strategy. Policy is formulated to deal with anticipated and foreseeable situations of

¹Determined in interviews with celery processors.

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of a recurrent type. Special situations that basic policy is not designed to meet ordinarily require an adjustment in price--and the formulation of a strategy for guidance in setting the price during the time that the special situation endures. There generally are several strategies which would be compatible with a firm's basic commitments, resources, and specific pricing policies. The price predicting equations developed in Chapter 4 will provide some guidance to the Cooperative's Price Committee in formulating pricing policy and strategy.

Coordination and Control

Three areas in which the Michigan Celery Promotion Cooperative could increase coordination and control over celery marketing are sales, celery supply, and quality. Coordination and control, from the Cooperative's point of view, include not only these areas but an entire marketing program. No attempt will be made here in presenting possible alternative practices to develop an optimum marketing program. In Chapter 7, however, particular marketing practices and organization are recommended to the Cooperative. Coordination and control are used here to refer to the influence the Cooperative exercises over its members' celery in marketing that celery.

Shippers. The Michigan Celery Promotion Cooperative could achieve increased coordination and control over its celery marketing by performing the shippers' function. As the Cooperative begins to centrally pack its products, this alternative has additional appeal. A number of functions currently performed by shippers will be performed at the Cooperative's central packing operations, such as hydrocooling, storage and handling. The next logical step to maintain control over

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Shippers currently are in a position to supply mixed loads of produce to buyers, which is an advantage in selling celery. To lower fixed costs per unit associated with central packing, the Cooperative could also handle mixed vegetables. By performing the shipping function, the group would increase their control over the marketing of their products. The possibility of marketing mixed vegetables was discussed above as an alternative marketing organization.

Possibilities for bringing the shipping function more directly under grower control include the following: Cooperative ownership of a shipping organization(s)--either of an existing organization(s) or forming a new organization(s), and the Cooperative hiring salesmen to sell directly for the organization. Possible salesmen include present shippers who have existing market contacts. Market contacts and the ability to ship mixed loads are two principal advantages of the Cooperative's present celery shipping arrangement. These could be developed within a cooperative marketing organization, particularly as it moves to central packing.

The Cooperative has little influence, apart from suggestion, in directing to whom its shippers sell and with what aggressiveness. Although the Cooperative itself contracts a limited quantity of its celery for delivery to processors, if it hired its salesmen, it could more easily expand its forward contracting with processors and explore similar possibilities with fresh market buyers.¹ It would then be possible for a single organization to sell the Cooperative's celery volume and possibly reduce selling costs as a result.

¹Contracting in the fresh market is discussed below under Market Expansion.

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Marketing celery the year around would be more easily controlled and coordinated through a marketing organization's own salesmen. Year-around celery marketing was mentioned above as an organizational alternative, and such an effort would be aided by an internal sales group. All of the major Florida celery shipping organizations are owned by celery growers. This is not true of major Michigan celery shippers affiliated with the Michigan Celery Promotion Cooperative and, therefore, the change could be more difficult for the Michigan as compared to the Florida organization.

Supply. Controlling and coordinating the supply of Michigan celery available and flowing to market may be achieved by existing marketing organizations, a celery marketing order, or a combination of both. A controlled flow of celery to market would be beneficial to the Cooperative's efforts to price its products during the season. In addition, central packing operations could be performed most efficiently with a uniform and continuous product flow. Forward contracting also requires assurance that adequate supplies will be available at designated times to meet commitments.

A celery marketing cooperative (the Michigan Celery Promotion Cooperative or a merged organization) could increase its supply control by contracting with its producers for celery requirements. These contracts might include acreage or production stipulations for delivery or harvest at a specified period during the season. This would improve scheduling central packing operations and smooth out volume moving to a central packing plant. It would also assist the firm in meeting its supply contract commitments and in pricing its products through control of time and volume of production. Celery producers

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belonging to the Michigan Celery Promotion Cooperative now produce and harvest their crop at their own discretion with the exception of cutting holidays¹ called by the Cooperative. The limited storage life of fresh celery makes it imperative that some form of supply control be utilized if orderly marketing is to be achieved.

Supply control might also be achieved by producers under a federal marketing order, but only the supply of fresh market celery could be regulated under a federal marketing order. This limits the usefulness of a federal order for Michigan producers. However, a Michigan state marketing order could regulate quantities produced and placed in all marketing channels if such a provision were included and the order were passed. The effectiveness of the Cooperative's pricing efforts would be enhanced through (Michigan) industry-wide supply control.

In the Pricing section above, it was noted that supply control could be used to limit supplies in various market segments and thereby influence prices. Producers are often unwilling to impose supply control upon their production through a Cooperative or marketing order. Quality regulations may be more acceptable to them and other segments of the industry than outright supply control and may be used to limit supplies for each market segment. Quality control may be more easily adopted by the producers for all the Michigan celery industry through a state marketing order. Producers in the Michigan Celery Promotion Cooperative or a merged organization could also voluntarily agree to impose quality controls upon themselves which could be used to control their supplies to market segments.

¹See Chapter 3, page 33 for detail on cutting holidays.

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¹See Quality Improvement
additional detail.

The Michigan Celery Promotion Cooperative is not in a complete monopoly situation and is therefore limited in the gains that it could achieve through controlling only its own supply. If prices in particular market segments were enhanced by the Cooperative's limiting available celery supplies, those producers not so constrained may increase production, which is known as a supply response. There are bounds, however, within which supplies may be limited and price enhanced without precipitating a supply response. These bounds are not clearly defined as the risk and rate of return functions for existing and potential growers most likely have considerable variability.

Quality. Quality control to establish uniform grades and standards in the Michigan celery industry may be undertaken by a producer marketing cooperative, included as a marketing order provision, or some combination of both. Celery is a perishable commodity, and its quality can deteriorate during the marketing process. Fresh market celery produced by members of the Michigan Celery Promotion Cooperative is randomly graded upon its delivery to shippers.¹ It must then be sold within a relatively short period of time (7 to 10 days) if this grade is to be reflected to the consumer. The continuing production of fresh celery generally does not make it profitable to store fresh market celery for long periods.

Central packing of celery by the Michigan Celery Promotion Cooperative could be used to improve and maintain the quality and uniformity of celery. An operation such as this could also provide sufficient volume from which to select and pack an extra high quality

¹See Quality Improvement Program, Chapter 3, page 36 for additional detail.

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¹See Attitudes
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²See Chapter 3

fresh celery that could be priced above the usual quality. Only differences that buyers are willing to pay for are pertinent to the establishment of such a pack. Field buyers recognized high quality packs and were willing to pay \$.50 to \$1.00 more per crate to obtain them.¹

A central packing operation would eliminate small packing houses and individual grower packing sheds. It would also eliminate the direct contact that shippers now have with individual growers and would permit the Cooperative to perform the shipper function and market mixed vegetables as mentioned above. This would lend itself to the Cooperative acting as a merchandising agency and would permit full promotion of a brand name.

The Michigan Celery Promotion Cooperative is beginning to establish "centralized" packing plants in an effort to improve celery quality and uniformity of pack.² Additional consideration should be given to the possible economies and advantages of a single central packing plant which have been discussed in this section. Other advantages would include economies in administration, labor use (even though a larger operation might be unionized), and expansion of the processing season to include other crops in order to obtain a higher use of facilities and possibly an improved labor force. Central packing operations could be included as an integral part of the Cooperative's organization and operation or established as a partially owned subsidiary.

¹See Attitudes section under Quality in Chapter 6 for additional detail.

²See Chapter 3, page 39 for additional detail.

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The Cooperative's quality control program should begin at the production level and culminate at the consumer level. The fresh product cannot be remade in a central packing operation but must be produced and harvested with quality considerations in mind. Coordination to insure proper quality control during production and harvesting as well as in packing, transportation and at the retail level should be sought continually. This could be obtained on a contract basis giving fieldmen additional authority in working with producers. The importance of such control becomes apparent, for example, in considering the frequent pesticide sprays applied during celery production. Many of the sprays used could leave toxic residues if applied at improper periods relative to harvesting. If such an act did occur and were publicized, it could result in severe economic repercussions against the celery industry.

Market Expansion

The objective of market development is to increase aggregate sales, which would result in improved returns to those who produce and market the products. To accomplish this may involve "...a wide range of marketing activities such as standardizing and grading, packaging, processing, transportation, financing, merchandising and promotion and other selling activities, product development and innovation, and marketing research. The coordination of these activities is an important part of the market development process." (37:1) Only limited portions of this process having particular economic potential are considered relative to market expansion for the Michigan Celery Promotion Cooperative.

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it in expanding its market for fresh celery¹ represents an efficient use of the Cooperative's current resources. However, the Cooperative might further benefit from these efforts if it were in a position to direct its salesmen to solicit business from organizations called upon by the merchandising agency. This could be accomplished by the Cooperative taking over the shipper function which was mentioned above as an alternative to the present practice.

The development and use of mechanical celery harvesting equipment may influence celery production and possibly its marketing. Mechanical harvesting may necessitate larger acreages than are currently produced or readily available in Michigan in order to lower per unit costs of a harvester. It may also permit production of larger acreages as labor would not be such a limiting factor at harvest time. It is possible that California and Florida could more completely dominate celery production as they are the only states having sufficient suitable acreage for large scale production and harvesting operations.

Celery marketing could be altered by the development of commercial harvest mechanization. For example, if the stalks were harvested by cutting them above the butt, the petioles would separate, leaving little meaning to stalk sizes and current United States celery grades. In order to maintain quality of celery harvested in this manner, a new package would be required. The concept of marketing a stalk of celery would also be destroyed, opening the possibility of marketing celery by weight.

The markets for both fresh and processing celery could be expanded by shifting their demand curves to the right through various techniques

¹See Chapter 3, page 48 for additional detail.

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such as advertising, new products, and new markets. Additional products or lines could be added to expand or further segment the market for Michigan celery. A high quality, prepackaged, large size fresh celery could have excellent acceptance by field buyers.¹ New product forms for fresh and processing celery might be considered after a determination of market possibilities. Providing consumers a ready-to-serve fresh celery product would coincide with current food marketing trends. Two new product areas for processing celery have potential.² These are the development and refinement of preprocessed products for sale as inputs to the processing industry, and the development of new processed consumer products utilizing celery.

Through sales promotion and advertising, non-food services such as packaging, processing and ready-to-eat items can be sold along with the food itself. (10:29) Advertising and promotion funds may be collected and used under a marketing order as may funds for research and market development. All celery producers bound by a marketing order would contribute financially to these activities. A merger with the Florida celery marketing cooperative would also provide additional funds for development and promotion of these products. Such a merger would also establish a year around raw product supply from which to produce these products for year-around marketing.

Organization or contractual arrangements to permit year-around celery marketing could be economically beneficial to a group having this capability, as noted above. Another possibility also exists-- the development of a foreign market for fresh celery which could

¹Based upon field buyer interviews as discussed in Chapter 6.

²Based upon field buyer, shipper and processor interviews as discussed in Chapter 6.

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expand the demand for celery produced by a year-around marketing organization. Additional research would be needed before embarking on this activity to determine the relationship of transportation cost to celery value. A year-around celery supply could also be useful in expanding this group's share of domestic fresh and processing markets by offering celery through one firm all year. This could reduce negotiation for fresh and processing buyers.

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CHAPTER VI

ATTITUDES OF CELERY GROWERS, SHIPPERS, PROCESSORS AND FIELD BUYERS TOWARD ALTERNATIVE MARKETING ORGANIZATIONS AND PRACTICES

Changing marketing organizations and practices have characterized the Michigan celery industry in recent years. These changes have been at the impetus of producers, due to their willingness to seek solutions to their problems through group action. These changes, discussed in Chapters 2 and 3, have in turn continued to alter attitudes of those in the Michigan celery industry toward other marketing organizations and practices that could be employed. A number of possible organizational and marketing practice alternatives were discussed in Chapter 5. Current attitudes of those in the Michigan celery industry toward some of the more promising of these alternatives are presented below. The attitude survey work presented in this chapter along with the organizational setting presented in Chapters 2 and 3, price predicting work of Chapter 4, and economic rationale for alternatives presented in Chapter 5, are viewed as either facilitating or inhibiting the recommendations to the Michigan celery industry and the Michigan Celery Promotion Cooperative that are presented in Chapter 7.

Howard has defined an attitude as "...an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world.... They are enduring predispositions for or against...objects, people, or events." (24:145) The degree to which attitudes are enduring requires clarification. We make sense of our perceptions in conjunction with our existing cognitive structures, and in this way we are able to conclude

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²See Appendix
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something about the state of some feature in our environment. "As illustrations of cognitive structure, we have the individual's general frame of reference, which should be considered the most stable cognitive structure; beliefs, social ideals, morals, and cultural frames of reference, which we could consider a little less stable; and finally, attitudes, which perhaps are the most changeable and manipulable." (24:141) Hence, when change in an individual's cognitive structure begins to occur, attitudes are often the first to be affected. It is for this reason that attitudes are being considered here following the chapter on alternative merchandising and organizational possibilities (Chapter 5) and prior to the chapter (Chapter 7) in which recommendations are made to the industry and the Cooperative.

Trocke has conducted surveys and evaluations of the Michigan celery marketing program for three years--1963, 1964 and 1965. (50, 51, 52) His surveys were conducted by mail to Cooperative members and nonmembers. Nonresponse was prevalent among nonmembers but was not evaluated to determine if it would materially alter results. The number of nonmembers responding was so few that their responses are not presented here.¹

Attitudes of shippers, processors and field buyers presented in the latter part of this chapter are the result of personal interviews conducted by the writer. Open end or questionnaire² interviewing was conducted during the summer of 1967. A slightly different schedule was used for each of the three groups interviewed.

¹The number of nonmember respondents in 1963 was 9, 1964--2, and 1965--1. (50, 51, 52)

²See Appendix E for copies of the questionnaires used in conducting the interviews.

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All five major shippers of Michigan celery were interviewed, in addition to four smaller shippers. Five of the shippers interviewed handled only celery produced by the Michigan Celery Promotion Cooperative. In selecting the four smaller shippers, some attempt was made to draw them from different geographical locations within Michigan. Apart from that, they were selected upon the basis of their willingness to permit the interview. At the time the interviews were conducted, there were approximately 27 Michigan celery shippers and grower-shippers.

An attempt was made to contact and interview all processors of Michigan celery. All seven known Michigan celery processors were contacted and four usable interviews were obtained. This group will be referred to hereafter as processors. Arrangements to conduct interviews could not be made with two processors, and a third no longer processed celery. In addition to these seven processors who specifically used Michigan celery, three other processors were located that used celery in their products. One of these processors purchased celery in crates at the Chicago terminal market and at times could have purchased Michigan celery there. However, this was not determined as it was not possible to obtain an interview with this processor. One of these processors purchased only frozen celery, while the other purchased only dehydrated celery. Michigan celery is not commercially available in either of these forms. An interview was obtained with the processor using dehydrated celery, but the responses lacked relevance for the Michigan celery industry and are not included.¹

Three chainstore field buyers and a military buyer were also interviewed. However, responses obtained to questions in one of the

¹Admittedly dehydrated celery as a possible new product holds some potential for the Michigan celery industry. However, the interview questions concerning existing and alternative marketing organizations and practices pertaining to celery were outside of this firm's expressed experience relative to celery procurement.

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field buyer interviews are not presented as they contained very little information. These field buyers continuously review local commodity supplies and prices and place what they consider to be "good buys" on their wire services to the divisions of their chains. These "good buys" are then reviewed by chainstore divisions who generally make the procurement decisions. The field buyer has considerable power over local supplies of a commodity. If he does not list local supplies, then the divisions will not know of them and the possible market for the local supplies is reduced.

These field buyers represented the major chainstores that purchase Michigan celery, and the military buyer was responsible for all purchases by the military of Michigan celery, in addition to other commodities. No attempt was made to interview other retail buyers of Michigan celery.

Attitudes of Grower Members Toward the Cooperative,
Present Marketing and Alternative
Marketing Practices

Members of the Michigan Celery Promotion Cooperative each year contact all Michigan celery producers not in the organization, informing them of the Cooperative's advantages for members and the Michigan celery industry. As a result of this activity, all Michigan celery producers have at least an acquaintance with the Michigan Celery Promotion Cooperative and its activities.

A cooperative is a voluntary form of organization and in this case, a member need bind himself to it for only one year. Some producers prefer to "wait and see how it performs," and almost all producers not joining believe they will benefit from their decision. If the Cooperative fails, they will be where they were when it started; and

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if it succeeds, they will have all the benefits of a "free rider." If they join and the Cooperative fails, then they will have lost money; and if it succeeds, they will be contributing to its operating costs. It is for these above reasons that for success in the long run a voluntary organization must offer benefits not available to non-members, or be a group composed of members with a "social conscience."

It is useful to explore member attitudes toward the Cooperative in general and toward specific aspects of its organization in order to determine what its future role should be in the opinion of growers. In the following three sections, attitudes toward the Cooperative in general, its present marketing activities, and toward alternatives are presented and evaluated.

Grower Attitudes Toward the Cooperative

The general attitudes of grower members toward the Cooperative's programs are revealed by their responses to the following question: "Overall, do you feel the Michigan Celery Promotion Cooperative's (1963, 1964, 1965) program was (successful, an improvement, or a failure)?" (50, 51, 52) The responses are arrayed in Table 13 on a percentage basis. Each year, almost all of the grower members rated that year's program either as "successful" or "an improvement." The increased percentage (from 48 to 73 percent) of grower members rating each year's Cooperative program as "successful" indicates an increasing degree of member satisfaction with the organization. This would be expected over time as those members not satisfied with the organization managed to change it to their satisfaction or left the group.

The Cooperative has attempted to keep its members informed of its activities through newsletters and personal contact. Over the

TABLE 13.--Responses
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TABLE 13.--Responses of Michigan Celery Promotion Cooperative members to the question: "Overall, do you feel the Michigan Celery Promotion Cooperative program was: Successful, An Improvement or A Failure?", 1963-1965.^a

Rating	Percentage Response by Year		
	1963	1964	1965
Successful	48	60	73
An Improvement	52	36	27
Failure	0	4	0
Total	100	100	100

^aSee Appendix A, Table 9 for actual response data and source.

three-year period, 1963 through 1965, 64 percent of the grower members responding to Trocke's mail survey indicated that they were kept "well informed" of developments within each year's program, 35 percent were kept "fairly well informed," and 1 percent indicated they were "poorly informed."¹ (50, 51, 52) There was very little variation in these responses from one year to the next. These responses indicate that the Cooperative's efforts to keep its members informed of its activities have been quite successful.

Member attitudes toward a cooperative may be greatly influenced by the organization's manager. The Michigan Celery Promotion Cooperative hired a new general manager in 1964 who holds that position at this writing. At the end of the 1963, 1964 and 1965 Michigan celery seasons, Cooperative members were asked if they felt the general manager had done either a "good job, a fair job, or a poor job." (50, 51, 52) The responses of Cooperative members answering

¹ See Appendix A, Table 10 for additional detail.

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this question are shown in Table 14 on a percentage basis. Sixty percent of the Cooperative members responding felt that the general manager had done a "good job" in 1963. In 1964, the Cooperative's new general manager was given a "good job" rating by only 23 percent of the members responding, but in 1965 this had risen to 75 percent of the members responding. The drop in rating for the new general manager would be expected as he was learning the job that year. The substantially increased percentage of members giving him a "good job" rating the following year indicates that his performance was very satisfactory to three-fourths of the members responding.

Attitudes of members of the Michigan Celery Promotion Cooperative toward their organization's fieldman in 1963, 1964 and 1965 are shown in Table 15. Because a fieldman occupies a position requiring frequent contact with members, he may come to be a symbol of the organization to its members and thereby influence their attitudes toward the organization. The rating given the Cooperative's fieldman by its member growers fell from approximately 70 percent giving him a "good job" rating in 1963 and 1964 to only 53 percent giving him that rating in 1965. The Cooperative has corrected this situation according to the general manager.

Member attitudes toward the Michigan Celery Promotion Cooperative are also evidenced by the extent members cooperate with the organization in filling out questionnaires, pack high quality pack, attend meetings, inform committees and manager of any information helpful to the Cooperative, support the program at all times, and encourage others to cooperate. Ninety-two percent of the Cooperative members answering a question concerning the extent of their cooperation with the

TABLE 14.--Response
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TABLE 15.--Response
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TABLE 14.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that the General Manager has done a (Good Job, Fair Job, Poor Job)?", 1963-1965.

Rating	Percentage Responses by Year ^a		
	1963	1964	1965
Good Job	60	23	75
Fair Job	31	61	21
Poor Job	10	16	4
Total	101 ^b	100	100

^aSee Appendix A, Table 11 for actual response data and source.

^bDoes not total 100 due to rounding error.

TABLE 15.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that the fieldman did a (Good Job, Fair Job, Poor Job)?", 1963-1965.

Rating	Percentage Response by Year ^a		
	1963	1964	1965
Good Job	70	71	53
Fair Job	25	27	33
Poor Job	5	2	15
Total	100	100	101 ^b

^aSee Appendix A, Table 12 for actual response data and source.

^bDoes not total 100 due to rounding error.

Cooperative gave answers of either "fairly good support" or "100 percent cooperation" on the average for 1963-1965.¹ (50, 51, 52)

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¹See Appendix A, Table 13 for additional detail.

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¹See Appendix

in the organization. This is an indication of their support for its activities.

Another indication of a cooperative's performance is whether the members feel the benefits they receive from the organization are commensurate with their costs. Over the period 1963 through 1965, 83 percent of the Cooperative's members did not think the Cooperative was charging them too much for the benefits they were getting from it.¹ (50, 51, 52) This is a satisfactory indication of performance for the first three years the Cooperative was in operation.

Members of the Michigan Celery Promotion Cooperative responding to the above questions, for the most part, had favorable attitudes toward the Cooperative.

Grower Attitudes Toward Present Cooperative Marketing Activities

Approximately 72 percent of the Cooperative's members were satisfied with their organization's marketing emphasis in 1963 and 1964, but by the end of the 1965 Michigan celery season, 73 percent felt that the Cooperative should concentrate more on cultural practices (Table 16). At the end of Michigan's 1965 celery season, Cooperative members apparently felt that their more pressing marketing problems had been solved and that celery production deserved renewed attention. At this writing the Cooperative's emphasis remains on marketing, but the organization's fieldman has provided members considerable assistance with their cultural practices.

The most urgent problem facing the Michigan Celery Promotion Cooperative at its inception in 1963 was improvement of celery quality. Cooperative members were asked, at the close of the 1963

¹See Appendix A, Table 14 for additional detail.

TABLE 16.--Response
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^aSee Appendix

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TABLE 16.--Response of Michigan Celery Promotion Cooperative members to the question: "Should the Cooperative concentrate more on cultural practices or marketing problems?", 1963-1965.^a

Emphasis	Percentage Response by Year ^a		
	1963	1964	1965
Cultural Practices	26	31	73
Marketing Problems	74	69	27
Total	100	100	100

^aSee Appendix A, Table 15 for actual response data and source.

through 1965 marketing seasons, if the organization's quality control program had been "too loose, just right, or too tight" in its enforcement. The majority of members (75 percent) said that the Cooperative's quality control program had been "just right" in its enforcement over the period 1963-1965.¹ (50, 51, 52)

More specifically in relation to the manner in which the quality control program was conducted, members of the Michigan Celery Promotion Cooperative were asked if the Inspection Service was fair in their inspection method. Approximately 87 percent of Cooperative members answering this question in 1963, 1964 and 1965 thought the method of inspecting celery was fair.² (50, 51, 52)

Cooperative celery growers were also asked to rate how well the Federal-State Inspection Service performed its quality inspection job for the Cooperative. They were asked to rate the performance as "well, fair or poorly." On the average, over the three years (1963,

¹See Appendix A, Table 16 for additional detail.

²See Appendix A, Table 17 for additional detail.

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1964 and 1965), 75 percent of the Cooperative members answering said the Federal-State Inspection Service had done its job "well," 24 percent said "fair," and 1 percent said they had done their job "poorly."¹ (50, 51, 52)

The Michigan Celery Promotion Cooperative has its own celery quality standards,² and the Federal-State inspectors base their inspection upon these standards, at the Cooperative's request. Approximately 87 percent of the members indicated each year in the 1963 through 1965 survey that the Cooperative's celery quality standards should "remain the same."³ (50, 51, 52) This further confirms member satisfaction with the Cooperative's quality program.

Based upon their responses to these questions, the members were generally satisfied with the Cooperative's celery quality program during 1963 through 1965.

In order to maintain control over their celery supply during the marketing season, the Michigan Celery Promotion Cooperative may call a "cutting holiday" at which time members are not permitted to harvest celery. A holiday may be called to permit all members' celery time in which to obtain a more marketable condition through an increase in size and maturity, or to prevent the buildup of excessive inventory of harvested celery in the shippers' storage facilities. A cutting holiday may intensify a particular member's quality problems either due to the increased possibility for disease or through permitting the celery to become too large. These quality problems may

¹See Appendix A, Table 18 for additional detail.

²See Chapter 3, pages 36-39 for additional detail.

³See Appendix A, Table 19 for additional detail.

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increase a grower's harvesting and packing costs. Another disadvantage of the cutting holiday is that members may only harvest their celery more rapidly once the holiday is over. For these reasons, the Cooperative recently (1967) adopted an area and, in some cases, an individual grower cutting holiday policy which has provided additional flexibility.

At the close of the 1963, 1964 and 1965 celery seasons, Michigan Celery Promotion Cooperative members were asked if the cutting holiday was helpful in keeping the celery price up. In 1963, 86 percent of the member growers answering this question said that the cutting holiday had been helpful in keeping the celery price up. In 1964 this percentage was 78 percent, and in 1965 it was 91 percent.¹ (50, 51, 52) The Cooperative's membership has become increasingly receptive to controlling its product supply and could possibly adopt an even more rigid form of supply control.

Michigan celery growers were also asked to rate the effectiveness of the Michigan Celery Promotion Cooperative's price program in Trocke's 1963, 1964 and 1965 surveys. (50, 51, 52) Seventy-two percent of the member growers answering this question in 1963 rated the Cooperative's price program as "effective" (Table 17). This percentage dropped to 64 percent in 1964 and 62 percent in 1965 for a three-year average rating of 66 percent "effective," which is not particularly outstanding. Members' ratings as to effectiveness of the Cooperative's price program can be interpreted as referring to the organization's ability to price its products prior to offering them for sale and to the prices achieved relative to those of other

¹See Appendix A, Table 20 for additional detail.

producing areas.

indicator of price

TABLE 17.--Response of members to the question: "Was the quality of the product (Effective, Fairly Effective, or Useless)?"

Rating
Effective
Fairly Effective
Useless

^aSee Appendix

Grower Attitudes and Practices

Michigan Celery Growers' Attitudes and Practices

their attitudes toward the marketing order for Michigan celery have been favorable. When the Cooperative Marketing Order was first established in 1963, a majority of growers felt it was a good thing for the industry. Celery centrally located in the State or not central pastures were 33 to 17 percent. Question of whether the celery packed by growers (66 percent) answered

producing areas. Net revenue would be a useful profit or loss indicator of price program "effectiveness" for the Cooperative.

TABLE 17.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you think the price program this year was (Effective, Fairly Effective, Useless)?", 1963-1965.^a

Rating	Percentage Response by Year ^a		
	1963	1964	1965
Effective	72	64	62
Fairly Effective	26	36	38
Useless	2	0	0
Total	100	100	100

^aSee Appendix A, Table 21 for actual response data and source.

Grower Attitudes Toward Alternative Marketing Organizations and Practices

Michigan Celery Promotion Cooperative members were asked about their attitudes toward central packing of celery in 1963 and a state marketing order for celery in 1965. (50, 51, 52) In 1963, only Michigan celery hearts were packed in centralized packing houses. When the Cooperative's members were asked about central packing in 1963, a majority did not feel that central packing of celery would be a good thing for the industry and were not interested in having their celery centrally packed. Members answering the question of whether or not central packing of celery would be a good thing for the industry were 33 to 17 (83 percent) against it. (50) In response to the question of whether or not they would be interested in having their celery packed by central grading, 35 of the 53 Cooperative members (66 percent) answering were not interested. (50) Since the Michigan

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Celery Promotion Cooperative began to centrally pack some of its celery in 1967, apparently there had been some change in its members' attitudes toward central packing after the 1963 survey. Recognition by the Cooperative members of benefits derived from marketing a quality product would account for some of this attitude change. Difficulties experienced by producers in obtaining packing labor for the individually short seasons could also account for this attitude change. This evidence that attitudes can and do change implies that attitudes are not necessarily continuing limiting factors.

The group of celery growers that comprise the Michigan Celery Promotion Cooperative considered a federal marketing order for celery as an organizational form when they were seeking means of uniting Michigan's celery producers in 1961. At that time a federal marketing order was rejected by the group in favor of a voluntary organization.¹ In 1965, the Michigan legislature passed enabling legislation which was signed by the Governor that would permit the Michigan celery industry and other commodity groups to establish state marketing orders. Celery Cooperative members were asked at the close of the 1965 celery season: "Do you think a State Marketing Order is needed to be sure all growers pay their fair share and keep their quality up?" Fifty Cooperative members answered this question, and 39 (78 percent), thought a state marketing order for celery was needed. (52) Assuming this attitude still prevails, the Cooperative would be in a favorable position to initiate a state marketing order. They have not seen a state marketing order through to a vote, so they

¹See Chapter 3, page 29 for additional historical detail.

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Attitudes of Shippers, Processors and Field Buyers of
Michigan Celery Toward Existing and Alternative
Marketing Organizations and Practices

General characteristics of shippers, processors and field buyers interviewed are discussed prior to considering their attitudes toward existing and alternative marketing organizations and practices. These general characteristics provide a partial basis from which to interpret their's and the grower's attitudes and formulate implications for the Michigan celery industry and particularly the Michigan Celery Promotion Cooperative.

Shipper Characteristics

The nine shippers interviewed said they had sold between 1,278,889 and 1,303,789 crate equivalents of celery in 1965. This represents approximately 105 percent of that year's Michigan celery production as reported by the Michigan Crop Reporting Service. The shippers were not asked specifically what their sales of only Michigan celery were. However, they were asked what their celery sales were during the Michigan season. That the sales of these nine shippers were larger than Michigan's reported celery production for that year may be the result of any, or a combination of the following: overstatement by the shippers, shippers including sales of other than Michigan celery, or understatement of Michigan celery production by the Crop Reporting Service.

These nine shippers, on the average, sold 70 percent of their 1965 celery volume in crates, 24 percent as celery hearts and 6 percent

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as bulk celery. Those shippers interviewed who were not affiliated with the Michigan Celery Promotion Cooperative, on the average, sold 69 percent of their 1965 celery volume in crates, 31 percent as celery hearts, and sold no celery in bulk form. Shippers interviewed and affiliated with the Cooperative, on the average, sold 71 percent of their 1965 celery volume in crates, 19 percent as hearts and 10 percent in bulk form.

The nine shippers, on the average, sold 47 percent of their 1965 celery volume to chainstores and independent stores, 43 percent was sold through terminal markets and brokers, 7 percent was sold to processors, and 3 percent was sold in the gift business market and was shipped by Railway Express. Shippers affiliated with the Cooperative were the only ones among those interviewed that made sales directly to processors. They made 13 percent of their 1965 sales to processors. Some non-Cooperative shippers also sell celery to processors, although the extent to which this occurs is not known.¹ Processors also purchase some Michigan celery on a contract basis with individual non-Cooperative growers which will be discussed below under Processor Characteristics. Terminals and brokers purchased 47 percent and chainstores and independent stores 40 percent of Cooperative shippers' 1965 sales. Shippers not affiliated with the Cooperative made 55 percent of their 1965 sales to chain and independent stores, 39 percent to terminals and brokers, and 6 percent to the Railway Express gift business.

In response to a question asking the shippers to describe the function they perform in celery marketing, only two of the five shippers affiliated with the Cooperative mentioned that organization. One of

¹This was determined during interviews with celery processors.

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these shippers classified his firm's function in celery marketing as "Sales agents for M. C. P. C."¹ The other classified his firm's function as "Distributor and sales agent for M. C. P. C. on a commission basis." Responses to this question by the other three Cooperative shippers provide some indication of how they view their roles in the celery industry. One of these said his firm was "A major distributor for celery to the eastern half of the country." Another said his firm was a "Grower representative into the markets." This particular shipper went on to elaborate, indicating that he did not like the term "shipper" as he feels closer to the grower. The remaining shipper said, "We're shippers: collecting, loading, sold before sending."

Two of the non-Cooperative shippers were also celery growers, and their replies to the function they performed in celery marketing were influenced by that relationship. One of these viewed his function, as related to celery marketing, simply as that of "Grower-shipper." The other said his firm's functions were "...growers, packers and shippers." The two remaining non-Cooperative shippers viewed their functions respectively as "Wholesalers of celery, distributors, and a small Railway Express shipping business," and "Handle sales for the Association."²

In considering the Cooperative and non-Cooperative shippers' replies concerning the function they perform in celery marketing, their close relationship with celery producers is predominant. Out

¹M. C. P. C. stands for Michigan Celery Promotion Cooperative.

²The use of "Association" refers to the Eastern Michigan Vegetable Association on the eastern side of the state of Michigan; see Chapter 3, page 30 for additional detail.

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of the nine shippers interviewed, six, when asked to describe their celery marketing function, either used the word grower(s) or referred to a producer organization. The close relationship between celery producers and shippers is emphasized by the shippers' descriptions of their functions.

In an effort to obtain an insight into the competitive structure of the celery industry, shippers were asked whom they considered their competition in the celery business to be. The shippers mentioned California seven times, New York five times, and Ohio three times. Three shippers considered other Michigan shippers to be among their competition, and one shipper stated that other Michigan shippers were not his competition. One of the shippers interviewed said that he was the "biggest" in Michigan and that he did not worry about competition. The Michigan Celery Promotion Cooperative was mentioned by only two shippers in conjunction with this inquiry concerning competition. A non-Cooperative shipper enumerated the Michigan Celery Promotion Cooperative as among his competition, and a Cooperative shipper commented that there was "Not much competition in the state except for Imlay City¹--as the M. C. P. C. controls it."

Processor Characteristics

In most cases the celery buyer at each of the processing firms interviewed was the person with whom the interview was conducted. Frequently, management personnel also sat in on the interviews. No apparent contradictory statements were made relative to a given question when an interview was conducted with more than one individual.

¹"Imlay City" refers to the production area on the eastern side of the state.

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For that reason, the responses of each of the four processing firms are presented here as though they were made by one individual, or the firm. Four usable processor interviews were obtained.

No processors using celery could be located in Michigan during 1965, and this was still true in 1967. The processors interviewed were located in the states of Illinois, Indiana and Ohio. Locations of celery processing facilities for those processors not interviewed due to an unwillingness to cooperate would also include the states of Wisconsin and Minnesota.

These processors used the word "Processor" or the words "Packer and Processor" to describe the function they perform in celery marketing. All processors interviewed said that celery was a relatively minor input in their total processing operations. As a group, these four processors purchased their 1965 celery requirements in the following forms: 45 percent--bulk, 39 percent--crates, and 16 percent--stemmed. One of the processors purchased 100 percent of his firm's celery requirement in bulk form, and another purchased 100 percent in crates. Of the two remaining processors, one purchased half of his requirements in crates and half as stemmed celery; and the other processor purchased 80 percent of his celery requirements in bulk form, 16 percent stemmed, and 4 percent in crates. The form in which these processors purchased celery depended upon the use they expected to make of it and what raw celery form they were equipped to handle in their operations. These processors purchased 69 percent of their 1965 celery requirements from shippers, 19 percent on contract with growers and 12 percent from local produce terminals.

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The 1965 percentage uses of celery by final product for these processors were as follows: 47 percent--soup, 30 percent--Chinese food, 13 percent--mixed vegetables, 9 percent--juice, and 1 percent--relish. With the exception of one processor who produced three products in which celery was an input, each of the processors produced only one or two of the products mentioned above.

Three of the four processors interviewed used a total of 10,375 tons of fresh celery in 1965. Due to a policy of his firm, the other processor was unable to reveal what the 1965 celery requirements of his firm's operations had been. These four processors, on the average, purchased 61 percent of their 1965 celery purchases from Michigan. For individual processors the percentage of Michigan celery used relative to their total 1965 celery requirements ranged from 50 to 90 percent. Because the one celery processor was unable to provide his firm's total 1965 celery purchases, it was not possible to compute his Michigan celery purchases even though he provided the proportion these purchases comprised of his total celery purchases. The three remaining processors purchased 5,018 tons of Michigan celery in 1965.

Field Buyer Characteristics

In describing the function they perform in celery marketing, the field buyers referred to themselves as "Buyers" or "Buying Offices." The volume of Michigan celery handled by the three field buyers interviewed during the 1965 season totaled 129,800 crates, or approximately 11 percent of Michigan's 1965 celery production as reported by the Michigan Crop Reporting Service. During the Michigan celery marketing season, two of the field buyers interviewed purchased celery for

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distribution east of the Mississippi River, and they considered east of the Mississippi to be their area of operation. The other field buyer made celery purchases that were distributed, as he put it, "...to anywhere in the world."

The field buyers were asked during their interviews: "As related to celery procurement, whom do you consider your competition to be?" Two field buyers said they had no competition. This was explained by them as either a lack of pressure on the market from other buyers or the Michigan celery producer cooperative fairly well controlling the price of Michigan celery. The third field buyer said that all other field buyers were his competition.

Attitudes

Pricing

Shippers, processors and field buyers were asked if they would outline in a general way those factors which determine the price of Michigan celery. The factors and the frequency with which they were mentioned are shown below in Table 18. California celery was viewed as the price pacesetter during the Michigan season, and its leadership position was attributed to the volume and quality of celery from that state. Four shippers and all three of the processors interviewed specifically mentioned the Michigan Celery Promotion Cooperative as a factor determining the prices of Michigan celery. It should be kept in mind that shippers affiliated with the Michigan Celery Promotion Cooperative have signed contracts with that organization binding them to sell celery at no less than the prices set by the Cooperative. That other factors were mentioned with equal or

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greater frequency than the Michigan Celery Promotion Cooperative implies a recognition by shippers, processors and field buyers that the Cooperative has been pricing within the constraints of market conditions and of supplies from other producing areas.

TABLE 18.--Factors shippers, processors and field buyers believe determine the prices of Michigan celery, by frequency mentioned.

Factor ^a	Shippers (Frequency)	Processors (Frequency)	Field Buyers (Frequency)
California	9	3	3
Local (Michigan but not M. C. P. C.) ^b	8	3	
New York	5	3	1
Supply and Demand	5		3
Supply (at grower level)	5	3	
M. C. P. C.	4		3
Ohio	4		
Demand	2		
Processors	1		
Canada	1		
Florida	1		
Wisconsin	1		
Massachusetts	1		
Quality	1		

^aWhen geographic locations were referred to, the price determining factors were a combination of the amount and quality of celery supply, and price in the area mentioned.

^bM. C. P. C. refers to the Michigan Celery Promotion Cooperative and their practice of determining prices for their products prior to offering them for sale.

No major differences exist in the price determining factors mentioned by Cooperative shippers versus those mentioned by non-Cooperative shippers. Shippers not affiliated with the Cooperative did mention four peripheral areas of production--Canada, Florida, Wisconsin and Massachusetts--that impinge very little during the heart of the Michigan season. This may be an indication of a different market

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After the shippers, processors and field buyers had completed their initial responses as to what were the celery price determining factors, some additional questioning was done to see if other factors could be uncovered. The availability of other crops for shipment in mixed loads and their influence on price and use of celery received comment. Shippers described their buyers as wanting mixed loads to fill out trucks, reduce inventories, ease procurement by obtaining a number of commodities with a single telephone call, and to tailor deliveries to particular stores or areas. Two of the field buyers estimated that 50 to 65 percent of their Michigan celery purchases were shipped as mixed loads, but that the availability of mixed loads had no effect on celery prices. Shippers were divided in their opinions of whether the availability of other crops for shipment in mixed loads influenced the price of celery. Those shippers who felt that the availability of mixed loads had an effect on celery prices said that they "hold up" celery prices. Three of the processors said that the availability of other crops with which celery might be used in a final product did not influence the price or their use of celery. The fourth processor said that availability of fresh tomatoes might influence the price he would pay for celery but made no further comment on the subject.

Additional shipper and field buyer comments were solicited concerning the relationship between price changes at the grower level to in-store price changes. They were asked about the relative change in the price of crate celery that would induce an in-store price change. Inquiries were made into this relationship to provide an

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indication of retailer responsiveness to celery price changes at the grower level. The field buyers interviewed were either unwilling or lacked sufficient information to comment on the nature of these relationships. Shipper replies to this inquiry were often prefaced or followed by comments on in-store price changes as related to sales and margins on other retail store items. The shippers did not indicate by their responses that they had a quantitative concept of what the retail and corresponding consumer response might be to price changes made at the grower level. In-store celery prices, the shippers said, either "don't change" or change only in response to \$.50 or \$1.00 per crate price changes at the grower level. However, they were unable to quantify what magnitude an in-store price change might be relative to a given crate price or an in-store stalk price. Neither shippers nor field buyers commented about possible nonprice retail actions to sell more celery as a result of a lower grower price.

Shippers, processors and field buyers were asked if the supply of Michigan celery was sufficient to meet their's or their buyers' needs during the Michigan celery season. Four of the nine shippers interviewed said that the supply of Michigan celery was adequate to meet buyers' needs in most years; four said that the supplies were not adequate, and one shipper said they were only sometimes adequate. In explaining their responses, no shipper said that he failed to make sales due to inadequate supplies. There was essentially no difference of opinion between Cooperative and non-Cooperative shippers on the question of Michigan celery supply adequacy. They were split among themselves on the question. All field buyers interviewed

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said that Michigan celery supply was only sometimes adequate, and one considered this a major problem in purchasing Michigan celery. The short supply of large sizes ($2-2\frac{1}{2}$ dozen) early in the season was specifically mentioned by two of the field buyers as a problem to them. Processors said that there was sufficient Michigan celery supply in most years, although the short supply in 1966 was noted as an exception by two processors.

The shipper and field buyer comments on the adequacy of Michigan celery supply imply that there is a market for additional fresh Michigan celery. The price predicting equations of Chapter 4 indicate that the Michigan Celery Promotion Cooperative's price per crate for a given week would decline less than \$.05 per 1,000 crate increase in Cooperative supply.¹ Michigan celery producers may be able to improve their market position by expanding their production to permit larger offerings which may encourage field buyers to list Michigan celery on their wire services.

Shippers and field buyers were asked if they could conceive of any other basis for sale than f.o.b. shipping point. Currently, most celery prices are quoted on an f.o.b. shipping point basis with the products subject to inspection on arrival. In quoting this f.o.b. price, the shipper often adds the transportation costs, which the buyer pays, to facilitate the buyer in determining the delivered price, which is the price he is interested in. Field buyers expressed satisfaction with the existing basis on which celery prices were quoted at the grower level and could conceive of no other basis for sale. Two shippers suggested alternative pricing

¹See Chapter 4, pages 64-66 and 84 for additional detail.

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arrangements which were forms of "zone pricing." Backman has defined "zone pricing" as "...dividing the market into zones and quoting a single delivered price for each zone." (4:70) The zone pricing plans suggested were described in terms of lower prices to buyers, at any one time, as distance from the shipping point increases. Buyers nearer the shipping point would be penalized for being close to the source of supply by having to pay a higher price.

Quality

Typical celery quality requirements of a fresh celery buyer, according to six of the nine shippers interviewed, start with United States Number 1 grade. Additional requirements generally included the following: that celery be clean, compact (not bushy), and of good appearance. Three shippers also said that their buyers wanted to purchase celery with 10 to 11 inch midrib length.¹ As with many perishable commodities, the reputation of the seller is important. Buyers ask shippers such questions as "Do you like it?" and "Will you stand behind it?" Two shippers affiliated with the Michigan Celery Promotion Cooperative said their buyers ask for Cooperative celery. "Good quality" celery can command \$.50 per crate above the going price, according to two of the shippers.

¹a) Standards of midrib length to meet United States Number 1 grade: "Unless otherwise specified, the average midrib length of the outer whorl of branches shall be not less than 6 inches.... For off-length midribs, 5 percent, by count, in any lot for stalks which fail to meet the requirements as to average midrib length." (57:3)
 b) Standards of midrib length to meet M. C. P. C. Number 1 grade: "It shall have an 8" average midrib on 3-dozen and larger sizes.... Short shank celery (less than 8" for 2-2½-3's) shall be packed in plain crates whenever feasible and shall be discounted 5% off the f.o.b. price for M. C. P. C. #1 celery." (40:2)

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Two field buyers mentioned the United States Number 1 celery grade in conjunction with their quality requirements for celery. These buyers are willing to pay a premium of \$.50 to \$1.00 per crate for fancy packed celery. The third field buyer said that he did not always want a high quality product. All of the field buyers commented that they were not interested in purchasing damaged celery. These comments by shippers and field buyers indicate that a market does exist for a high quality fresh product.

Clean, hard, fresh celery with no decay or pith were mentioned most frequently as quality requirements by processors. Expensive in-plant labor relative to that on a farm or in a packing shed was given as a reason for this requirement. Only one processor said that he asked for celery by grade, and he asked for United States Number 1 as a starting point in negotiating a purchase. Quality considerations other than United States grades seem to be more important to processors. This is to be expected since the United States celery grades were established for use in the fresh celery market. Large sizes with long stalks were also part of celery quality requirements for two processors. These two processors used only stalks and were not interested in receiving excessive leaves or hearts. Both of these processors had purchased stemmed celery from the Michigan Celery Promotion Cooperative and commented on the reduction it had made in their labor costs.

Shippers were asked what the typical quality requirements are for the processing celery buyers. In general, shippers said that processors' celery quality requirements are not as high as those for fresh celery buyers, although processors definitely do not want dirty

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or diseased celery. The exact nature of processors' celery quality requirements depends upon the use a processor is going to make of the celery. There was a general recognition among the shippers interviewed that processors have been and are continuing to raise their celery quality requirements. Shippers recognized that processors were interested in guarding their firms' reputations by producing a quality final product. These comments, in conjunction with those of processors in the paragraph above, imply that the processing market can no longer be used as an outlet for inferior quality raw celery.

In meeting their buyers' quality requirements, shippers said that it was difficult to meet the fresh quality requirements which the trade would like, of a compact plant with a 10 to 11 inch midrib. Two field buyers said they had problems in meeting their celery quality requirements when purchasing Michigan celery. One said that Michigan celery was sometimes kept too long in storage before being sold, and the other field buyer was unable to purchase sufficient quantities of a fancy, quality pack.¹

Shippers and field buyers generally made opposite statements when asked, "Do you believe that the use of more strict quality control standards would benefit the industry by making it possible to sell more celery to consumers at satisfactory prices?" Shippers' comments were not favorable to the institution of more strict quality standards. They said that United States Number 1 grade celery was recognized as being a rather broad classification and having very

¹This was mentioned in conjunction with supply adequacy in the Pricing section above.

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little meaning to housewives. The Michigan Celery Promotion Cooperative's celery quality standards were recognized as being higher than those for United States Number 1 grade celery and desirable to the establishment and maintenance of a market position for the Cooperative's celery. Shippers want to sell value, but it is possible that they felt increased quality would decrease the quantity to be sold and hence decrease their per unit sold income. Field buyers were favorably disposed toward the institution of more strict quality control standards and are probably more indicative of consumer response to quality improvement efforts.

Some probing was also done to see what shippers' conceptions were about the relationship between the quality of California and Michigan celery. Five shippers thought the quality of California celery to be better than Michigan celery quality. Their comments were that California quality is "consistent," "unbeatable," "better," "weight is better" and "sizing is larger." In the opinion of a number of Michigan celery shippers, California celery quality is superior to that from all other areas.

The general implication to be drawn from these shipper, processor and field buyer comments on celery quality is that quality is very important to the Michigan celery industry's maintenance of its fresh and processing market positions.

Advertising

Shippers, processors and field buyers were asked to select among three approaches to advertising--general advertising of Michigan celery, advertising one or two brands, or advertising many individual brands--the one which they believed would most increase the demand

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for celery. Three shippers said that they did not spend money on advertising. They felt that good quality was sufficient to sell celery, and that other forms of advertising were of little value. Five of the nine shippers interviewed said that general advertising of Michigan celery would have the greatest influence in increasing total demand for Michigan celery. The remaining shipper felt that a first and second Michigan label should be offered. This, he said, would provide an opportunity to move an "oversupply" at a lower price. All shippers selecting one of the advertising alternatives recognized that celery would have to be "good quality" before an advertising program could be of any benefit. Field buyers and processors also indicated that general advertising of Michigan celery would be the most effective advertising approach through which to attempt to increase demand for Michigan celery.

The above comments by shippers, processors and field buyers indicate that the number of brands promoted should be limited and that the use of the word "Michigan" in the advertising may have merit. Present brand advertising by the Cooperative should make it difficult for free riders. However, each shipper promoting his own brand or label of celery hearts merits reconsideration in view of these expressed attitudes toward its effectiveness.

Producer Marketing Cooperative

Shipper, processor and field buyer attitudes concerning pricing, quality, and advertising of Michigan celery were considered above, with little attempt to indicate the relationships among pricing, quality, and advertising. Also, the attitudes were not specifically related to a marketing program or organization. In this section

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shipper, processor and field buyer attitudes toward particular price, quality, advertising and other activities conducted by a producer marketing cooperative and in the following section conducted through a state marketing order, are discussed.

Shippers, processors and field buyers were asked if, from the point of view of the celery industry and of their businesses, whether they favored the operation of a celery producer marketing cooperative. Their responses to these two inquiries are shown below in Table 19. Eleven of 16 shippers, processors and field buyers interviewed favored operation of a producer marketing cooperative from the point of view of the celery industry. However, only 8 of the 16 favored operation of a producer marketing cooperative from the point of view of their businesses. A producer marketing cooperative was not viewed with as much favor relative to their businesses as for the celery industry. Possible reasons are that a cooperative might improve quality and control supply, but it would also limit their flexibility and discretion in marketing celery.

Pricing. Shippers, processors and field buyers were asked if a producer marketing cooperative should attempt to establish pricing guides for its products. Their answers are summarized below in Table 20. In total, 10 of the 16 interviewed favored a producer marketing cooperative establishing pricing guides, 2 were against it and 4 were not sure. All shippers affiliated with the Michigan Celery Promotion Cooperative, which administratively prices its products, favored a producer marketing cooperative's involvement in pricing. They apparently value the daily price stabilization and certainty. However, three of these shippers hedged their responses with comments

TABLE 19.--Attitude toward two questions: "If the industry, do you favor the operation of a cooperative?"

Function

Shipper
Processor
Field Buyer

Total

Function

Shipper
Processor
Field Buyer

Total

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TABLE 19.--Attitudes of shippers, processors and field buyers toward two questions: 1) From the point of view of the celery industry, do you favor the operation of a producer marketing cooperative? 2) From the point of view of your business, do you favor the operation of a producer marketing cooperative?

From the Point of View of the Celery Industry			
Function	Response		
	Yes	No	Not Sure
Shipper	7	1	1
Processor	1	0	3
Field Buyer	3	0	0
Total	11	1	4

From the Point of View of Their Own Business			
Function	Response		
	Yes	No	Not Sure
Shipper	5	4	0
Processor	1	1	2
Field Buyer	2	0	1
Total	8	5	3

about the attitude taken by a cooperative toward pricing and whether or not such prices were realistic. Two non-Cooperative shippers favored cooperative pricing because it provided a price level for their sales.

The processor and field buyers favoring cooperative pricing said that it would insure they all paid the same price for celery, which would make their buying easier and more orderly. Those opposed to cooperative pricing said that it would prohibit them from making

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Shipper
Processor
Field Buyer

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TABLE 20.--Attitudes of shippers, processors and field buyers toward a producer marketing cooperative attempting to establish pricing guides for its products.

Function	Response		
	For	Against	Not Sure
Shipper	7	1	1
Processor	1	1	2
Field Buyer	2	0	1
Total	10	2	4

special deals with various shippers, and it would take some of the "competitive spirit" out of the business. Because of their familiarity and apparent generally favorable experiences with the administered prices of the Michigan Celery Promotion Cooperative, shippers, processors and field buyers were favorably disposed toward cooperative pricing.

Quality. When shippers, processors, and field buyers were asked if a producer marketing cooperative should undertake quality control to establish uniform grades and standards, all but one processor replied affirmatively. The negative respondent did not reveal his reasons. The quality control activities of the Michigan Celery Promotion Cooperative were mentioned by shippers, processors and field buyers as having re-established Michigan celery in the market and were why they favored this activity. Due to consumer demand, processors and field buyers wanted to purchase uniform quality products and recognized that a cooperative could provide them. These attitudes indicate that the Cooperative's quality control program has been beneficial in marketing celery.

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TABLE 21.--Att
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Processor
Field Buyer

Total

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Chapter 5, pag

Central Packing. Shipper, processor and field buyer attitudes toward a producer marketing cooperative operating a central packing facility are shown below in Table 21. Nine of the 16 interviewed were for central packing by a producer cooperative, 6 were against it, and 1 was not sure. The 5 shippers who were against central packing opposed it because they did not think a cooperative could perform the job as economically as the producers were currently performing it. The field buyer opposing central packing said that it would "lessen competition." Those shippers and field buyers favoring central packing by a producer marketing cooperative said that it would result in a more uniform pack. Processors favored central packing because of quality increases and possibly more efficient preprocessing which they said could occur. Although shippers did not mention it, they might also be opposed to central packing by a producer marketing cooperative if they also expected the cooperative to perform the sales function.¹

TABLE 21.--Attitudes of shippers, processors and field buyers toward a producer marketing cooperative operating a central packing facility.

Function	Response		
	For	Against	Not Sure
Shipper	4	5	0
Processor	3	0	1
Field Buyer	2	1	0
Total	9	6	1

¹Performance of the selling function would be a logical extension of producer marketing control if central packing were adopted. See Chapter 5, pages 107-109 for additional detail.

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Merchandising. Shippers, processors and field buyers were asked if a producer marketing cooperative should act as a merchandising agency concerned with product advertising and promotion. Four shippers, 2 processors and 2 field buyers were for a producer cooperative merchandising its products while 4 shippers, 2 processors, and 1 field buyer were against it, and 1 shipper said he was not sure. Those against a producer cooperative acting as a merchandising agency either said that the value of possible benefits would not exceed probable costs or that others (unnamed) in the celery industry could perform the job more efficiently than a cooperative.

Multi-Vegetable. Shipper, processor and field buyer attitudes toward a producer cooperative marketing several vegetable crops are shown below in Table 22. Only 3 of the 16 interviewed were for a multi-vegetable marketing cooperative, 9 were against it and 4 were not sure. Shippers were the greatest opposition to this possible producer cooperative marketing activity. This may be because of its potential threat to their multi-vegetable marketing activities. The shipper, processor and field buyer favoring a multi-vegetable marketing cooperative gave possible ease in procurement as their reason. These attitudes indicate that there would be opposition from shippers, processors and field buyers if the Michigan Celery Promotion Cooperative were to attempt to become a multi-vegetable marketing organization.

Quantity. Should a producer marketing cooperative control its quantity of commodities produced and placed in marketing channels? Most shippers, processors and field buyers interviewed were against a producer marketing cooperative controlling its own product supply. Those against it included 7 shippers, 3 processors and 2 field buyers.

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Field Buyer

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TABLE 22.--Attitudes of shippers, processors and field buyers toward a producer cooperative marketing several vegetable crops.

Function	Response		
	For	Against	Not Sure
Shipper	1	7	1
Processor	1	1	2
Field Buyer	1	1	1
Total	3	9	4

Those for a producer marketing cooperative controlling its product supply included 2 shippers, 1 processor and 1 field buyer. In general, shippers did not believe that supply control was in the producers' interest and felt it was too difficult to get producers to grade out or destroy part of their crops. Several shippers also said that Michigan did not control enough production for supply control to make any difference and that if Michigan marketed less, other areas would just produce and market more. The field buyers and processors were against producer cooperative supply control because they wanted to be able to purchase at lower prices when supplies were abundant. The processor in favor of supply control said the processing market would benefit from supply control activity because celery supply would be restricted on the fresh market to keep that price up and added to the processing market, resulting in a lower price there.

Shipping. Only one field buyer among the shippers, processors and field buyers interviewed could conceive of a situation in which it would be advantageous for a producer marketing cooperative to perform the shipper function. This field buyer said that a cooperative

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might better coordinate transportation for its products than could a number of shippers. Thirteen of the 16 interviewed were against a producer cooperative performing a shipping function. This included 2 processors, 2 field buyers, and all 9 shippers. Two processors did not respond.

Shippers had strong feelings against a cooperative performing a shipper function. One shipper commented that a cooperative performing the shipper function would be "close to socialism." Other comments were that it would make the cooperative too big, it would be too big for them to handle and the cooperative could not do a fully integrated job as efficiently as the shippers were doing it. The two field buyers who were against a producer cooperative performing a shipping function said that it would lessen competition. The processors responding to this question said that marketing costs would be higher if the cooperative performed the shipper function. As noted in the Central Packing section above, the Cooperative might expect vigorous opposition if it attempts to sell its own products.

State Marketing Order

The shippers, processors and field buyers interviewed were asked in a direct question if they knew what a state marketing order was. Their responses are shown below in Table 23. Thirteen of the sixteen interviewed said that they knew what a state marketing order was. The three who were not familiar with a state marketing order were read a general description of a state marketing order which appears in the shipper, processor and field buyer questionnaires shown in Appendix E.

TABLE 23.--Shippers,
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Field Buyer

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TABLE 23.--Shipper, processor and field buyer responses to the question: "Do you know what a state marketing order is?"

Function	Response	
	Yes	No
Shipper	8	1
Processor	2	2
Field Buyer	3	0
Total	13	3

Shippers, because of their close relationship in the marketing process to producers and their potential influence in a marketing order hearing, were asked if in general they would be in favor of a state marketing order for celery. Only 1 shipper interviewed said "Yes," and the other 8 said "No." The shippers against a state marketing order said that it would be unneeded "government interference" and that it would compel all celery producers to abide by its provisions even though some might not want the order.

Processors and field buyers interviewed were not asked if they favored a state celery marketing order because their marketing channel relationships are not as close to producers as those of shippers, and consequently their possible influence on shipper attitudes is not as great.

No shipper, processor or field buyer could vote on a state marketing order for Michigan celery, although they would have opportunity to influence provisions of an order during hearings and if an order were approved, to influence its success or

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failure.¹ Once hearings have been held on a state marketing order, the document's various provisions have been written, and it has met the approval of the State Director of Agriculture, it would then proceed to a vote of the producers. A state marketing order must be voted on in its entirety. To determine shipper, processor and field buyer attitudes toward inclusion of five possible provisions, they were asked how they would vote on each of these five provisions.

Information. The first provision presented for possible inclusion in a state marketing order was one that would permit developing and dissemination of industry economic information. Shipper, processor and field buyer attitudes toward inclusion of this provision in a state celery marketing order are shown below in Table 24. Nine of the 16 interviewed were for including this provision in an order, 4 were against it, 2 were not sure and 1 had no comment. Those opposed to this provision said that developing and dissemination of industry economic information was adequately handled at present by other agencies such as the Michigan Celery Promotion Cooperative and the Market News Service.

Quality. The second state marketing order provision toward which shippers, processors and field buyers were asked to indicate their attitudes was one that would permit quality control in order to establish uniform grades and standards. Their attitudes toward inclusion of this provision are shown below in Table 25. This provision was opposed by six shippers on the grounds that quality was

¹Processors would be permitted to vote on the order only if certain supply information provisions were included and only if the processors were located in Michigan. Since all celery processors are located outside the state, they would not be permitted to vote.

TABLE 24.--Att
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Function

Shipper
Processor
Field Buyer

Total

TABLE 25.--Att
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Shipper
Processor
Field Buyer

Total

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TABLE 24.--Attitudes of shippers, processors and field buyers toward a state marketing order for Michigan celery including a provision that would permit developing and dissemination of industry economic information.

Function	Response			
	For	Against	Not Sure	No Comment
Shipper	5	3	1	0
Processor	2	1	0	1
Field Buyer	2	0	1	0
Total	9	4	2	1

TABLE 25.--Attitudes of shippers, processors and field buyers toward a state marketing order for Michigan celery including a provision that would permit quality control in order to establish uniform grades and standards.

Function	Response			
	For	Against	Not Sure	No Comment
Shipper	3	6	0	0
Processor	2	0	1	1
Field Buyer	3	0	0	0
Total	8	6	1	1

already being adequately controlled by either the Michigan Celery Promotion Cooperative or the producers themselves. All field buyers interviewed favored inclusion of this provision because of their need to purchase uniform quality celery to meet consumer demand.

Advertising. Attitudes of shippers, processors and field buyers toward a state marketing order provision that would permit collection and use of advertising and promotion funds are shown below in Table 26.

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Seven shippers opposed this provision, giving one of the following reasons: not in favor of any celery advertising, shippers are adequately performing the activity, or the Cooperative is adequately performing this activity. All three field buyers interviewed were for this provision, apparently because they expected the advertising to increase demand for celery and not cost them anything directly.

TABLE 26.--Attitudes of shippers, processors and field buyers toward a state marketing order for Michigan celery including a provision that would permit collection and use of advertising and promotion funds.

Function	Response			
	For	Against	Not Sure	No Comment
Shipper	1	7	1	0
Processor	1	0	0	3
Field Buyer	3	0	0	0
Total	5	7	1	3

Research and Market Development. The majority of the shippers, processors and field buyers interviewed were for a state celery marketing order provision that would permit collection and use of research and market development funds. This majority consisted of 5 shippers, 2 processors and 3 field buyers. Four shippers were against inclusion of this provision, one processor said its inclusion was up to the producers, and another processor made no comment. This provision received the most support among the provisions upon which shippers, processors and field buyers were asked to vote. Reasons given for opposing this provision were that these activities were already being conducted by Michigan State University and (unnamed) others.

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Quantity. The last state marketing order provision shippers, processors and field buyers were asked to vote on was also the least favored. This provision was one that would permit quantity control for the regulation of quantities produced and placed in marketing channels. The inclusion of this provision in a state celery marketing order was favored by one processor and one field buyer. All shippers interviewed opposed a supply control provision in a state marketing order for Michigan celery as did one processor and two field buyers. One processor said this provision's inclusion should be up to producers, and another processor made no comment. Shippers' reasons for opposing this provision were that controlling only Michigan's celery supply would not accomplish anything as it was not a large enough proportion of the United States celery supply and the provision would be too difficult to administer. The field buyers voting against this provision said that its inclusion would give producers too much control. These attitudes indicate that a quantity control provision in a proposed state marketing order for Michigan celery would be opposed in a hearing by celery shippers, processors, and field buyers.

The Future and New Celery Packages and Products

Shippers, processors and field buyers were asked, "Does Michigan need a new or improved package or product to be competitive with other areas?" Their responses to this question are shown below in Table 27. Two shippers and one field buyer recognized a need in this area, and the others either said they did not know if Michigan needed a new or improved package or product to be competitive, or that the present products and packages were competitive. One shipper

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said that the public could afford to buy processed celery and that new processed products and convenience items were needed to enhance Michigan's competitive position. The other shipper, recognizing a need to improve Michigan celery's competitive position, said that new varieties should be developed to improve celery quality. He also said, as did one field buyer, that a new package to replace the wire-bound crate was needed in order to reduce damage to celery during handling. This field buyer also said that "sticks" of celery with cheese spread on them and sleeving or packaging larger individual celery stalks would both have consumer appeal.

TABLE 27.--Responses of shippers, processors and field buyers to the question: "Does Michigan need a new or improved package or product to be competitive with other areas?"

Function	Response		
	Yes	No	Do Not Know
Shipper	2	7	0
Processor	0	3	1
Field Buyer	1	2	0
Total	3	12	1

To determine their attitudes toward the celery industry's future, shippers, processors and field buyers were asked, "Over the next ten years, what are the major changes that you expect to see in the celery industry?" The most frequent comment was that rising labor costs would lead to a mechanized celery harvest. Shippers in particular said that new celery packages and products, in the next ten years, would be related to increasing harvest mechanization. Specific shipper expectations were for central packing to improve celery quality and

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uniformity, prepackaging of most large-sized celery, a fully mechanized harvest in which celery stalks would be cut off above the butt and packed and sold by the pound, and a dehydrated celery product. Processors suggested possible changes in the forms in which they would use processing celery over the next ten years, such as frozen celery either sliced or diced, dehydrated celery, a puffed processed celery product, and freeze dried celery.

A trend to fewer and larger celery farms was expected over the next ten years by the shippers, but there was no agreement whether Michigan's celery acreage and production would increase or decline with that change. Two shippers also said there would be a need for increased technical competence in producing celery.

Three possible changes from the current marketing pattern were noted by shippers. These were: a continuing movement away from consignment, more contracting with processors, and increased volume sold to chainstores. These three changes in the marketing pattern indicate a definite marketing coordination role for a producer organization.

Summary of Grower, Shipper, Processor and Field Buyer
Attitudes Toward Alternative
Marketing Organizations
and Practices

Michigan Celery Promotion Cooperative members held generally favorable attitudes toward the organization and supported Cooperative marketing activities. More than half the celery shippers, processors and field buyers also had favorable attitudes toward a producer marketing cooperative from the point of view of the celery industry. However, from the point of view of their own businesses, only half the shippers, processors and field buyers had favorable

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attitudes toward a producer marketing cooperative. This indicates possible resistance to cooperative marketing ventures in which shippers, processors and field buyers might be involved.

A Michigan state celery marketing order would be an organizational technique that could be used to coordinate Michigan celery marketing activities. It need not necessarily replace the Cooperative and might very well function with full coordination between the two groups. Only producers would be permitted to vote on a state marketing order, and in 1965, 78 percent of Cooperative producers responding to a question on the need for a state marketing order thought that an order for celery was needed. However, shippers, processors and field buyers could participate in hearings held prior to the State Director of Agriculture's decision as to whether or not the order would be voted upon and would have opportunity to influence that decision and the provisions included. Eight of the nine shippers interviewed were against a state marketing order for celery, saying that it would be unneeded "government interference" and would compel all Michigan celery producers to abide by its provisions. Based upon these attitudes, Michigan celery producers could pass a state marketing order but would have difficulty including provisions that could influence a shipper's business.

Based upon the general attitudes of growers, shippers, processors and field buyers toward a producer marketing cooperative and a state marketing order, marketing activities of a cooperative marketing organization would be preferred. Their attitudes toward specific marketing activities are summarized in the following text.

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Quality

The Cooperative has conducted a quality improvement and inspection program with which the membership has been satisfied. Seventy-five percent said the program had been "just right" in its enforcement, and 87 percent said the quality standards should "remain the same." Shippers, processors and field buyers recognized these quality improvements and favored quality control by a cooperative rather than a state marketing order.

Shippers said that "good quality" celery can command \$.50 per crate above the going price, and field buyers were willing to pay \$.50 to \$1.00 per crate more for fancy packed, quality celery. Processors also were interested in purchasing uniform quality products. These attitudes indicate Michigan celery industry acceptance of quality improvement by a producer cooperative.

Central Packing

Central packing would be a technique whereby celery producers could pack uniform products meeting specified quality standards. In 1963, 66 percent of the Cooperative members were not interested in having their celery centrally packed. However, by 1967 the Cooperative had begun to centrally pack some celery. This change was a recognition of product uniformity obtainable by central packing and in response to difficulties experienced by producers in obtaining packing labor.

Processors and field buyers would welcome central packing by a celery producer cooperative because of expected increases in quality, pack uniformity, and more efficient preprocessing. Five shippers were opposed to a cooperative central packing celery because they

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said the cooperative's packing costs would be higher than those of producers.

The combination of attitudes toward quality and central packing indicate that central packing would be acceptable to growers, processors and field buyers. Shippers, however, would be opposed to central packing but would favor quality control by a producer cooperative.

Multi-Vegetable

Shippers and field buyers both said that approximately one-half of their celery volume moved as mixed loads, but processors using Michigan celery said that availability of mixed vegetables would be of little interest to them. Because mixed loads of vegetables are an important part of shipper business, the shippers were against a producer cooperative marketing several vegetable crops and replacing their performance of this role. This shipper opposition could pose mixed vegetable supply acquisition and outlet difficulties for the Cooperative initially, depending upon the degree of control the Cooperative wanted to maintain over crops other than celery.

Shipping

A multi-vegetable marketing cooperative which centrally packs its produce would be in a position to perform its own sales function. However, present shippers, processors and field buyers of Michigan celery are generally opposed to a marketing cooperative making its own sales. They did not think that a cooperative could perform the task as efficiently as present shippers and were also opposed to it because it would lessen competition. These attitudes indicate that

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the Cooperative would face considerable shipper opposition if it were to sell its own products.

Merchandising

Most shippers, processors and field buyers of Michigan celery said that general advertising would be the most effective in increasing demand for Michigan celery. They did not favor collection and use of funds for advertising and promotion through a state marketing order, but half of them did approve of a producer marketing cooperative acting as its own merchandising agency. As noted in The Organization and Operations of the Michigan Celery Promotion Cooperative section of Chapter 3, the Michigan Celery Promotion Cooperative in 1967 had hired an agency to merchandise its products. However, all Michigan celery producers might share more equally in the benefits and costs of an advertising and promotion program coordinated through a state marketing order rather than through a marketing cooperative advertising its own brand. These attitudes indicate a definite increased demand potential from promoting Michigan celery rather than promoting many individual brands.

Pricing

During 1963 through 1965, approximately 66 percent of the Michigan Celery Promotion Cooperative members said the organization's price program was "effective." These "pricing" activities were generally favored by Michigan celery shippers, processors and field buyers. They appreciated the price certainty and stability the organization provided for Michigan celery prices. Shipper, processor and field buyer attitudes toward cooperative pricing are much more favorable than

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anticipated due to their general satisfaction with Michigan Celery Promotion Cooperative pricing activity. These attitudes indicate that the Cooperative could possibly pursue other price practices with similar receptiveness by the Michigan celery industry.

Quantity

The Michigan Celery Promotion Cooperative's members have taken some steps--"cutting holidays" and quality control--to regulate their supply. Opportunity remains for additional coordination of supply, especially if the organization adopts central packing. Effective control over the Cooperative's pricing activity indicates a need for quantity control in addition to nonprice techniques. Supply control can be achieved through the producers, and their attitudes toward their present quantity regulating activities indicate a willingness to adopt a more rigorous form of supply control.

Shippers, processors and field buyers do not favor quantity control through a producer cooperative or a state marketing order. They also point out that individually Michigan lacks sufficient volume to greatly influence total United States celery supply.

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CHAPTER VII

SUMMARY AND CONCLUSIONS

Looking back to the Michigan Celery Promotion Cooperative's organizational beginning and following its development to the present, there has been an increasing sophistication in the type of organization and marketing activities pursued by Michigan celery producers. The role of the Cooperative Extension Service in bringing the several Michigan celery groups together and assisting them to mutually seek solutions to their problems was a crucial factor to this organization's development. Organizationally, they have progressed from a price information committee, to a bargaining association, to the present marketing cooperative. The group has also progressed from voluntary quality improvement to a mandatory quality inspection program, and from disseminating celery price information obtained from shipping points outside of Michigan to administratively determining their own product prices. Quality improvement and quality control efforts provided a basis upon which the organization was able to develop a more comprehensive marketing program. To extend its market control the Cooperative, lacking market contacts, brought most celery shippers under its control by signing contracts with them, designating them as exclusive sales agents for the organization's celery.¹ Through these contracts, the Cooperative was also able to extend its "control" over price into the market place. The Michigan Celery Promotion Cooperative administratively determines the minimum f.o.b. prices that these shippers

¹See Appendix B for a copy of the contract.

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may charge for the Michigan celery that they sell for the Cooperative.

The weekly price predictive equations for Cooperative celery developed in Chapter 4 provide guidelines that the Cooperative's Price Committee may use in pricing their celery. The equations establish pricing guidelines only, as they do not adequately account for such short run "shock" factors as a railroad strike or major city riot which both occurred, for example, during the 1967 Michigan Celery Promotion Cooperative marketing season. Furthermore, the equations relate to an average price per crate of $2\frac{1}{2}$ dozen size celery each week, while f.o.b. celery prices in Michigan and other shipping points may vary each market day of a week.

The Cooperative may estimate the effect of its possible supply control activities upon its fresh market prices for the coming week by use of the pricing equations which were developed in Chapter 4. However, the equations do not indicate what the processing market prices would be, as data on processing celery quantities and prices from sources other than the Michigan Celery Promotion Cooperative were unavailable. Utilizing these pricing equations and its knowledge of harvesting, packing, and marketing costs, the Cooperative can estimate net returns from various fresh market quantities it might harvest, prior to their harvest, each week of the season.

Adequate price-quantity information for celery sold to the processing market does not permit a determination of marginal returns from possible price discrimination between the fresh and processing markets. This practice of price discrimination would be difficult for the Cooperative to maintain due to the difficulty that would be

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experienced in keeping the markets segmented. When the price of a product in one segment differs from the price in another segment, buyers are drawn toward the market segment with the lower price and may purchase in that market and resell in the market with the higher price, unless there is some barrier to keep the two segments separated.

In developing the price predictive equations, many of the factors that the Price Committee had considered in the past in administratively determining their prices were tested to determine their statistical significance as related to estimating price. The price analysis presented in Chapter 4 indicated that Santa Maria, California celery prices on Friday of week t "explained" more of the Michigan Celery Promotion Cooperative's price variation than did Salinas prices for the first seven weeks of the Cooperative's marketing season, and that the Salinas price "explained" more of the price variation from the eighth week to the season's completion. This determination, in conjunction with the usual beginning of New York celery marketing by the eighth week of the Cooperative's season, led to a division of the season between the seventh and eighth weeks. A price predictive equation was developed for the first seven weeks and another for the eighth week to the season's completion.

The pricing equations were tested during the 1967 Michigan Celery Promotion Cooperative's marketing season and, except for the third and fourth weeks, predicted the price quite accurately.¹ The third and fourth weeks were respectively marked by a national railroad strike which affected California celery shipments and a riot in Detroit which

¹See Chapter 4 for additional detail.

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closed the city's wholesale market. The equations did a better job of predicting the direction of price change than of predicting the actual average weekly price per crate of $2\frac{1}{2}$ dozen size celery. Regression coefficients for these equations were updated for each of the factors by including 1967 data except for the third and fourth weeks of the 1967 season. These equations, whose coefficients are based upon 1963 through 1967 data, can be used by the Cooperative during the 1968 marketing season as they administratively determine their prices. Upon completion of the 1968 marketing season, the demand and price structure should be re-examined to determine if the relevant factors are being considered and in their proper measure. If the structure has remained unchanged, then the equations might again be used the following year or slightly improved through updating the coefficients by including data for each of the variables for the past year.

Problems initially confronting this group of producers and leading to development of this organization have either been resolved or are being met in a manner satisfactory to the membership. The group may now be tempted to rest on its laurels, but this would only provide an opportunity for another area, or a firm in the Michigan area, to take the initiative in meeting the challenge of a changing market. If the Cooperative is to continue to maintain its market position, grow, and prosper, the group will need to adopt new organizational and marketing practices. A number of the more promising organizational and marketing practice alternatives were presented in Chapter 5, and in Chapter 6 attitudes of those in the Michigan celery industry toward selected alternatives were considered. These attitudes are

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viewed as facilitating or inhibiting alternatives recommended below to the Michigan Celery Promotion Cooperative as they seek to maintain and improve their market position.

The Cooperative--Recommended Action

Based upon the analyses contained in the foregoing chapters, a number of recommendations are made below concerning the Michigan Celery Promotion Cooperative. These recommendations are categorized into those that could be implemented in the short run (within the next season) and in the long run (at least two to five years).

Short Run

Price Predictive Equations. The attitudes of Michigan celery producers, shippers, field buyers, and processors toward a producer marketing cooperative pricing its products were quite favorable. They attributed this to the price certainty provided by the Michigan Celery Promotion Cooperative's administered prices. By using the price predictive equations developed in Chapter 4 of this text, the Price Committee would have additional quantitative information that they could use in arriving at product prices throughout the season. By using these equations as discussed in Chapter 4, the Price Committee would be able to estimate the influence of the Cooperative's celery supply on its price and more accurately determine what supply control action they might wish to take.

Full Coinage Range. The price per crate of fresh celery f.o.b. shipping point is generally quoted to the nearest quarter of a dollar at all shipping points. This practice has apparently become a custom as celery supply and demand situations do not always justify

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price changes to the nearest quarter of a dollar, and buyers are interested in a delivered price, not an f.o.b. shipping point price. For the Cooperative to change to quoting prices using a full coinage range would permit a more complete reflection of its celery demand and supply conditions. Adoption of this practice could prove advantageous to the Cooperative in meeting the competition's delivered prices to a possible buyer. Since buyers do consider delivered prices and not f.o.b. prices alone, the Michigan Celery Promotion Cooperative would experience little difficulty in making a change to full coinage, per-crate pricing.

Discounts. Offering discounts would be another marketing practice that could be easily adopted by the Cooperative to its advantage. Volume discounts could improve the firm's competitive position among its larger and repetitive purchasers. These discounts could be offered on full truck loads of celery and would be justified on the basis of selling cost savings and assurance of stable volume. The importance of mixed loads of vegetables to the Michigan celery industry as revealed in the attitude survey (over 50 percent of Michigan celery was sold in mixed loads) indicates that discounts based on cumulative volume during the season may be preferable to straight volume discounts. Cumulative volume discounts would also be justified on the basis of selling cost savings and assurance of stable volume for the Cooperative.

A discount could also be granted to customers making purchases in an off-peak sales period, either weekly or seasonally. This discount would also be cost justified and could be of considerable assistance to the firm as it seeks to sell its perishable products during the marketing season.

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Prepackaged Products. The expressed willingness of field buyers to pay a premium (\$.50 to \$1.00 per crate) for prepackaged, large-sized stalks of fresh celery is an opportunity in waiting for celery marketing groups. A trend to prepackaged fresh produce in retail stores is very much in evidence. The Cooperative has explored the costs associated with this product and has determined that it would be a worthwhile venture. However, they must take the initiative or they may find themselves attempting to capture a market that has already been taken by their competition.

New prepackaged, fresh celery products merit continuing consideration if changing tastes and preferences of consumers are to be met. The possibilities of new technologies in harvesting and packaging celery appear to be nearing commercial feasibility. If adopted, these technologies may permit marketing of prepackaged fresh celery petioles by weight rather than the current practice of marketing celery as stalks.

Advertise Michigan Celery. Shippers, field buyers and processors indicated that the most effective advertising approach to increase total demand for Michigan celery would be general advertising. However present brand advertising by the Cooperative would likely have the best results. Advertising of individual brands by many shippers merits reconsideration in view of the attitudes toward their effectiveness which were expressed by shippers, field buyers and processors. It was generally recognized by these shippers, field buyers, and processors that celery would have to be "good quality" before an advertising program could be beneficial (returns greater than their costs).

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The Cooperative's own label will be of assistance to that organization as it seeks to differentiate its products from those of its competitors. For this approach to be effective, it must be carried out in all product lines including celery hearts.

Central Packing. Central packing is recommended as a logical organizational-administrative focal point around which may be centered a number of activities. Many of these recommendations could be instituted without central packing, but it is viewed as necessitating and facilitating the recommendations which are particularly germane to increasing the effectiveness of the Cooperative's marketing program.

In the aggregate, Michigan celery shippers, processors and field buyers interviewed were opposed to central packing by a producer cooperative.¹ Nevertheless, the Michigan Celery Promotion Cooperative is beginning to establish "central" packing facilities.² Adopting central packing would permit a higher degree of quality control, improve supply control and, as a consequence, increase uniformity of pack. The attitudes of Michigan celery shippers, processors and field buyers toward celery quality indicate that continued quality improvement efforts would be recognized by the trade. It is assumed that improved quality would accordingly be recognized by consumers.

The Cooperative has had some experience in transporting celery for preprocessing from most of the Western Michigan celery area to its plant and is familiar with possible transportation costs that would be associated with central packing. Additional consideration

¹See Chapter 6, page 150 for additional detail.

²They plan to establish packing facilities at several locations in the Western Michigan celery producing area.

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should be given by the Cooperative to the possible economies and advantages of a single central packing plant organized as an integral part of the Cooperative. This plant would improve coordination of the firm's total marketing effort. It would facilitate diversion of product supply to crate, heart or processing uses as compared with the diffuse manner in which these activities are currently conducted. An operation such as this could also provide sufficient volume from which to select and pack an extra high quality fresh celery that could be priced above the usual quality, as mentioned in the Prepackaged Products section above. The capability to divert celery to a fresh or processing line and maintain a higher level of control over inventories would both reduce risk and increase the organization's flexibility. The pricing equations presented in Chapter 4 of this text would provide a quantitative estimate of price effects from controlling supply.

To increase the utilization of central packing facilities and a labor force, other vegetable crops could be handled. Approximately one-half of Cooperative members produce other vegetables in addition to celery, and the organization could be expanded into a multi-vegetable organization. The length of season that the facilities could be used could be extended by a number of crops (carrots, onions and potatoes) that are produced in the vicinity. A multi-vegetable organization would permit offering mixed loads, and shippers have indicated that approximately 50 percent of their celery sales moved in mixed loads. Shipper attitudes toward a multi-vegetable producer marketing cooperative are not favorable and would inhibit the Michigan Celery Promotion Cooperative if it were to attempt such an expansion activity.

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Efficient operation of a central packing plant can best be realized by scheduling a product flow for delivery to the operation at the time and in the amount desired. Contracts with the producers can insure that this coordination would be achieved by stipulating acreage or production for delivery or harvest at a specified period during the season and/or by giving fieldmen additional authority in working with producers. These contracts would also assist the Cooperative in meeting supply contract commitments that it may develop. The limited storage life of fresh celery makes it imperative that these contracts be rigorous enough to curtail supply if necessary to achieve desired net returns.

Establishment of a multi-vegetable organization having central packing facilities would permit the organization to bring the shipping function more directly under its control. All related marketing activities would be fully under the organization's supervision, and their actual performance of the selling function is a logical extension of marketing control. Shippers' attitudes indicate that they would particularly resist this expansion of Cooperative market control as the Cooperative would be performing what had previously been their role and a source of income--selling. The Cooperative could hire salesmen to sell directly for the organization; possible salesmen include present shippers who have existing market contacts.

Before adopting a central packing operation, additional research should be conducted to determine the optimum location and quantify the economic feasibility of such an operation.

State or Federal Marketing Order. A state or federal marketing order could be used as a technique to coordinate Michigan celery

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marketing activities. This could increase the effectiveness of the Cooperative's marketing activities by permitting the possibility of quality and quantity controls for all Michigan celery. Quantity control under a state marketing order would likely be vigorously opposed by Michigan celery shippers, processors, and field buyers.¹ However, a more completely coordinated collection and expenditure of funds for advertising, promotion, and research would be acceptable to Michigan celery shippers, processors and field buyers and could be included in either a state or federal marketing order.

On the whole, a marketing order for Michigan celery would add little to the Michigan Celery Promotion Cooperative's marketing program as long as it controls a substantial proportion of Michigan's celery supply. The Cooperative's marketing program has developed well beyond what would be acceptable to all the Michigan celery industry under a state marketing order.¹ The Cooperative's advantage currently lies with its ability to control harvest, grading, and quantities marketed. The organization controls sufficient volume that it can supply large lots of fresh and processing celery which many buyers demand. Non-Cooperative Michigan celery producers individually have relatively small quantities, and these are generally available only during a portion of the Michigan marketing season. These non-Cooperative producers may be able to market to smaller outlets or fill short-run supply gaps but individually find it difficult to move beyond this. However, the Cooperative's present production control (75 percent of fresh celery and 60 percent of processed celery in

¹Based upon shipper, processor and field buyer attitudes toward possible state market order provisions as noted in Chapter 6.

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1966) has declined from the 90 percent of Michigan celery production controlled in 1963. The Cooperative's effectiveness could be severely hampered by loss of one or two of its larger members. For these reasons, the Michigan Celery Promotion Cooperative would benefit from a marketing order that would coordinate the marketing activities of the Michigan celery industry.

Long Run

Growth to Nearby States. The Cooperative in the long run could consider expanding its organization to include celery producers outside Michigan. Nearby producing areas in Ohio and New York hold the most promise for this expansion activity. The Cooperative could gain additional control of the summer celery supply and could provide members two market outlets (fresh and processing), reduced risk through improved market information, an enlarged price pool, and quality improvement assistance. These smaller celery production areas might also appreciate an opportunity to broaden their market outlets and reduce their risk by affiliating with a larger marketing organization.

Broadening the organization's membership and marketing activities to include other vegetable crops was recommended above relative to central packing. Growth into this recommended multi-vegetable marketing organization need not be limited to Michigan producers.

Year-Around Marketing Organization. In the long run, a merger of Michigan and Florida cooperative celery marketing activities might be achieved. No attempt will be made here to detail how this merger could be accomplished, but possibilities include formation of a new

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single organization, organization of a super cooperative with present local cooperatives retaining considerable autonomy, or arrangement through contractual agreement concerning only celery marketing activities. It is also possible that a federal celery marketing order could be used to facilitate a merger of celery marketing activities for these two cooperative organizations. The use of a federal order would not be necessary to an organizational merger or its operation. However, assuming attitudes of the Michigan celery industry toward a state marketing order, as presented in Chapter 6, have at least some transferability to a federal order, a merger without a federal order could likely be achieved most readily. The educational program to merge the two cooperatives would be facilitated by the organizational similarities between the two groups.¹

Principal advantages of merging Michigan and Florida celery cooperative marketing activities would be those attainable through a year-around marketing program. Possible economies of scale in advertising, promotion and actual selling activities could be achieved by combining programs. It would not be necessary to remind buyers each season that celery from the respective areas would be available as the group's promotion could feature year-around product availability. Fresh and processing buyers would not need to re-establish contacts in Florida and Michigan producing areas as harvest seasons shifted since this contact and associated negotiations would be with a single organization selling celery from both areas. Salesmen could be hired by this firm to assist in selling celery the

¹ See Chapter 2, pages 18-21 for a discussion of similarities between the Michigan and Florida celery cooperatives and Chapter 5, pages 91-94 and 99 for additional detail concerning this recommendation.

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year around rather than seasonally for each area. Year-around supply contracts could be made by this firm with fresh and processing buyers which would reduce risk for purchasers and provide assurance of a market outlet for the producers.

The possibilities for expanding a merged Florida-Michigan celery marketing cooperative into a multi-vegetable marketing organization are also recommended as a means of long-run growth. On the whole, Michigan celery shippers, processors and field buyers generally did not favor expansion of producer cooperative marketing efforts to include a number of vegetables. However, an advantage of such an expansion to the organization includes the capability of offering mixed loads year around, for which there is an apparent market demand.¹

There are a number of disadvantages or potential problems relative to a merger of Florida and Michigan celery cooperative marketing activities that merit discussion. The principal problem is the difference in celery quantity produced by the two areas. Florida produces celery on 11,000 acres and Michigan on 2,000 acres. Michigan lacks an adequate supply of summer celery to meet commitments that may be opened by the larger Florida celery market. However, if other north central and eastern celery producers joined the organization, they, together with Michigan, would produce celery on approximately one-half the acreage on which Florida growers produce celery, which would increase the feasibility of the organization. The organization, at times, would also have problems of short supply as northern and southern harvest seasons have not historically had sufficient harvest

¹See Chapter 2, page 17 and Chapter 6, page 139 for additional detail.

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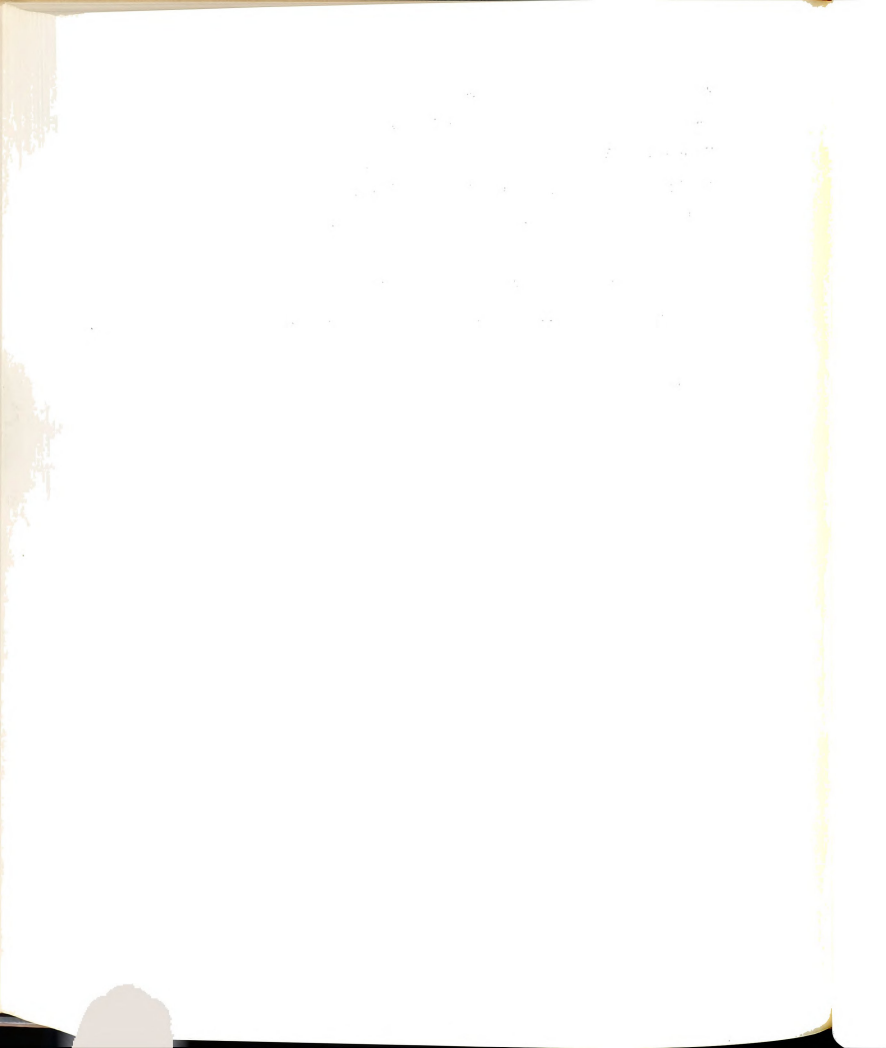
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overlap to meet probable supply commitments. Increased production and storage for short periods would be possible and could overcome these difficulties. However, whether celery producers outside Michigan and Florida, especially in New York, New Jersey and Ohio, would join this organization was not determined.

Michigan and other northern celery producers might be reluctant to form a year-around marketing organization due to Florida's possible organizational dominance. This dominance could result from Florida's nine-month celery marketing season as compared to Michigan's three-month marketing season. Techniques to arrive at a mutually satisfactory total marketing effort would need to be developed.

Many of the recommendations presented above depend upon the long run outlook for Michigan celery production, particularly relative to harvest mechanization. There is a need for additional research in these areas and into quantification of the economics of central packing.

The third chapter is of particular relevance to other specialized commodity groups as they seek to develop their marketing activities. The study also emphasizes the importance of a growth orientation for continuing success and service.



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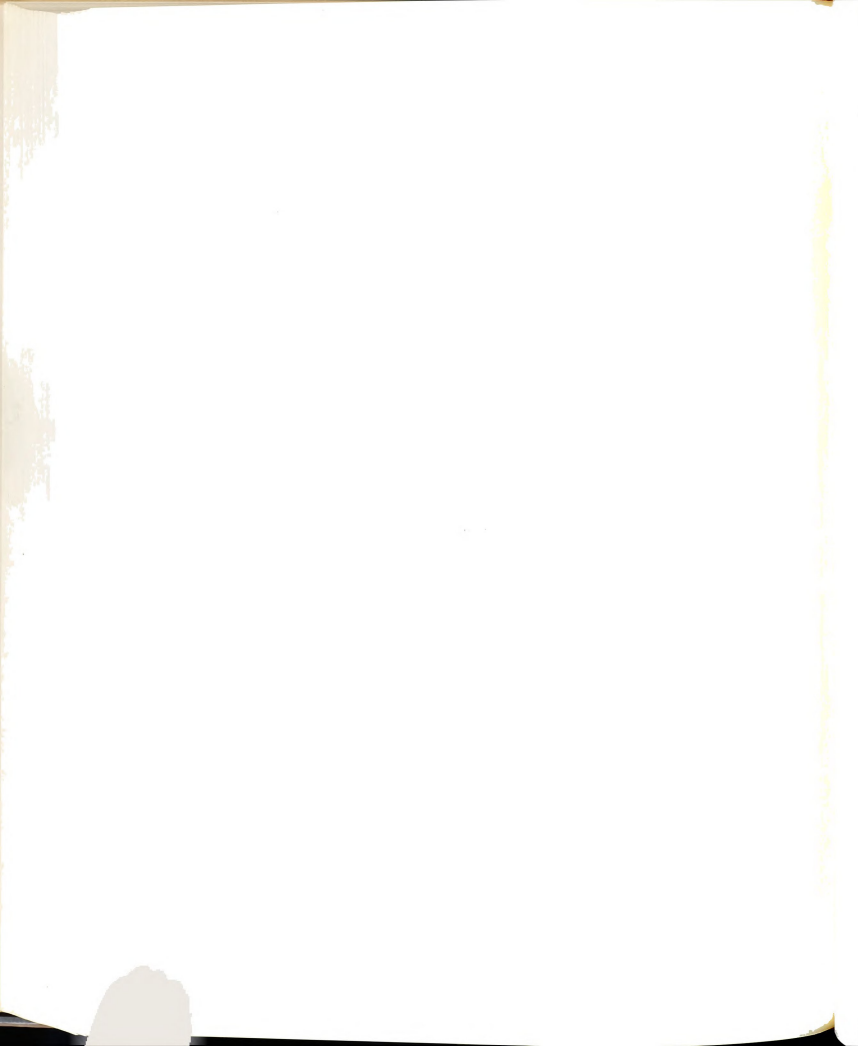
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APPENDIX A



APPENDIX TABLE 1.--United States, California, Michigan and New York celery production during the Michigan marketing season,^a average of 1963-1966.

Within Year Season	California Production (1,000 Cwt.)	Michigan Production (1,000 Cwt.)	New York Production (1,000 Cwt.)	United States ^b Production ^b (1,000 Cwt.)
Early Summer	1,238	421	d	1,803
Late Summer	c	c	700	931
Early Fall	c	333	c	477
Late Fall	368	c	c	368
Total	1,606	754	700	3,579

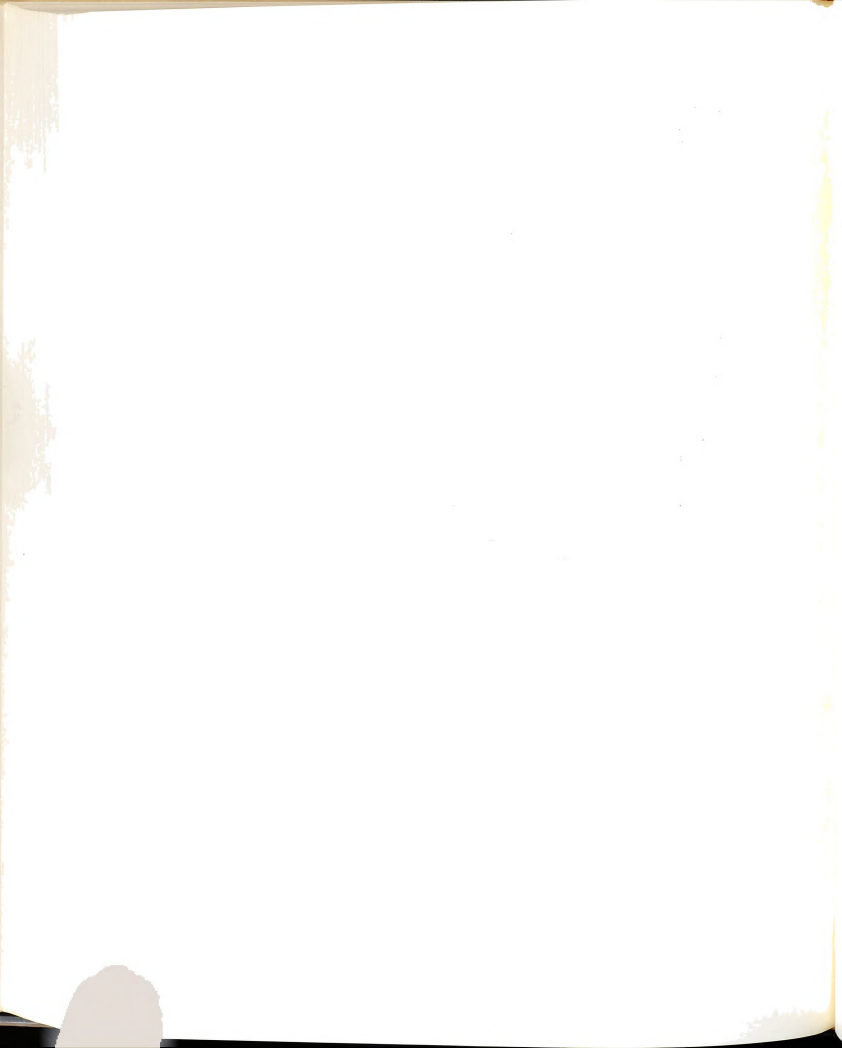
^aThe within-season designations of Early Summer, Late Summer, Early Fall and one-eighth of Late Fall production are assumed to correspond to the Michigan marketing season. California was the only producer listed in the Late Fall period and made shipments during the entire period--October through January. Michigan's marketing season ends after the first two weeks of October, hence the inclusion of one-eighth of Late Fall production. The season designations and method of classifying production used by the U. S. Department of Agriculture gives the appearance of greater seasonal variation than actually occurs as noted in Table 2 of the text.

^bIncludes production from states other than the three shown. These are Massachusetts, Ohio, New Jersey, Colorado, Washington and Pennsylvania.

^cProduction begun in a period above carried into this period.

^dNo marketed production was listed in this period.

Source: (59)



APPENDIX TABLE 2.--Celery unloads in 41 cities by months, averaged over 1963-1966.

Month	Rail and Truck Unloads of Celery (Cars and Carlot Equivalents ^a)
January	2,046
February	1,835
March	2,157
April	2,100
May	1,882
June	1,842
July	1,892
August	1,693
September	1,782
October	1,827
November	2,352
December	2,281

^aA carlot of celery is 600 16-inch crates of approximately 60 pounds each.

Source: (3)

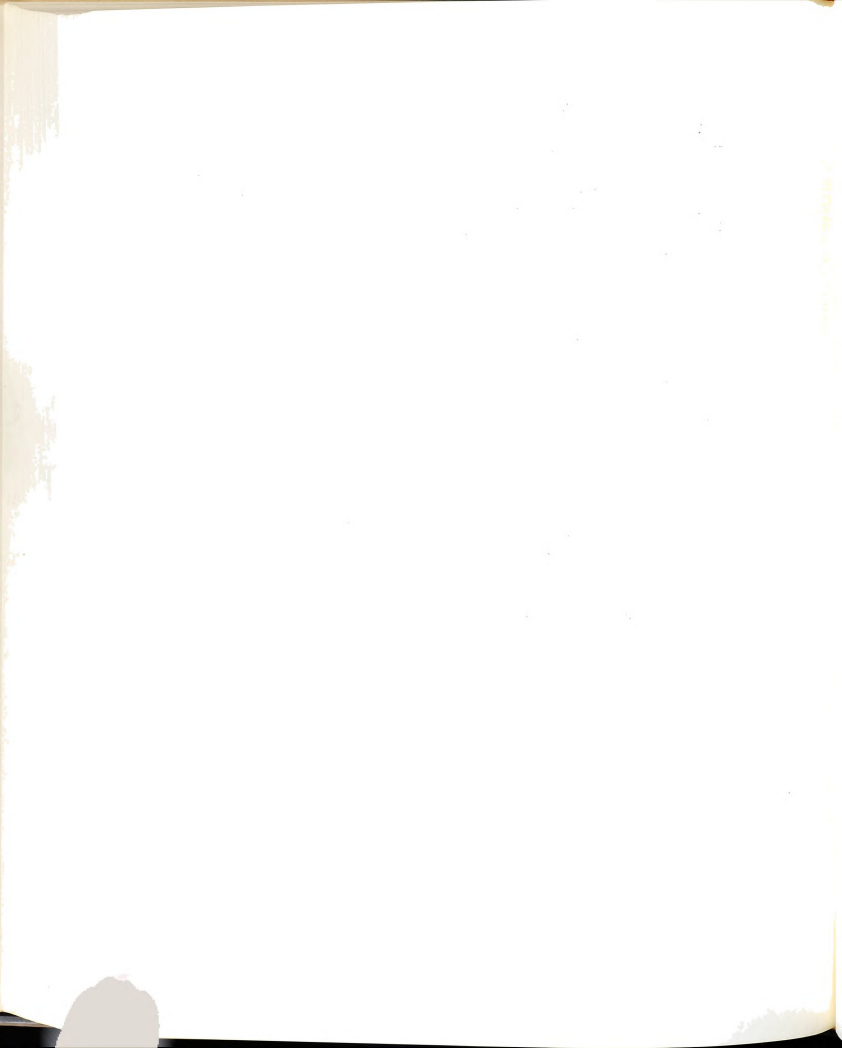


APPENDIX TABLE 3.--Annual United States celery production, 1947-1966.

Year	Production (1,000 Cwt.)	Unmarketed Production (1,000 Cwt.)	Marketed Production (1,000 Cwt.)
1947	11,332	0	11,332
1948	12,542	557	11,985
1949	12,678	231	12,447
1950	13,376	257	13,119
1951	14,091	124	13,967
1952	14,118	68	14,050
1953	14,335	183	14,152
1954	15,126	405	14,721
1955	15,304	66	15,238
1956	16,232	859	15,373
1957	15,137	0	15,137
1958	14,260	0	14,260
1959	15,613	825	14,788
1960 ^a	15,167	0	15,167
1961	14,973	136	14,837
1962	14,129	0	14,129
1963	14,403	253	14,150
1964	14,073	183	13,890
1965	14,265	134	14,131
1966	14,573	297	14,276

^aBeginning 1960, includes Hawaii.

Source: (2)



APPENDIX TABLE 4.--Michigan Celery Promotion Cooperative actual and estimated average f.o.b. shipping point price per crate of 2½ size celery by week of their marketing season, 1963-1967.^a

Week of M.C.P.C. Marketing Season	1963		1964		1965		1966		1967	
	P	P̂	P	P̂	P	P̂	P	P̂	P	P̂
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
1	3.08	3.62	4.00	3.97	4.00	3.84	4.25	4.17	5.00	5.06
2	2.79	b	4.00	3.70	4.00	3.57	4.42	4.64	4.42	4.54
3	2.33	2.35	3.13	3.08	3.58	3.42	4.50	4.67	4.00	3.37
4	2.00	2.15	2.42	2.51	2.63	3.01	4.50	4.34	4.21	3.26
5	2.00	2.04	2.25	2.22	2.50	2.40	4.50	4.43	4.25	3.95
6	2.00	2.03	2.25	2.17	2.58	2.33	4.50	4.46	4.25	4.33
7	2.00	1.96	2.67	2.63	2.75	3.14	4.38	4.36	3.58	4.17
8	2.00	2.30	3.10	2.95	2.38	2.80	3.88	3.63	2.96	2.96
9	2.00	2.02	3.10	2.01	2.25	2.33	3.75	3.48	2.75	2.76
10	2.25	2.30	3.10	3.04	2.25	2.29	3.75	3.51	3.00	2.72
11	2.25	2.19	3.23	2.88	2.70	2.55	3.75	3.38	4.13	3.48
12	2.42	2.65	3.42	3.35	3.00	3.13	3.63	3.49	3.63	3.73
13	2.50	2.44	3.03	3.20	2.75	2.93	3.17	3.37	3.04	2.95
14	2.50	2.11	2.58	2.45	2.50	2.80	2.75	3.06	3.00	3.18
15	2.45	2.14	2.50	2.47	2.50	2.70	2.75	3.34	3.38	3.35
16	2.50	2.43	c		c		c		3.83	3.79

^aEstimated prices for weeks 1 through 7 were computed using the following regression equation, whose coefficients were computed using 1963-1966 data:

$$P_{1mt}+1 = 62.7915 - 0.0019Q_m + 0.9680P_{mft}$$

Estimated prices for week 8 to the end of the marketing season were computed using the following regression equation, whose coefficients were computed using 1963-1966 data:

$$P_{2mt}+1 = 97.1591 - 0.0028Q_m + 0.2315P_{m7} + 0.5216P_{sft} + 0.1234P_{oft}$$

For additional detail see Chapter 4.

^bThe second week of the 1963 M. C. P. C. marketing season was dropped due to missing M. C. P. C. combined inventory and receipt observation, Q_m .

^cNo price quoted by the Cooperative.

Source: Actual prices obtained from (11, 25).



APPENDIX TABLE 5.--Carlot rail shipments of Santa Maria and Salinas, California celery by week of the Michigan Celery Promotion Cooperative marketing season, 1963-1966.^a

Year	1963		1964		1965		1966	
Week of M.C.P.C. Season	Santa Maria	Salinas	Santa Maria	Salinas	Santa Maria	Salinas	Santa Maria	Salinas
	(Carlots)		(Carlots)		(Carlots)		(Carlots)	
1 -1	95	70	87	35	83	28	114	90
1	87	137	88	58	90	49	122	118
2	74	142	110	77	87	51	124	131
3	50	81	78	80	70	54	59	73
4	39	50	54	64	60	41	51	67
5	22	69	34	31	26	37	46	108
6	17	84	26	41	26	20	56	71
7	6	62	31	51	31	49	82	69
8	20	68	16	50	10	45	61	45
9	22	41	14	39	6	41	68	81
10	28	66	14	62	14	45	72	113
11	6	72	24	75	22	46	62	114
12	11	104	25	64	23	78	62	150
13	14	90	11	79	15	58	38	108
14	19	112	32	74	22	78	37	154
15	25	126	35	127	40	86	21	208
16	26	216	51	178	43	107	47	189

^a Santa Maria includes that district plus other minor central California shipments. A carlot contains 600-16 inch crates per car.

Source: (9)



APPENDIX TABLE 6.--Data series for variables Qm and Pmft for the first seven weeks of the Michigan Celery Promotion Cooperative marketing seasons, 1963-1967.^a

Week of M.C.P.C. Season	Qm				1967 (Crates)	Pmft				
	1963 (Crates)	1964 (Crates)	1965 (Crates)	1966 (Crates)		1963 (\$)	1964 (\$)	1965 (\$)	1966 (\$)	1967 (\$)
1	20,933	15,234	9,623	11,387	2,374	3.50	3.75	3.50	3.88	4.63
2	b	16,819	17,465	5,445	12,443	2.50	3.50	3.38	4.25	4.25
3	18,381	17,819	18,943	10,402	12,474	2.13	2.88	3.25	4.38	3.13
4	15,860	22,567	21,611	15,394	13,389	1.88	2.38	2.88	4.13	3.00
5	15,290	18,522	28,709	16,503	18,012	1.75	2.00	2.38	4.25	3.75
6	15,556	21,302	25,266	15,099	22,341	1.75	2.00	2.25	4.25	4.25
7	19,177	16,073	21,231	14,014	24,688	1.75	2.38	3.00	4.13	4.25

^aVariable Qm=Sum of 1) Number of M. C. P. C. 2½ dozen crates on inventory Saturday evening of week t, and 2) Number of M. C. P. C. 2½ dozen crates harvested for week t+1. Variable Pmft=Midpoint of Santa Maria, California f.o.b. shipping point price range in dollars per crate of 2½ size celery on Friday of week t.

^bData for this observation were not available.

Source: (11)



APPENDIX TABLE 7.--Data series for variables Qm, Pm7, Psft and Pofst for the eighth week of the Michigan Celery Promotion Cooperative marketing season to its completion, 1963-1967.

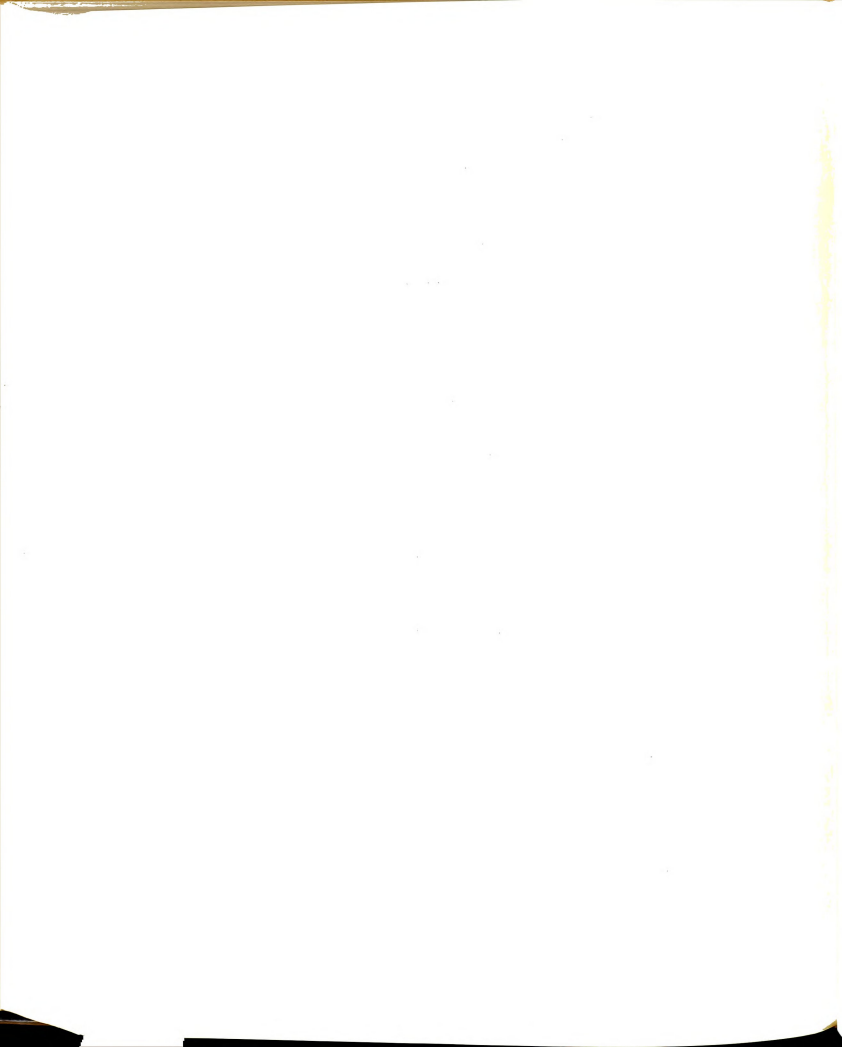
Week of M.C.P.C. Season	Qm (Crates)		Pm7 (Dollars)		Psft (Dollars)		Pofst (Dollars)													
	1963	1964	1965	1966	1967	1963	1964	1965	1966	1967	1963	1964	1965	1966	1967					
8	20,028	16,566	24,961	13,365	25,002	2.00	2.67	2.75	4.38	3.58	2.25	3.00	2.88	3.13	2.75	1.88	3.00	2.88	3.00	3.75
9	21,014	16,135	25,362	13,804	27,003	2.00	2.67	2.75	4.38	3.58	1.75	2.88	2.13	2.75	2.38	1.88	2.88	2.18	3.50	3.63
10	18,096	16,066	22,340	12,920	18,037	2.00	2.67	2.75	4.38	3.58	2.25	3.00	2.25	2.50	2.25	1.75	2.50	1.63	3.38	2.88
11	15,694	21,883	19,381	10,478	17,444	2.00	2.67	2.75	4.38	3.58	2.00	3.00	2.38	2.38	3.13	2.00	3.00	2.25	3.50	4.00
12	14,338	16,034	12,906	7,729	18,709	2.00	2.67	2.75	4.38	3.58	2.38	3.00	3.00	2.50	3.25	2.50	4.50	2.38	3.63	5.50
13	9,347	16,557	8,611	7,297	18,917	2.00	2.67	2.75	4.38	3.58	1.88	3.25	2.25	2.25	2.25	2.13	4.00	2.13	3.25	4.25
14	5,398	13,815	5,280	7,020	15,808	2.00	2.67	2.75	4.38	3.58	1.63	2.38	2.25	2.00	2.63	c	c	c	2.88	3.13
15	4,211	3,075	3,511	5,174	8,589	2.00	2.67	2.75	4.38	3.58	1.63	2.00	2.38	2.38	2.88	c	c	c	2.63	3.00
16	1,021	b	b	b	2,191	2.00	b	b	b	3.58	1.88	b	b	b	3.13	c	b	b	b	3.25

^aVariable Qm=Sum of 1) Number of M. C. P. C. 2½ dozen crates on Inventory Saturday evening of week t, and 2) Number of M. C. P. C. 2½ dozen crates harvested for week t+1. Variable Pm7=M. C. P. C. average f.o.b. shipping point price in dollars per crate of 2½ size celery during the seventh week of the M. C. P. C. marketing season. Variable Psft=Midpoint of Salinas, California, f.o.b. shipping point price range in dollars per crate of 2½ size celery on Friday of week t. Variable Pofst=Midpoint of Orange County, New York f.o.b. shipping point price range in dollars per crate of 2½ size celery on Friday of week t.

^bNo price quoted by the Cooperative.

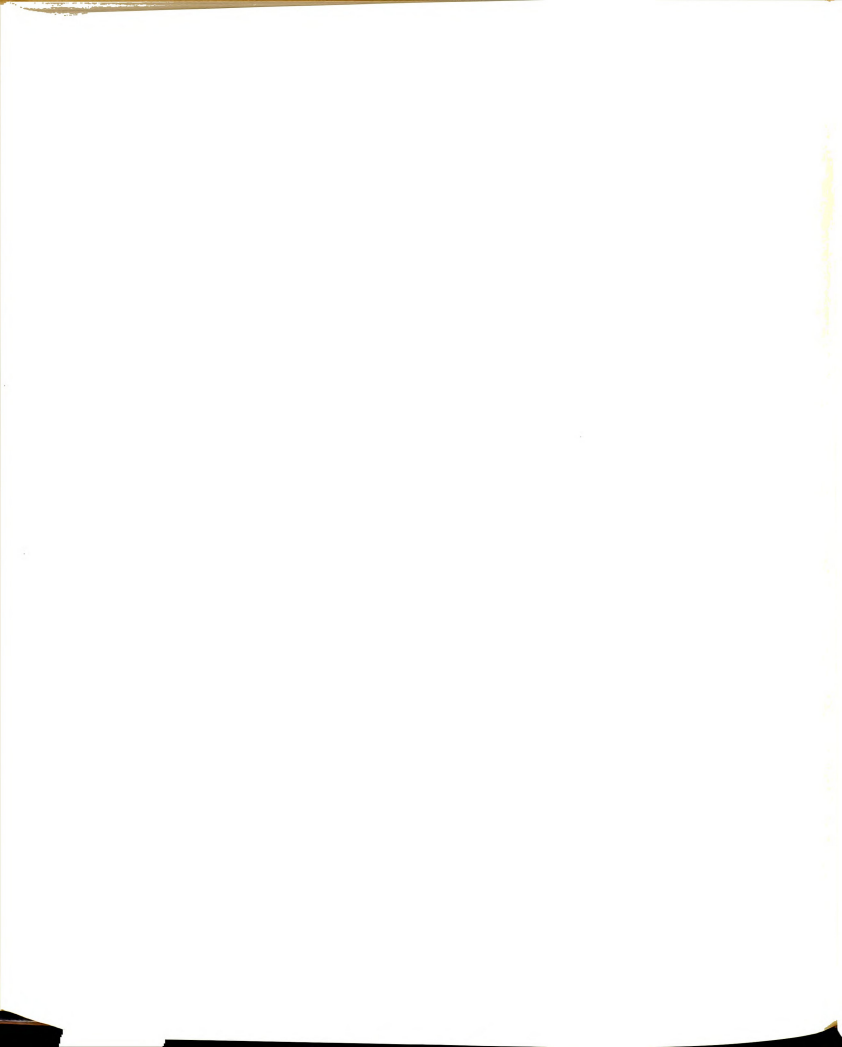
^cNo price quote available from Orange County, New York.

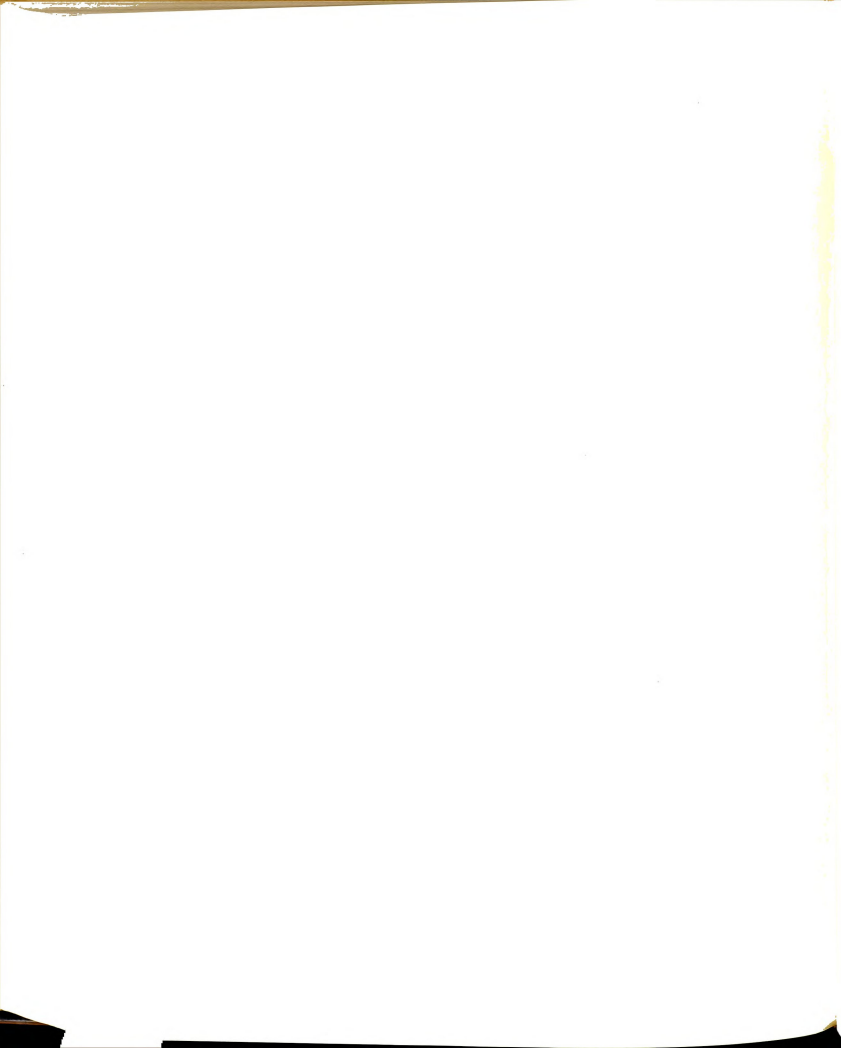
Source: (11)



APPENDIX TABLE 8.--Michigan Celery Promotion Cooperative f.o.b. price per crate of 2½ size celery for each day and the average price per crate of 2½ size celery for each week, 1963-1967.

Week of Season	Year	Monday (\$)	Tuesday (\$)	Wednesday (\$)	Thursday (\$)	Friday (\$)	Saturday (\$)	Average (\$)
1	1963	3.25	3.25	3.00	3.00	3.00	3.00	3.08
	1964	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	1965	a	a	4.00	4.00	4.00	4.00	4.00
	1966	b	4.25	4.25	4.25	4.25	4.25	4.25
	1967	a	b	5.00	5.00	5.00	5.00	5.00
2	1963	3.00	3.00	3.00	2.75	2.50	2.50	2.79
	1964	b	4.00	4.00	4.00	4.00	4.00	4.00
	1965	b	4.00	4.00	4.00	4.00	4.00	4.00
	1966	4.25	4.25	4.50	4.50	4.50	4.50	4.42
	1967	4.75	4.75	4.25	4.25	4.25	4.25	4.42
3	1963	2.50	2.50	2.25	2.25	2.25	2.25	2.33
	1964	3.75	3.50	3.50	3.00	2.50	2.50	3.13
	1965	4.00	3.75	3.75	3.50	3.25	3.25	3.58
	1966	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	1967	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4	1963	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	1964	2.50	2.50	2.50	2.50	2.25	2.25	2.42
	1965	2.75	2.75	2.75	2.50	2.50	2.50	2.63
	1966	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	1967	4.00	4.25	4.25	4.25	4.25	4.25	4.21
5	1963	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	1964	2.25	2.25	2.25	2.25	2.25	2.25	2.25
	1965	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	1966	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	1967	4.25	4.25	4.25	4.25	4.25	4.25	4.25
6	1963	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	1964	2.25	2.25	2.25	2.25	2.25	2.25	2.25
	1965	2.50	2.50	2.50	2.50	2.75	2.75	2.58
	1966	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	1967	4.25	4.25	4.25	4.25	4.25	4.25	4.25
7	1963	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	1964	2.35	2.60	2.60	2.75	2.85	2.85	2.67
	1965	2.75	2.75	2.75	2.75	2.75	2.75	2.75
	1966	4.50	4.50	4.50	4.25	4.25	4.25	4.38
	1967	4.00	4.00	3.50	3.50	3.25	3.25	3.58





APPENDIX TABLE 8.--Continued

Week of Season	Year	Monday (\$)	Tuesday (\$)	Wednesday (\$)	Thursday (\$)	Friday (\$)	Saturday (\$)	Average (\$)
15	1963	2.40	2.40	2.40	2.50	2.50	2.50	2.45
	1964	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	1965	2.50	2.50	2.50	2.50	2.50	a	2.50
	1966	2.75	2.75	2.75	a	a	a	2.75
	1967	3.25	3.25	3.25	3.50	3.50	3.50	3.38
16	1963	2.50	2.50	2.50	2.50	2.50	a	2.50
	1964	a	a	a	a	a	a	
	1965	a	a	a	a	a	a	
	1966	a	a	a	a	a	a	
	1967	3.50	3.50	3.75	3.75	4.25	4.25	3.83

^aNo price quoted by the Cooperative.

^bJuly 4th holiday--no price quoted.

^cLabor Day holiday--no price quoted.

Source: (11)

1. 1. 100

2. 1. 100

3. 1. 100

4. 1. 100

5. 1. 100

6. 1. 100

7. 1. 100

8. 1. 100

9. 1. 100

10. 1. 100

11. 1. 100

12. 1. 100

13. 1. 100

14. 1. 100

15. 1. 100

APPENDIX TABLE 9.--Responses of Michigan Celery Promotion Cooperative members to the question: "Overall, do you feel the Michigan Celery Promotion Cooperative program was: Successful, An Improvement or A Failure?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Successful	26	30	40
An Improvement	28	18	15
Failure	0	2	0
Total	54	50	55

Source: (50, 51, 52)

APPENDIX TABLE 10.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that you were kept (Well Informed, Fairly Well Informed, Poorly Informed) of developments within the (Cooperative's) program?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Well Informed	40	31	37
Fairly Well Informed	22	19	19
Poorly Informed	0	2	0
Total	62	52	56

Source: (50, 51, 52)



APPENDIX TABLE 11.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that the General Manager has done a (Good Job, Fair Job, Poor Job)?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Good Job	37	10	36
Fair Job	19	27	10
Poor Job	6	7	2
Total	62	44	48

Source: (50, 51, 52)

APPENDIX TABLE 12.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that the fieldman did a (Good Job, Fair Job, Poor Job)?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Good Job	40	32	21
Fair Job	14	12	13
Poor Job	3	1	6
Total	57	45	40

Source: (50, 51, 52)



APPENDIX TABLE 13.--Responses of Michigan Celery Promotion Cooperative members to the question: "Have you cooperated with the celery Cooperative in filling out questionnaires, packing good quality pack, attending meetings, informing committees and manager of any information helpful to the Cooperative, supporting the program at all times and encouraging others to cooperate (100% Cooperation, Fairly Good Support, Whenever Convenient)?", 1963-1965.

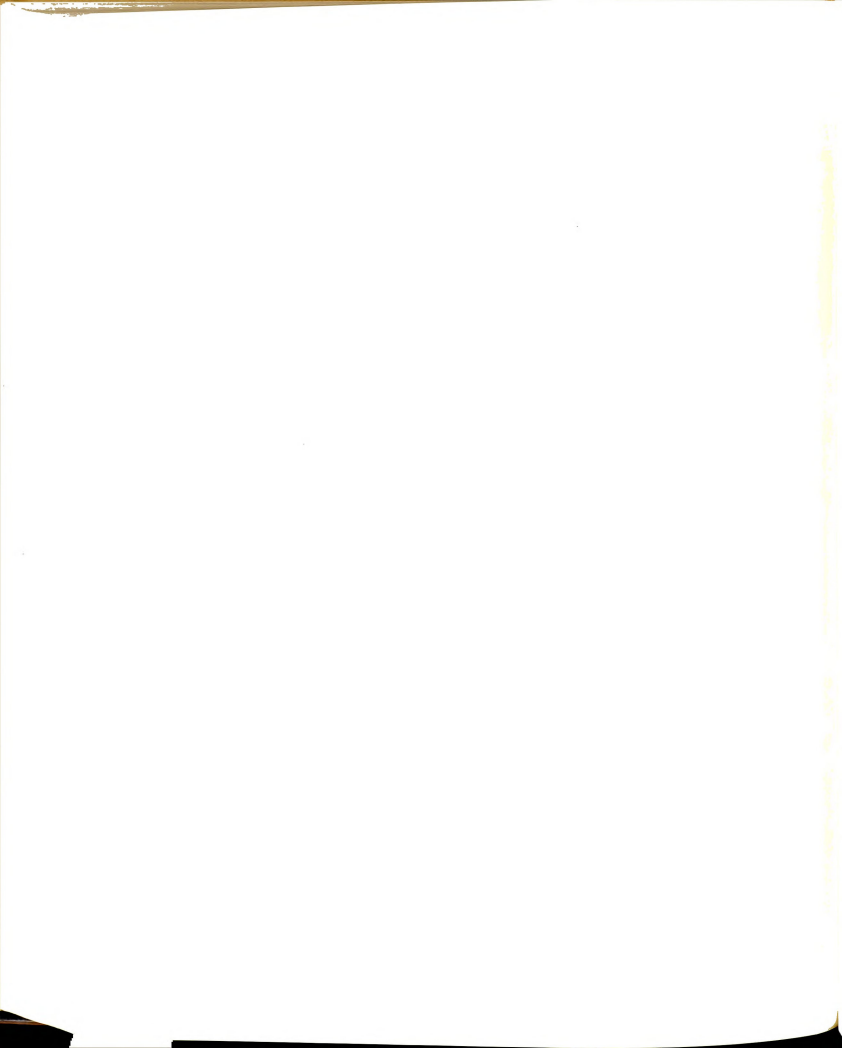
Rating	Response by Year		
	1963	1964	1965
100% Cooperation	13	15	13
Fairly Good Support	35	33	30
Whenever Convenient	8	2	2
Total	56	50	45

Source: (50, 51, 52)

APPENDIX TABLE 14.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you feel that the Cooperative is charging too much for the good you are (could) get(ing) from it?", 1963-1965.

Response	Response by Year		
	1963	1964	1965
Yes	9	10	8
No	46	37	45
Total	55	47	53

Source: (50, 51, 52)



APPENDIX TABLE 15.--Responses of Michigan Celery Promotion Cooperative members to the question: "Should the Cooperative concentrate more on cultural practices or marketing problems?", 1963-1965.

Emphasis	Response by Year		
	1963	1964	1965
Cultural Practices	12	15	32
Marketing Problems	35	34	12
Total	47	49	44

Source: (50, 51, 52)

APPENDIX TABLE 16.--Responses of Michigan Celery Promotion Cooperative members to the question: "Has the Cooperative's quality control program been (Too Loose, Just Right, Too Tight) in its enforcement?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Too Loose	14	9	3
Just Right	37	32	42
Too Tight	5	4	3
Total	56	45	48

Source: (50, 51, 52)



APPENDIX TABLE 17.--Responses of Michigan Celery Promotion Cooperative members to the question: "Was the (Federal-State) Inspection Service fair in method of inspection?", 1963-1965.

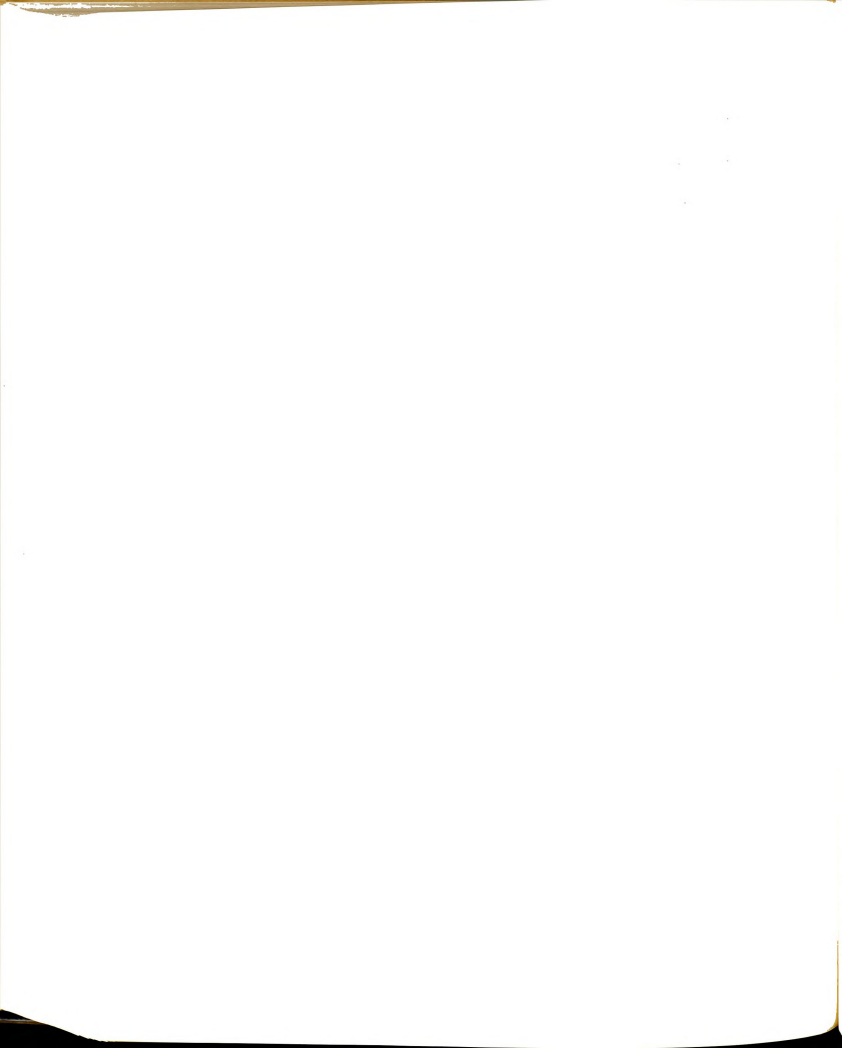
Response	Response by Year		
	1963	1964	1965
Yes	41	38	35
No	6	5	6
Total	47	43	41

Source: (50, 51, 52)

APPENDIX TABLE 18.--Responses of Michigan Celery Promotion Cooperative members to the question: "Did the Federal-State Inspection Service perform (Well, Fair, Poorly)?", 1963-1965.

Rating	Response by Year		
	1963	1964	1965
Well	42	38	33
Fair	13	9	14
Poorly	0	0	1
Total	44	47	48

Source: (50, 51, 52)



APPENDIX TABLE 19.--Responses of Michigan Celery Promotion Cooperative members to the question: "Should the Cooperative's quality standards be (Raised, Remain Same, Lowered)?", 1963-1965.

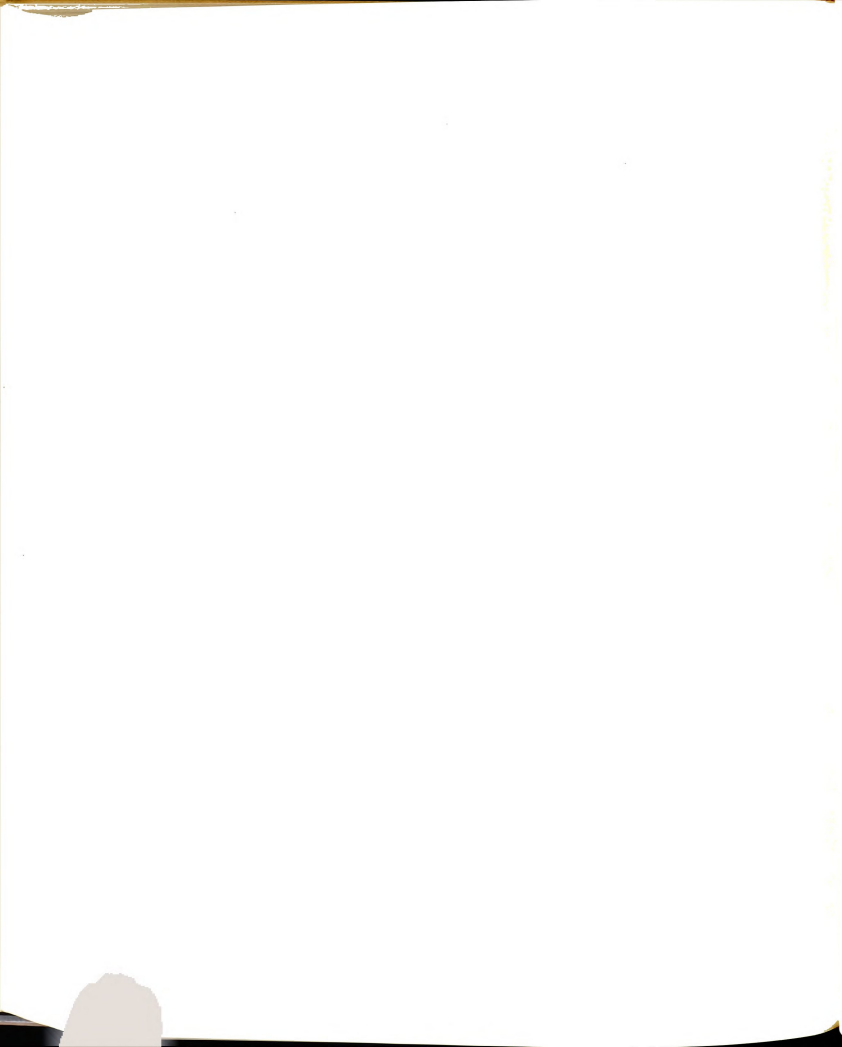
Rating	Response by Year		
	1963	1964	1965
Raised	6	5	4
Remain Same	50	40	47
Lowered	1	3	2
Total	57	48	53

Source: (50, 51, 52)

APPENDIX TABLE 20.--Responses of Michigan Celery Promotion Cooperative members to the question: "Was the cutting holiday helpful in keeping the celery price up?", 1963-1965.

Response	Response by Year		
	1963	1964	1965
Yes	31	28	41
No	5	8	4
Total	36	36	5

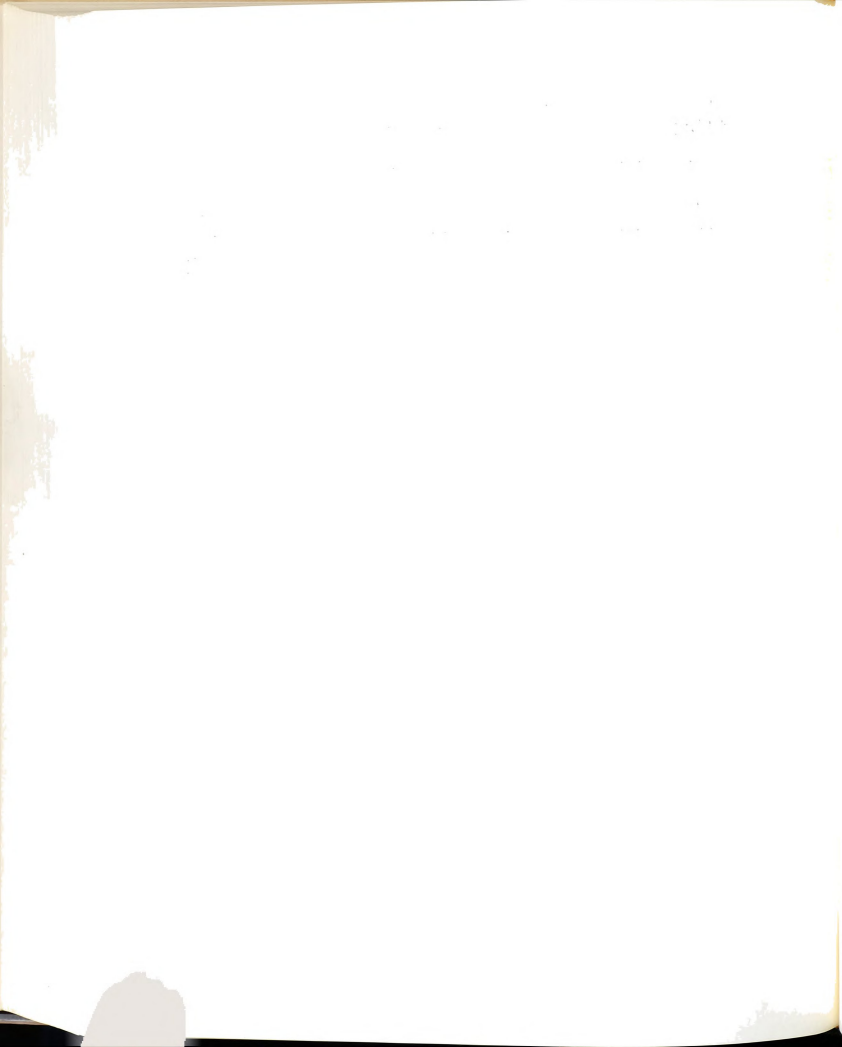
Source: (50, 51, 52)



APPENDIX TABLE 21.--Responses of Michigan Celery Promotion Cooperative members to the question: "Do you think the price program this year was (Effective, Fairly Effective, Useless)?", 1963-1965.

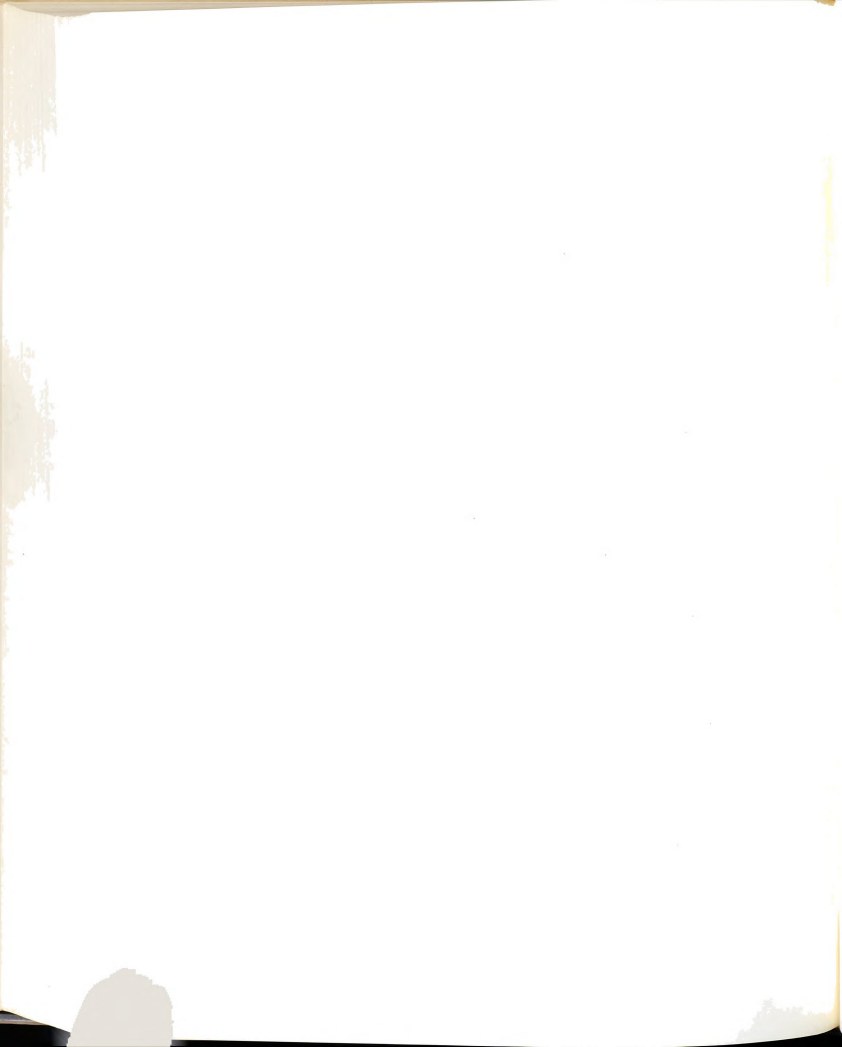
Rating	Response by Year		
	1963	1964	1965
Effective	36	32	33
Fairly Effective	13	18	20
Useless	1	0	0
Total	50	50	53

Source: (50, 51, 52)



APPENDIX B

Copies of contracts used between the Michigan Celery Promotion
Cooperative and its members, and the Cooperative and those
firms that act as sales agents for its celery.



Contract Between Producer and Cooperative

MEMBERSHIP AND MARKETING AGREEMENT

This agreement is entered into on the date subscribed hereto between the Michigan Celery Promotion Cooperative, Inc., an agricultural cooperative incorporated under the laws of the State of Michigan (hereinafter called "Corporation") and the undersigned (hereinafter called "Member").

WITNESSETH:

In consideration of the mutual promises, covenants and conditions to be kept and performed by the parties hereto, the parties agree as follows:

1. The member hereby appoints and employs the corporation as his exclusive sales representative as herein provided to market all celery to be grown or produced by him, or for him, or acquired by him as landlord or tenant that he hereafter may have to dispose of each season for either fresh or processing purposes during the life of this agreement, and the corporation accepts such appointment and employment to act as such exclusive sales representative.
2. The member shall deliver all celery to be grown by him, or for him, or in which he has an interest, either as landlord or tenant, on lands owned or otherwise held by him, or in which he has any other interest whatsoever, to the corporation, or to such other person, firm or corporation as the corporation shall approve during the term of this contract. Official notice of such approval shall be given to the member by the corporation by mail, addressed to the member shown on the corporation record.
3. The corporation for the purpose of marketing, or contracting for the sale of celery of member shall prescribe or approve the form and substance of the purchase and sale agreement and conditions and terms of sale and delivery between member and any person, firm, or corporation, which buys said celery.

The corporation shall, if they so decide, appoint such sub agents, or brokers, as may be necessary to the sale of member celery to the best advantage to member and the celery industry as a whole. Appointment of these sub agents or brokers shall be done by corporation contracting with said sub agent or broker to make available their services and facilities under uniform approved conditions and terms. The member shall be informed of these terms and conditions by issuance by corporation of an approved contract under which member may deliver his celery to a designated sub agent or broker. In no case shall member deliver or sell celery to any person, firm, corporation, sub agent, or broker except under the terms and conditions set forth herein.

It is further understood that the corporation shall have the right to regulate the volume and quality of celery of any size, pack, variety, maturity, that may be shipped to any or all processors, sub



agents, brokers or buyers, by said member, and to different market areas, when it is deemed in the best interests of the celery industry by the board of directors of the corporation.

Member agrees further to be responsible for quality of celery until such celery reaches point of destination or delivery to buyer, excepting those lots or shipments where corporation or corporation's agent lack of care or negligence contributed to such deterioration of quality as to make such shipment or lot of celery unacceptable to buyer, in which case corporation or corporation's agent agrees to assume said responsibility for quality and delivery.

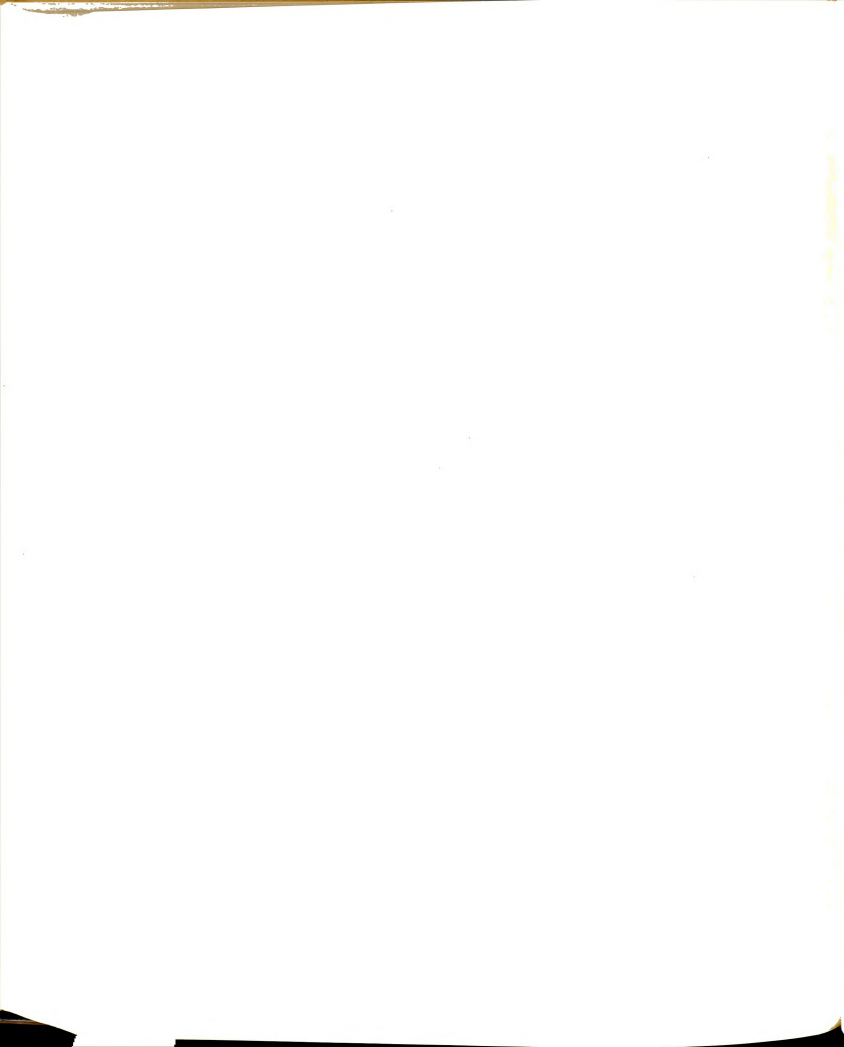
4. Member hereby authorizes the corporation to withhold a maximum of 5 cents per crate or crate equivalent of the proceeds of sale or to pay said sum to the corporation as may be directed by the board of directors of the corporation.

5. The corporation agrees to market or negotiate sales to market on behalf of the member, to the best of its ability under economic and marketing conditions from time to time existing, all celery produced by the member, in such form and manner, and at such prices and under such other terms as the corporation deems for the best advantage of all members who have signed agreements similar hereto, subject, however, to conditions affecting the marketing of celery which may be beyond the control of the corporation.

6. The corporation agrees to render, to the extent of its capacity and ability such other services to its members with reference to dissemination and distribution of information, data and statistics pertaining to the production, marketing and utilization of celery crops for the market, as may, from time to time, be currently available.

7. This agreement shall become effective when signed by the member and the corporation, but if the board of directors of the corporation determines that a sufficient acreage is not covered by contracts similar in principle to this one to make this plan of marketing celery effective, the corporation may suspend the operation of this and other grower agreements for that particular marketing season. Such suspension shall not operate as a cancellation of this agreement, but this agreement shall automatically remain effective for succeeding marketing seasons unless again suspended for a particular season by the board of directors.

8. If member shall sell any celery covered by this agreement contrary to its provisions or shall sell any such celery other than through corporation, it is agreed that such act will damage the corporation in the amount that is, and will be, impracticable and extremely difficult to determine and fix, and therefore, member agrees to pay corporation a sum equal to (25%) twenty-five percent of the gross sales value of such celery sold, said sales value to be determined by the United States Dept. of Agriculture Marketing Service F.O.B. price established at the Benton Harbor office, as liquidated



damages for all celery that is disposed of contrary to this agreement, which damages may be recovered by the corporation in any court of competent jurisdiction. In the event of a breach or threatened breach of this agreement by member, the corporation shall be entitled to an injunction and to a decree requiring member to specifically perform his obligations under this agreement. In any suit based on this agreement, the corporation, if the prevailing party, shall be entitled to reasonable attorney fees and all costs of any such suit.

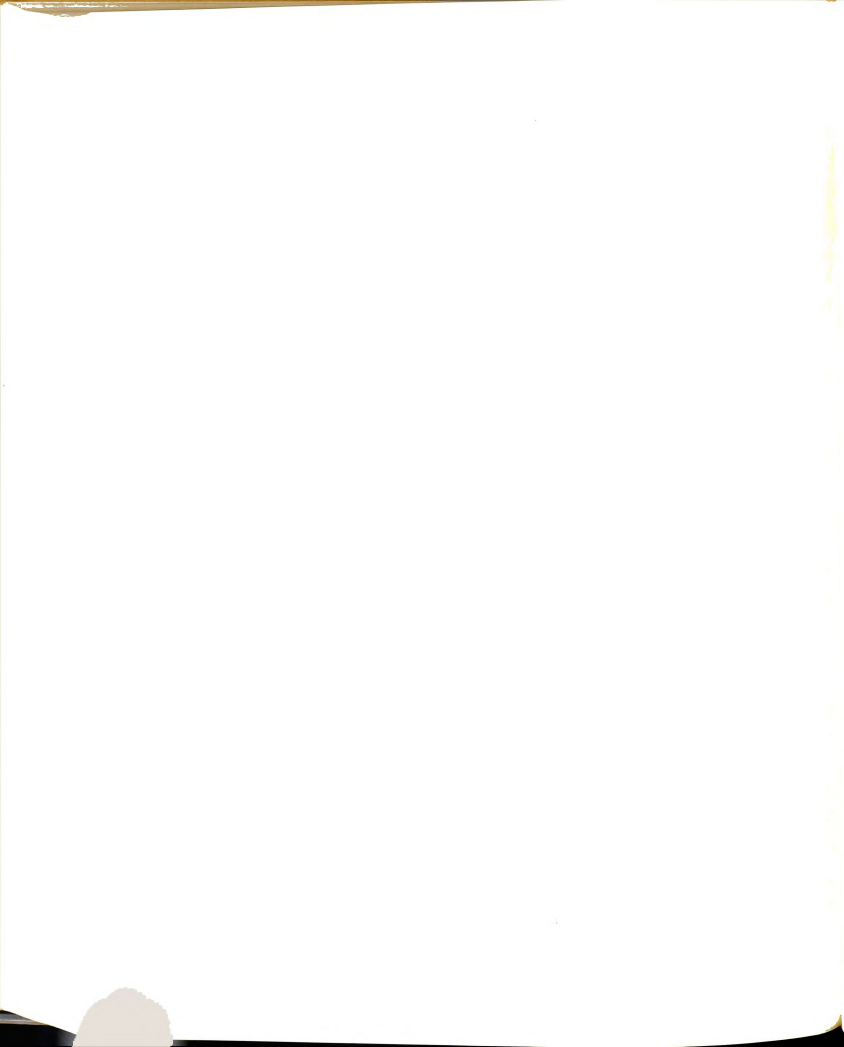
9. Each party hereto shall be excused from performance hereunder by reason of any cause beyond its reasonable control. Such causes shall include, but not by way of limitation, fire, storm, flood, earthquake, explosion, war, rebellion, insurrection, action of the elements, labor disputes, total or partial failure of transportation or delivery facilities, shortage of labor, raw materials or supplies, acts of God and any act of government or military authorities.

10. Member hereby agrees to furnish or cause to be furnished the corporation, on its request at any time, complete information regarding celery delivered from the member or in his behalf, including the weight, grade and quality thereof, amounts paid therefore and any other requested information.

11. This agreement shall bind the heirs, legal representative, successors and assigns of the respective parties hereto. If this agreement is signed by members of a partnership, it shall apply to such individuals jointly and severally in the event of termination of the partnership. If member in good faith shall sell or lease his farm on which celery is grown after he has signed an approved contract with a purchaser of celery, the member shall obligate the purchaser or lessee of the land to deliver said celery to the corporation under the terms and conditions above described. Any fictitious sale or lease of a farm on which celery is grown by member, or any other device entered into by him to avoid this agreement, shall be a violation thereof.

12. It is understood and agreed that this agreement is one of many other marketing agreements similar in substance and form executed between other growers or producers and the corporation, who are mutually and individually obligated to each other thru the corporation; and that the corporation shall be deemed to be acting in its own name for and on behalf of all such producers in carrying out and enforcing such agreements in any actions or legal proceedings arising therefrom.

13. This agreement shall continue in effect indefinitely unless cancelled as herein provided by one of the parties hereto. Either party hereto shall have the right to cancel this agreement by giving written notice to that effect by mail to the other party between the 15th and 30th day of November in any year.



14. This contract is executed in duplicate and the member hereby acknowledges receipt of one of the duplicate copies and the member hereby agrees that this contract shall not only be binding with the corporation but with any corporation similar in nature which may succeed said corporation or that may be formed in its place and stead, of which the member may become a member and to which this contract may be duly assigned in writing; provided that any corporation to which this contract may be assigned shall be cooperative in character and conform to the laws of the State of Michigan relative to the organization and operation of cooperative organizations.

15. It is agreed that the signing of this agreement by the member constitutes an application for membership in the corporation and the signing hereof by the corporation shall constitute an acceptance of such application and it is agreed that the charter, the by-laws now or hereafter in effect, and this contract constitute the entire agreement between the corporation and the member.

IN WITNESS WHEREOF, this contract has been executed, in duplicate, by the parties hereto on this _____ date of _____, 19____.

(witness as to member)

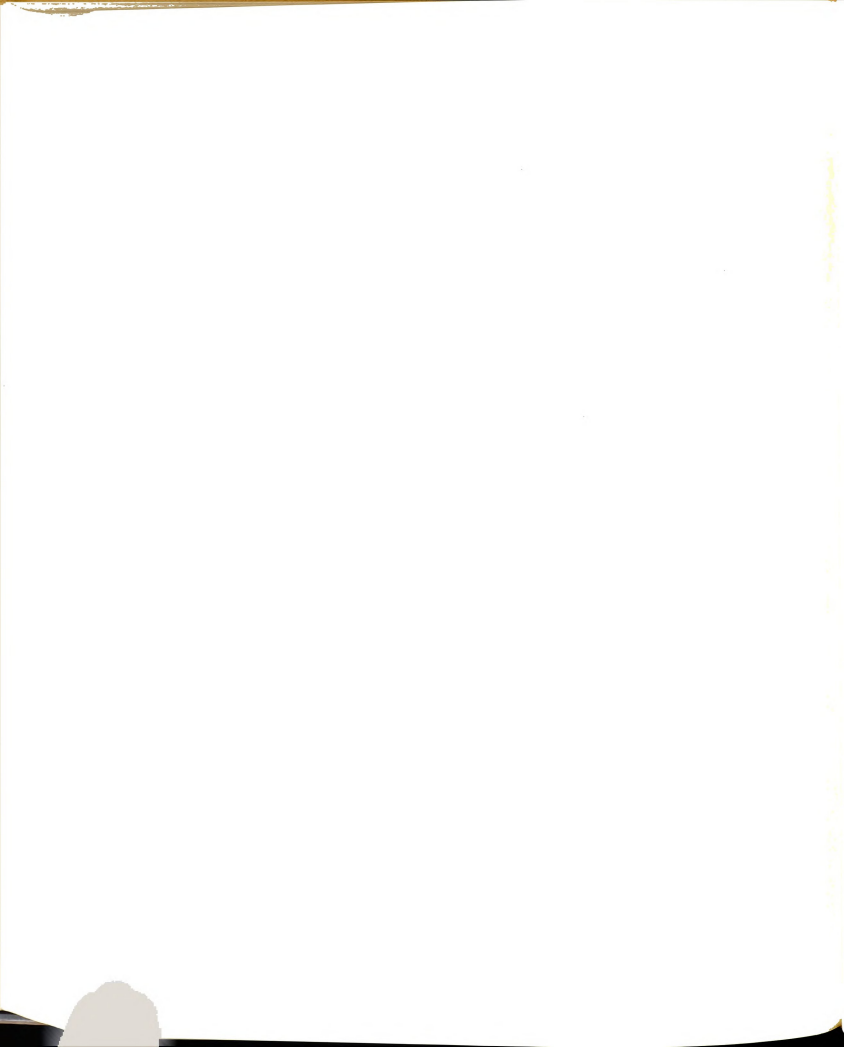
(member)

(member's address)

MICHIGAN CELERY PROMOTION COOPERATIVE, INC.

By _____

Secretary

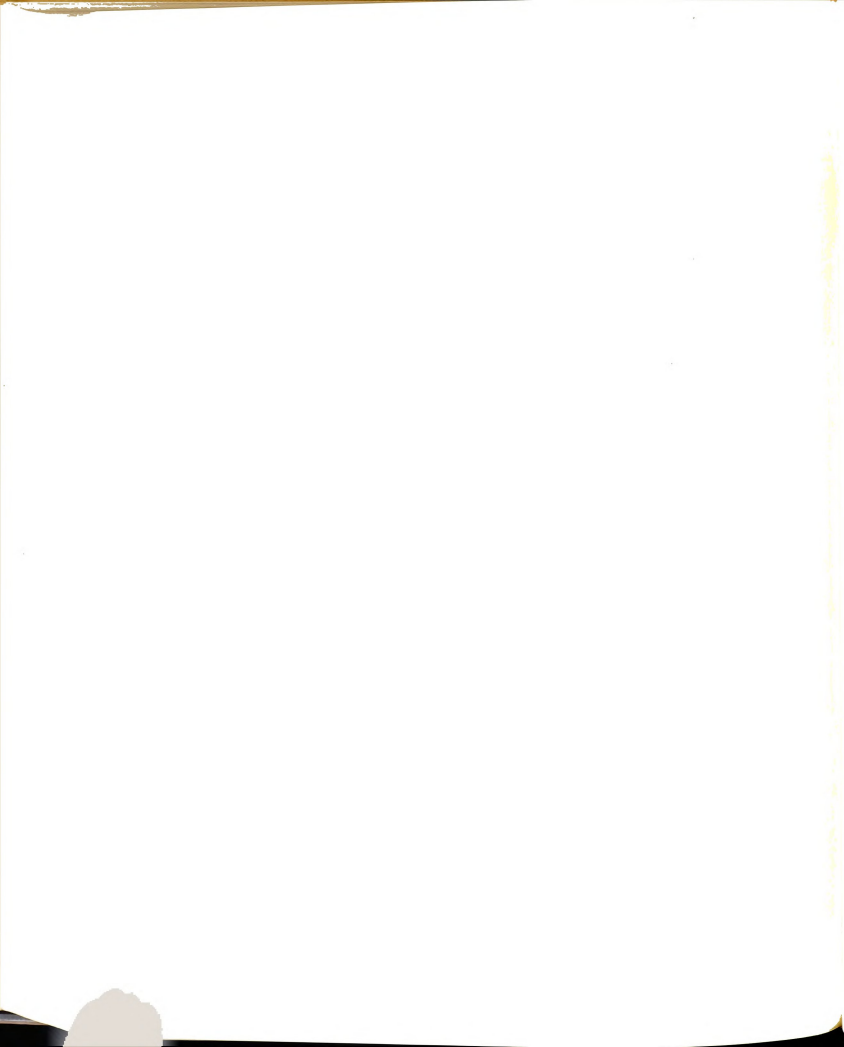


Contract Between Cooperative and ShipperCELERY MARKETING AGREEMENT

This Agreement made and entered into this _____ day of _____, 19_____, by and between the _____, party of the first part, and hereinafter referred to as the "Broker", and the Michigan Celery Promotion Cooperative, Inc., of _____, party of the second part, and hereinafter referred to as the "Corporation".

Now, therefore, in pursuance thereof and in consideration of the agreement and promises herein contained and the benefits and advantages of each of the parties derived therefrom, and acknowledging the mutual desire of each party to build and strengthen the market for Michigan celery, it is hereby agreed as follows:

1. Broker hereby agrees to bind himself to the Corporation as their agent for selling Michigan celery, and further, that he will sell Michigan celery exclusively for patrons of said Corporation under the conditions and terms to follow here below.
2. That Corporation, together with Broker shall agree to a quality control program and establish certain grades and standards, which from time to time seem to be in the best interests of the Michigan Celery Industry as a whole. Such agreement shall be in the form of a contract and shall be written and shall be enforced by Corporation and Broker until by mutual agreement a change of such contract is reached and agreed upon by both parties hereto. Broker shall not market, sell, or ship celery which does not meet the requirements of said contract without express agreement of Corporation. This contract is to be implemented and enforced by Corporation by agreements which bind celery growers as members or nonmember patrons of said Corporation. A qualified Federal-State Vegetable Inspector shall be employed, at the Corporation's expense, who shall among his duties report to the Corporation that such celery as is sold, or shipped, by said Broker meets the conditions set forth in the said contract between said Broker and Corporation. In addition, Corporation shall appoint and certify a grower member of said Corporation and provide such other supervision for said contract and agreement as it deems necessary and advisable for the enforcement thereof.
3. That Broker agrees that Corporation shall set minimum F.O.B. prices for various sizes, packs, qualities, and varieties, grades of celery, and in different market areas at which Broker may offer Corporation or Corporation patrons celery for sale, in so much as Corporation or Corporation patrons shall retain ownership and title in said celery, and shall be responsible for delivery of said celery in a marketable condition to buyers, and further because Broker is retained under a uniform schedule of reimbursement for use of his services and facilities.



Broker shall be notified of such F.O.B. prices daily by Corporation, or from time to time as deemed necessary in the best interests of the celery industry.

4. That Broker agrees not to market, or sell, or ship celery on consignment sale, unless such sale shall be authorized by Corporation or authorized representative of said Corporation, in so much as such consignment sales create instability in the market structure and damage the celery industry in general.

5. That on mutual agreement between Corporation and Broker, there shall be caused to be published a uniform, fair, trucking rate or schedule, such rate to be paid by Broker or Corporation when shipping celery out of the State of Michigan to the various major markets or destinations for Michigan celery. This trucking fee is to be added to what ever the prevailing F.O.B. price may be at the time of sale.

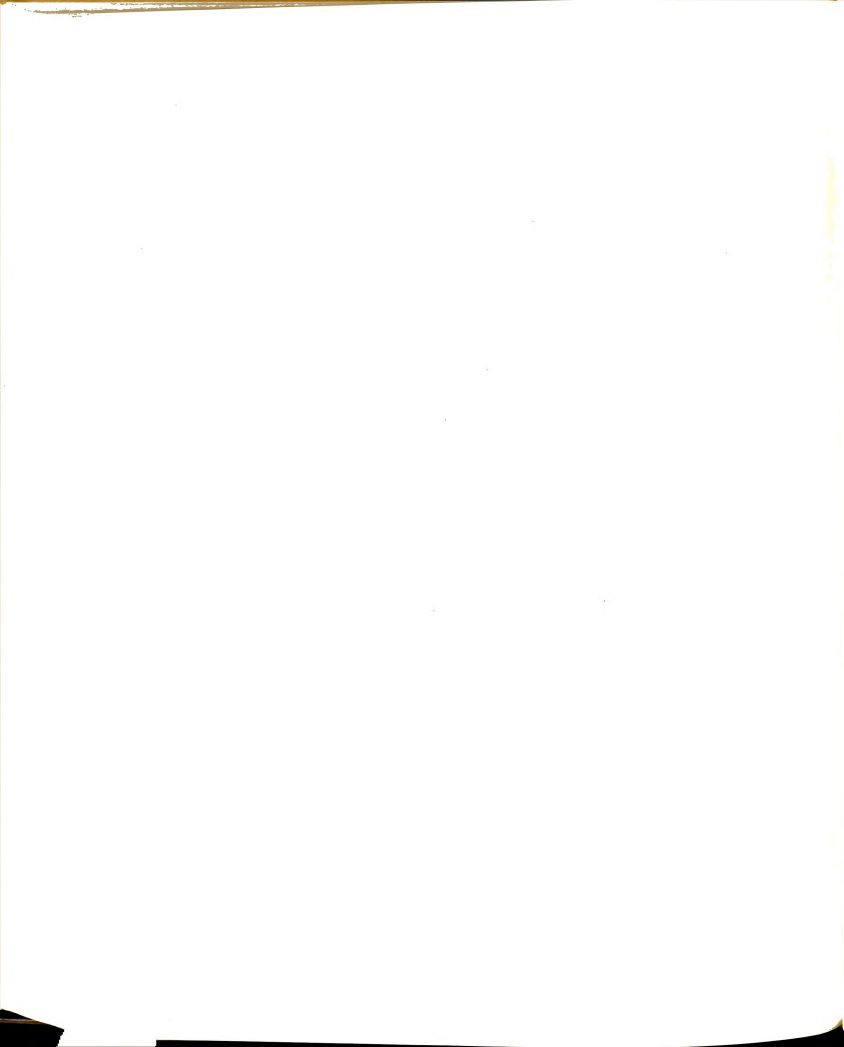
6. Broker agrees to deduct from receipts of Michigan grown celery sold and pay weekly, to the Corporation or to their designated representative, the sum of not to exceed five (5) cents per crate or crate equivalent as determined by the Board of Directors of Corporation on all Michigan grown celery handled or sold by said Broker. Broker hereby recognizes that the organization and continued existence of the Corporation relieves the Broker of the trouble, labor, and uncertainty of soliciting, and obtaining, separate contracts of agency with individual growers.

7. It is further agreed by Broker that a commission of ten (10) percent of F.O.B. sales price shall be charged by Broker as remuneration for his services of handling and selling said celery delivered by Corporation to him. In addition thereto, the sum of not to exceed _____ cents per crate may be charged by Broker to Corporation patrons for cooling said patron's celery.

8. Broker further agrees to pay to Corporation fifteen (15%) percent of the said Broker's commission described above; for this consideration said Corporation agrees to pay growers and furnish other herein agreed upon services to Broker.

9. Corporation shall from time to time furnish Broker with an estimate of the quantity, quality and kind of celery which its patrons wish to deliver for sale to assist and facilitate the efforts of said Broker to secure the best market and price for said celery.

10. In the event that the volume of celery to be harvested by said patrons of said Corporation exceeds the demand for said celery, there shall be cutting or harvesting holidays of such length and for such varieties, sizes, and other factors as shall be determined by the Board of Directors of the Corporation to be in the best interests of the celery industry. Such conditions shall be applied as equitably



as possible in each case to all Corporation patrons delivering celery to said Broker.

11. It is agreed that Corporation shall be responsible for quality of Corporation patrons celery and delivery of said celery in a marketable condition to buyer excepting those lots or shipments in which the Broker's lack of care or negligence contributed to the unmarketable condition of said celery, in which case Broker shall assume responsibility for such celery.

12. By mutual agreement between Broker and Corporation, promotion and/or advertising programs, research, market research, and other programs of benefit to the celery industry may be devised and implemented by those parties hereto.

13. Broker agrees to be responsible for collection of monies from buyers with whom he has consummated sales of Corporation and Corporation patron's celery, and to pay directly to Corporation weekly for celery delivered to him for sale and handling during that period; Corporation and Corporation patrons authorize Broker to deduct and retain such sums as set forth in the body of this contract as reimbursement for Broker's services and facilities and in addition, the sum to be paid to Corporation for their contribution and risk, shall be deducted and paid as set forth herein above.

14. Broker agrees that he will not market, ship, or sell, or in any wise handle Michigan celery which does not meet the terms and conditions contained herein and within this agreement and in such agreements or contracts which are specified as accessory to and necessary to the carrying out of this agreement. It is hereby mutually agreed that for this agreement to be workable and tenable and for the best interests of the celery industry, that the terms and conditions of this contract and agreement must be uniformly used and applied to all growers who regularly dispose of their celery through said Broker.

15. Broker agrees to provide and make available to such persons authorized by Corporation, such records which he may possess, which Corporation may need to verify and check that the terms and conditions of this agreement are being fulfilled and abided by. Sales invoices of Broker shall remain in his possession unless released to Corporation.

16. If either Broker or Corporation shall sell, market, or dispose of celery other than in the terms and conditions of this agreement, it is agreed that such act will damage the celery industry and Broker and Corporation in the amount that is, and will be, impractical and extremely difficult to determine and fix, and therefore Broker and Corporation mutually agree and covenant that the party in violation of this agreement will pay to the other party, the sum of fifty cents (50¢) per crate or crate equivalent for all the crates sold or shipped in violation thereof. Either party shall be entitled to an



injunction and to a decree requiring specific performance of his obligations under this agreement.

17. Corporation shall inform Broker at the beginning of the marketing season of that portion of the Corporation celery which shall be allocated to said Broker for his sales and shall guarantee delivery of that portion as long as said Broker is able to successfully sell said celery. In the event Broker cannot successfully sell said celery, Corporation reserves the right to re-allocate a part or all of his sales portion on a temporary or permanent basis. It is agreed that this said re-allocation shall not occur unless Broker has an unsold inventory equal to two (2) days of total celery or certain sizes of celery, equal to two (2) days production of celery based on his portion or allocation as determined by Corporation. Any re-allocation made by Corporation shall not be punitive in nature but shall be in the best interests of the celery industry as a whole.

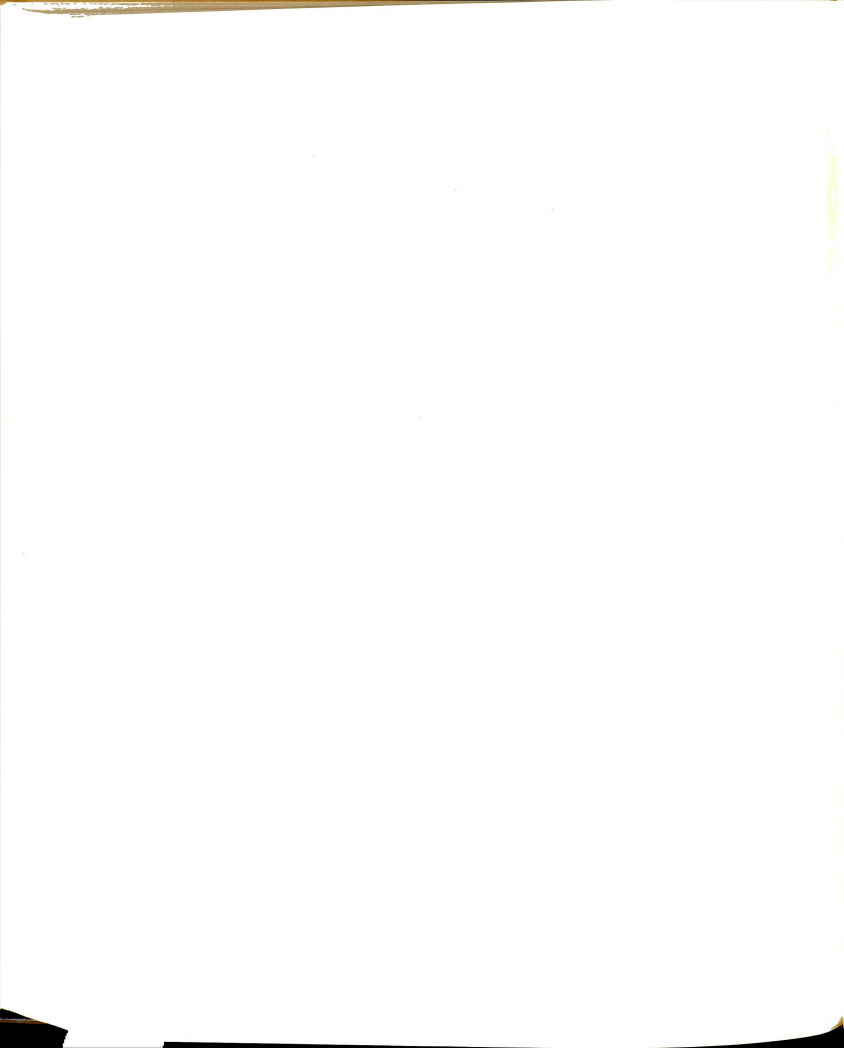
18. This agreement shall continue in effect indefinitely unless cancelled as herein provided by one of the parties hereto. Either party hereto shall have the right to cancel this agreement giving written notice to that effect by registered mail to the other party between the 15th and 30th day of November in any year.

19. Corporation agrees that it has no intention of selling celery, but shall contract with shipping Brokers for the sale of all it's patrons celery excepting that quantity of bulk processing celery sold during the 1963 marketing season by the Muskegon Celery Growers Cooperative, Inc., which is specifically exempted from this and other contracts with Brokers.

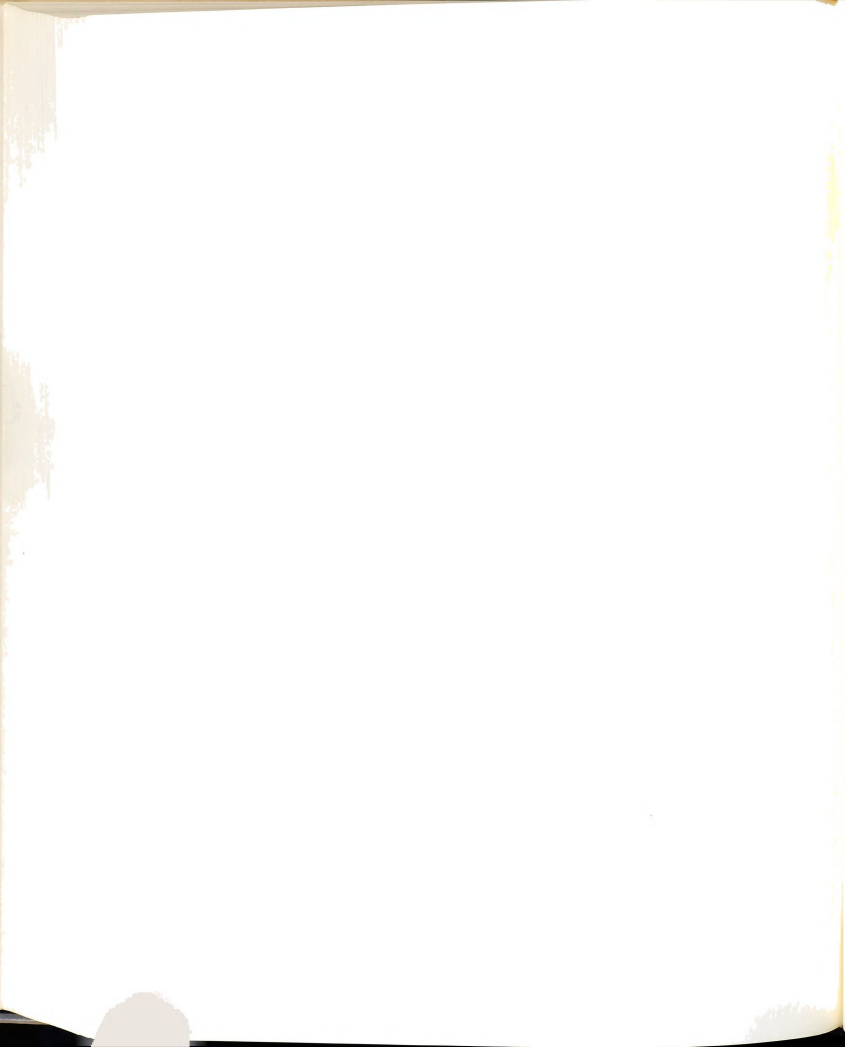
Signed _____ (Seal)
Michigan Celery Promotion Cooperative, Inc.

Signed _____ (Seal)
Broker

Witness: _____



APPENDIX C



Regression coefficients for the following variables were calculated but were not found to be statistically significant¹:

- Qmts = Number of M. C. P. C. crates in inventory (excluding hearts, cartons and bulk) on Saturday of week t
- Qc+m = Sum of Qmts and crate equivalents of carlot rail shipments of California celery during week t (Qct)
- Mrt = Total precipitation in hundredths of inches during week t as recorded at the Muskegon Airport Weather Bureau
- Mmt = Average daily minimum temperature during week t as recorded at the Muskegon Airport Weather Bureau
- Oht = Average daily maximum temperature during week t as recorded at the Cleveland Airport Weather Bureau

Regression coefficients for the following variables were calculated for the entire M. C. P. C. marketing season. The variables were statistically significant² but were dropped because a 'better' fit³ was obtained by using other variables when the season was broken into two parts. Reliable estimates of carlot rail shipments of California celery for the coming week were not available and therefore contributed to dropping those variables in which this was a factor.

- Qct+1 = Number of carlot shipments by railroad of California celery in week t+1
- Qc = Sum of the number of carlot shipments by railroad of California celery in week t+1 and week t-1
- T1 = Week and year of the M. C. P. C. marketing season
- T2 = Week of the M. C. P. C. marketing season

¹Significant at greater than 5 percent.

²Significant at less than 5 percent.

³Higher R² and lower standard errors of estimate.



APPENDIX D



Federal Marketing Orders--Institution and Administration¹

A marketing order is a legal instrument issued by the Secretary of Agriculture specifying terms and conditions of marketing particular commodities in a given area. A marketing order is binding upon all handlers of the commodity in the specified production area.

Institution of Orders

In instituting an order the following steps are involved:

- "1. A proposed order program is formulated by industry groups. The Secretary of Agriculture also has authority to initiate a program.
2. The proposed program, together with a request for a public hearing, is submitted to the Secretary. The Secretary does not plan or outline a program--this originates and is planned by the commodity group concerned.
3. After due notice (not less than 15 days after date of publication of hearing notice in the Federal Register) the hearing (or series of hearings, as necessary) is held. Interested parties may enter evidence. They also may file written briefs or arguments, and proposed findings or conclusions, after the close of the hearings.
4. A recommended decision, with terms of the program set forth as supported by evidence presented at the hearing, is prepared and published by the Department of Agriculture.
5. Interested parties may file exceptions to the decision.
6. A final decision is issued by the Secretary." (44:3)
7. The proposed marketing agreement is submitted to producers for approval through a referendum. "An order may be issued for a commodity only if at least two-thirds of the producers, or those who produce two-thirds of the volume, approve the order by referendum. A two-thirds majority means two-thirds of those voting in the referendum, and not two-thirds of all growers in the industry." (44:2)
8. "After required approval, the Secretary may then make the marketing order effective.... An order becomes effective not less than 30 days after its publication in the Federal Register, unless the Secretary sets an earlier date.

¹For eligible vegetable crops only.



9. Handlers who feel that the order or any provision of it is not lawful may file a petition with the Secretary requesting that the order be modified or that they be exempted from its provisions. After a hearing, the Secretary makes a decision which, if not accepted by the handler, may be appealed (within 20 days) to a District Court of the United States for review." (44:3-4)
10. "The procedure for amending orders is much the same as for instituting an order, but less time (3 days) for notice of hearing may be involved." (44:4)

"A marketing order, or any provisions of an order, must be terminated whenever the Secretary of Agriculture finds it no longer tends to achieve the declared policy of the enacting legislation. An order must be terminated by the Secretary at the end of a current marketing period, whenever more than half the producers, who produced during the representative period more than half the volume of the commodity request a termination." (44:4)

Administration of Orders

The terms of federal orders for vegetables are administered by a committee of growers, handlers, or both. "Members of the committee are normally nominated by growers and handlers and appointed by the Secretary. Their term of office, powers, duties and obligations are stated in the order. The committee prepares a proposed annual budget and rate of assessment for the approval of the Secretary. The committee is then responsible (1) for the expenditure of all money collected and for keeping appropriate records and making audits, (2) for making recommendations relative to shipments, (3) for analyzing crop and market conditions and recommending appropriate regulations, (4) for investigating alleged violations of the order and making inspections, and (5) for conducting other activities necessary for the smooth operation of the order." (3:12-13)



Administration costs connected with the operation of an order are financed by assessments upon handlers. The administration of orders can be characterized as being responsive to changes in local conditions. The Secretary has close contact with the operation of an order through the committee. Some of the success of the market order program may be due to the local administration feature. Producers and handlers know with whom to discuss their problems and can get prompt decisions. (3:12-13; 44:5)

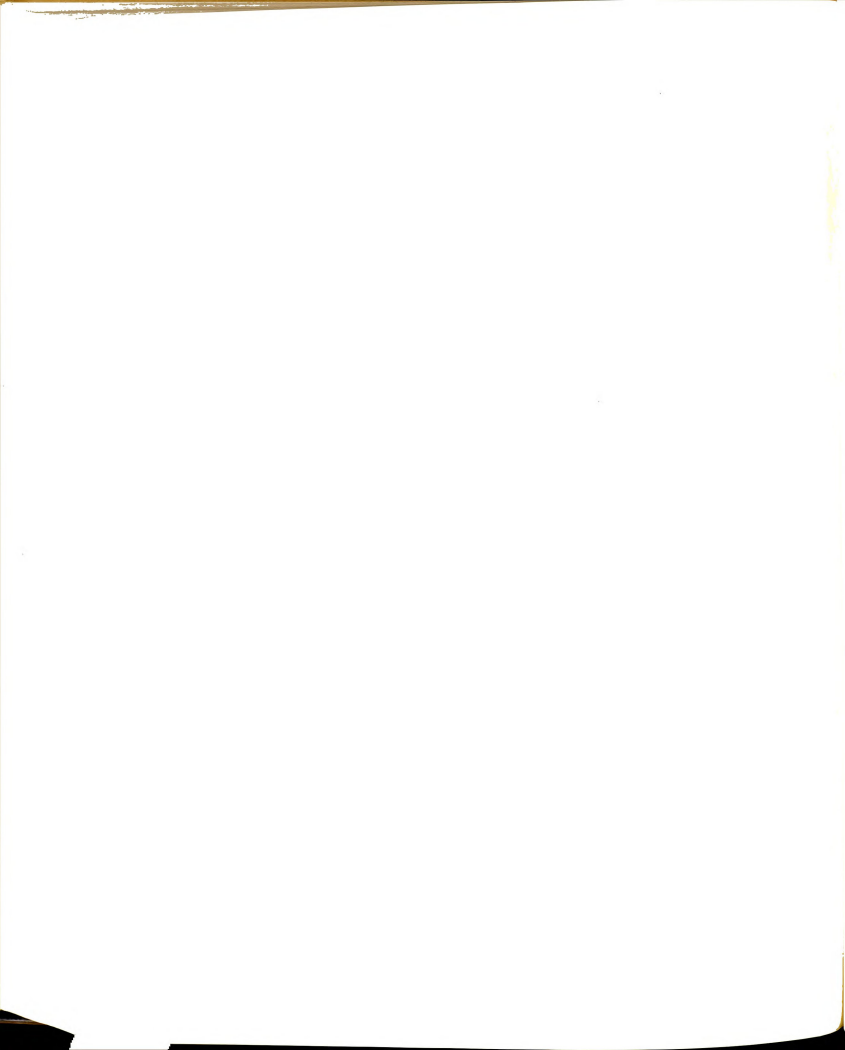
Enforcement of Orders

"Enforcement of the provisions of an order can be taken in three forms: (1) civil action requiring compliance by injunction, (2) civil action for forfeitures, and (3) criminal action with fines ranging from \$50 to \$500 for each day of violation. In addition, criminal or civil action can be taken in cases dealing with fraud, falsified records, contempt of injunctions and the like." (3:13)

Order Provisions

A federal marketing order must include provisions for one or more of the following:

- "(1) specifying grades, size, quality, or maturity of the commodity that handlers may ship to market;
- (2) allotting the amount which each handler may purchase or handle on behalf of any and all producers;
- (3) establishing the quantity of the commodity that may be shipped to market during any specified period, the total quantity being allocated among all handlers under a uniform rule on the basis of past performance, or the proportionate amount of the commodity the handler has available for current shipment;
- (4) establishing methods for determining the extent of any surplus, for control and disposition of the surplus, and for equalizing the burden of surplus elimination among producers and handlers;



- (5) establishing a reserve pool of the product, and equitable distribution to all financially interested parties for returns derived from the sale of the pool;
- (6) inspecting the commodity;
- (7) fixing of the size, capacity, weight, dimensions or pack of the container used in handling of the commodity." (44:4)

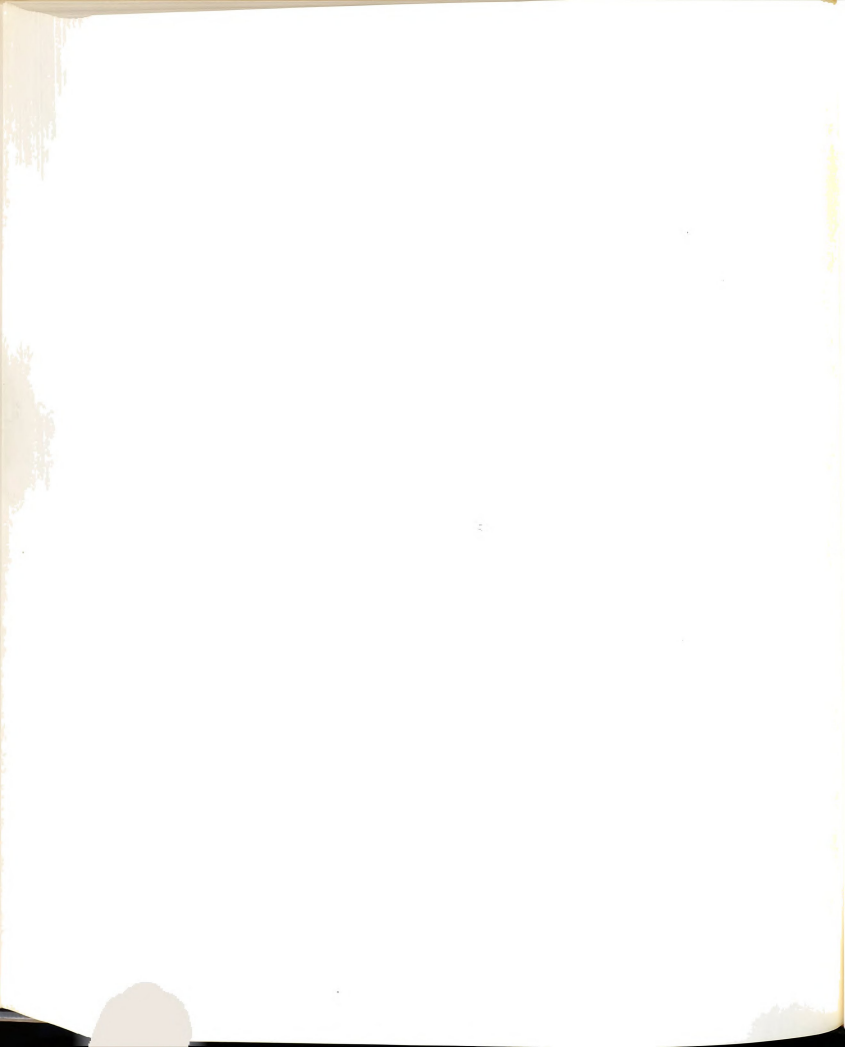
In addition, an order must also contain provisions to achieve one or more of the following:

- "(1) to prohibit unfair methods of competition and unfair trade practices in the handling of the commodity;
- (2) to require handlers to file their selling prices, and to sell at prices no lower than those filed--(handlers may change their prices at any time, but adequate notice must be given);
- (3) to provide for the selection by the Secretary of Agriculture of an agency to administer the order." (44:5)

A federal marketing order for crops, such as celery, may also "...contain provisions to establish marketing research and development projects designed to assist, improve or promote the marketing, distribution and consumption of the commodity or product." (44:5)



APPENDIX E



FIELD BUYER INTERVIEW

Company:
Individual:

I am with Michigan State University's Agricultural Economics Department. We are in the process of compiling a report that will be of assistance to the celery industry and serve as a model for other fruit and vegetable industries. The celery industry has been very forward looking in its marketing practices and organization. To assist us in compiling this report, we are interviewing a cross section of people connected with the celery industry.

Your individual identity will not be disclosed. We shall put you on the mailing list to receive a copy when it is published. Your assistance is very much appreciated.

1. As a celery buyer, what are your typical quality requirements?
(California quality)

2. What are the problems in meeting these quality requirements?

3. Do you believe that the use of more strict quality control standards would benefit the industry by making it possible to sell more celery to consumers at satisfactory prices?

☐ Yes ☐ No ☐ Don't Know

4. From your point of view, is lack of Michigan celery supply in most years a major problem?

☐ Yes ☐ No ☐ Sometimes ☐ Don't Know Explain.

5. From your experience as a buyer, could you outline in a general way those things which determine the prices you pay for Michigan celery? (Record order of response. After end of initial response, probe in these areas: MCPC, Quality, Discounts, Price relationships among areas, Substitutes, Complements, Availability of other crops, and In-store price changes.)



6. How would you describe the function you perform in the marketing of celery? (Do you actually purchase celery?, Types, Outlets.)
7. For what size of area do you operate?
8. What is the size of your operation in terms of celery volume handled during the 1965 Michigan season?
9. As related to celery procurement, whom do you consider your competition to be? Explain.

Now for the last part of the interview, I would like to ask your opinion of some of the existing and potential forms of market organization and practices.

10. From the point of view of the celery industry, do you favor the operation of a producer marketing cooperative?

☐ Yes ☐ No ☐ Not Sure

11. From the point of view of your business, do you favor the operation of a producer marketing cooperative?

☐ Yes ☐ No ☐ Not Sure

12. Which of the following activities do you feel a producer marketing cooperative should undertake?

A. Control quality to establish uniform grades and standards.

☐ For ☐ Against ☐ Not Sure

B. Attempt to establish pricing guides for the products.

☐ For ☐ Against ☐ Not Sure

C. Operate a central packing operation.

☐ For ☐ Against ☐ Not Sure

D. Act as a merchandising agency concerned with product advertising and promotion. ☐ For ☐ Against ☐ Not Sure

E. Market several vegetable crops.

☐ For ☐ Against ☐ Not Sure

F. Control the quantity of commodities produced and placed in marketing channels. ☐ For ☐ Against ☐ Not Sure



13. Can you conceive of any situation in which it would be advantageous for a producer marketing cooperative to take over the shipper function? ☐ Yes ☐ No ☐ Don't Know Explain.

14. Do you know what a state marketing order is? ☐ Yes ☐ No

If individual does not know what a state marketing order is, read this description to him:

Marketing orders permit producers, handlers, processors, and distributors to organize and establish control over the marketing of commodities. A marketing order binds the entire industry or group producing and handling the commodity. It is an attempt to achieve orderly marketing for an industry. The order may be issued by the State Director of Agriculture after a hearing and a prescribed voting procedure.

15. In general, would you be in favor of a state marketing order for celery? ☐ Yes ☐ No ☐ Don't Know
16. If you could vote on individual provisions of a proposed state marketing order for Michigan celery, how would you vote for the following provisions?

A. Developing and dissemination of industry economic information.

☐ For ☐ Against ☐ Not Sure

B. Quality control provision to establish uniform grades and standards. ☐ For ☐ Against ☐ Not Sure

C. Collection and use of advertising and promotion funds. ☐ For ☐ Against ☐ Not Sure

D. Collection and use of research and market development funds.

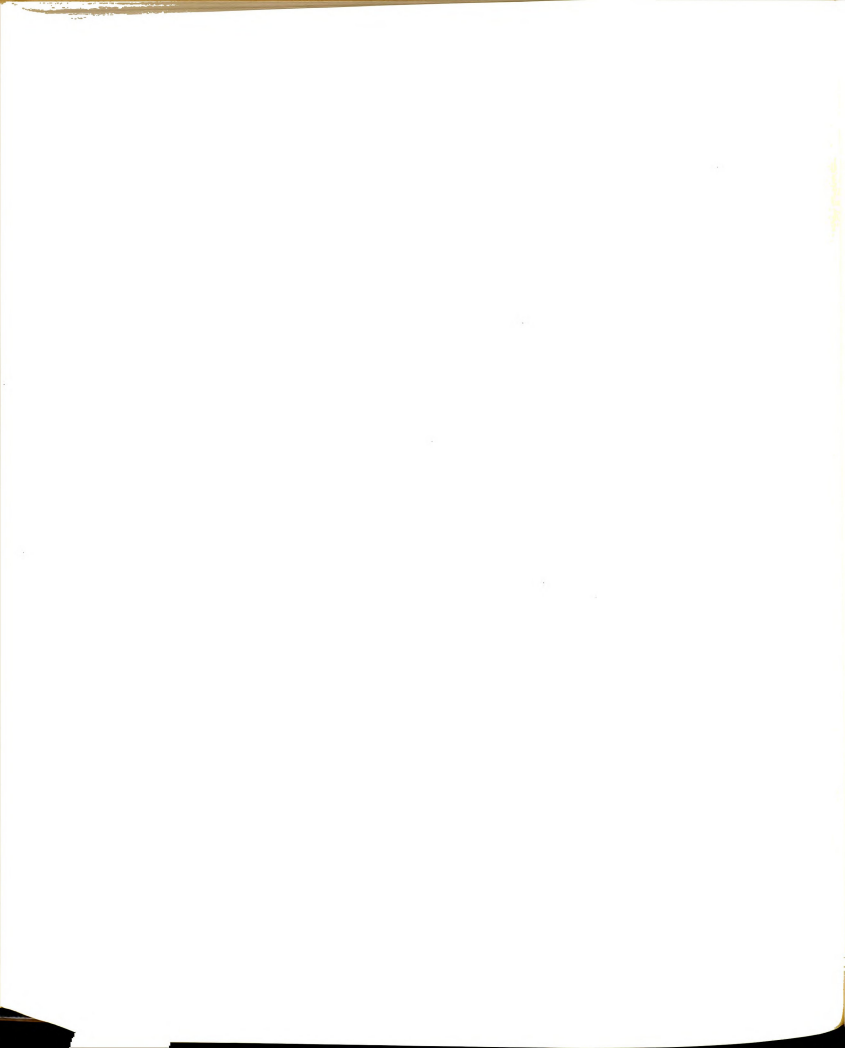
☐ For ☐ Against ☐ Not Sure

E. Quantity control provisions to regulate quantities produced and placed in marketing channels.

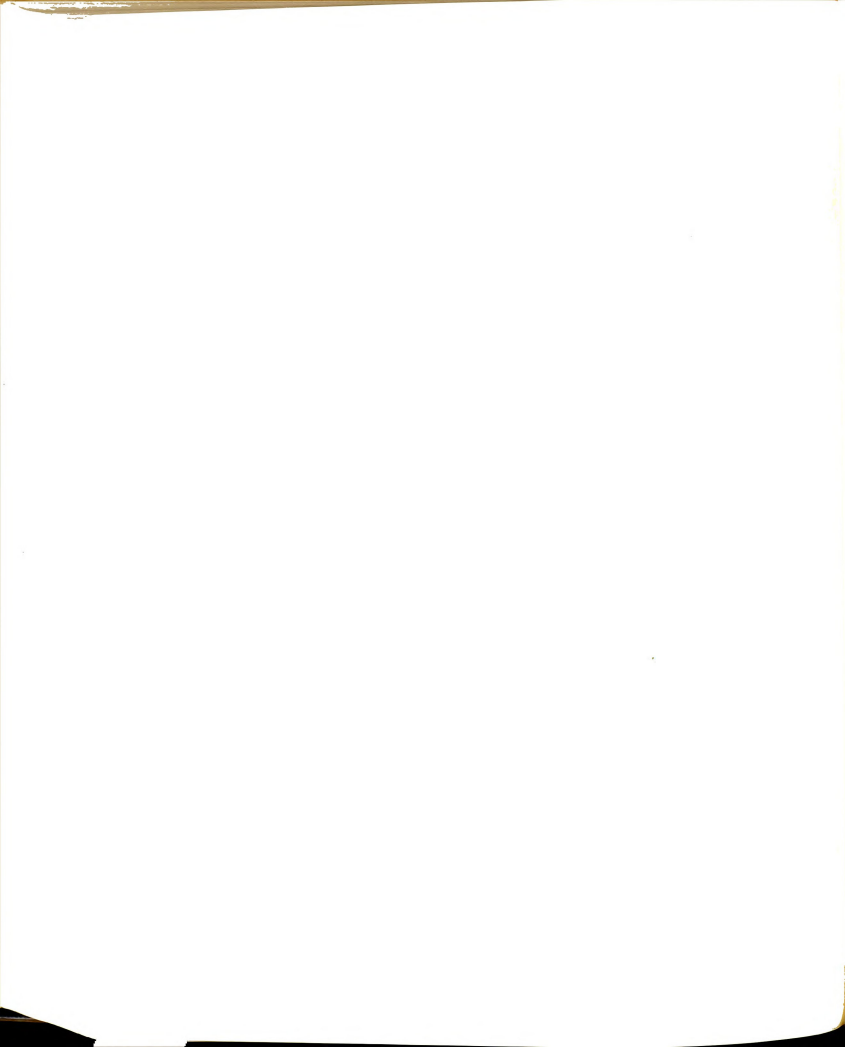
☐ For ☐ Against ☐ Not Sure

17. Does Michigan need a new or improved package or product to be competitive with other areas?

☐ Yes ☐ No ☐ Don't Know What do you suggest?



18. Which of the following will have the greatest influence in increasing the total demand for celery?
- ☐ A. General advertising of Michigan celery.
 - ☐ B. Advertising one or two brands.
 - ☐ C. Advertising many individual brands.
19. Over the next 10 years, what are the major changes that you expect to see in the celery industry?



PROCESSOR INTERVIEW

Company:
Individual:

I am with Michigan State University's Agricultural Economics Department. We are in the process of compiling a report that will be of assistance to the celery industry and serve as a model for other fruit and vegetable industries. The celery industry has been very forward looking in its marketing practices and organization. To assist us in compiling this report, we are interviewing a cross section of people connected with the celery industry.

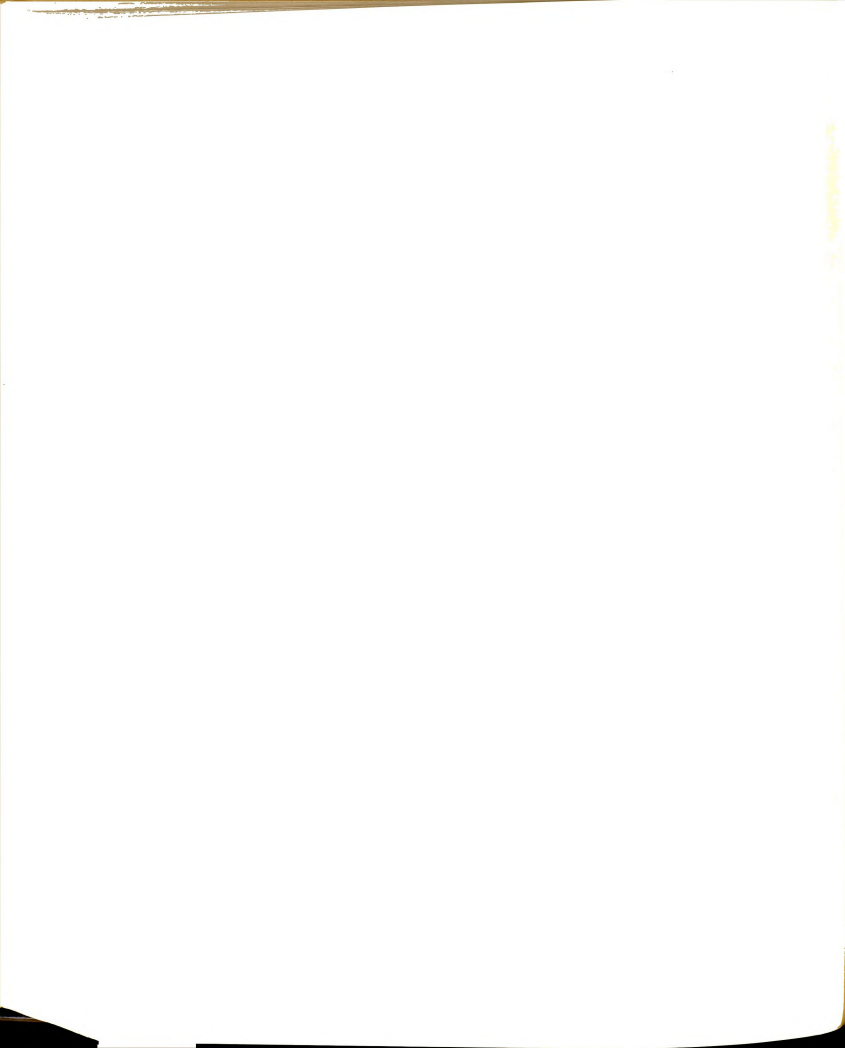
Your individual identity will not be disclosed. We shall put you on the mailing list to receive a copy when it is published. Your assistance is very much appreciated.

1. Do you use Michigan celery? ☒ Yes ☐ No ☐ Don't Know
2. As a celery buyer and processor, what are your typical quality requirements? (California quality)
3. What are the problems in meeting these quality requirements?
4. From your point of view, is lack of Michigan celery supply in most years a major problem?
☐ Yes ☐ No ☐ Sometimes ☐ Don't Know Explain.

For the following question use the word "Michigan" if they use Michigan celery. Omit the word "Michigan" if they do not use Michigan celery.

5. From your experience as a buyer, could you outline in a general way those things which determine the prices you pay for (Michigan) celery? (Record order of response. After end of initial response, probe in these areas: MCPC, Quality, Discounts, Price relationships among areas, Substitutes, and Availability of other crops.)

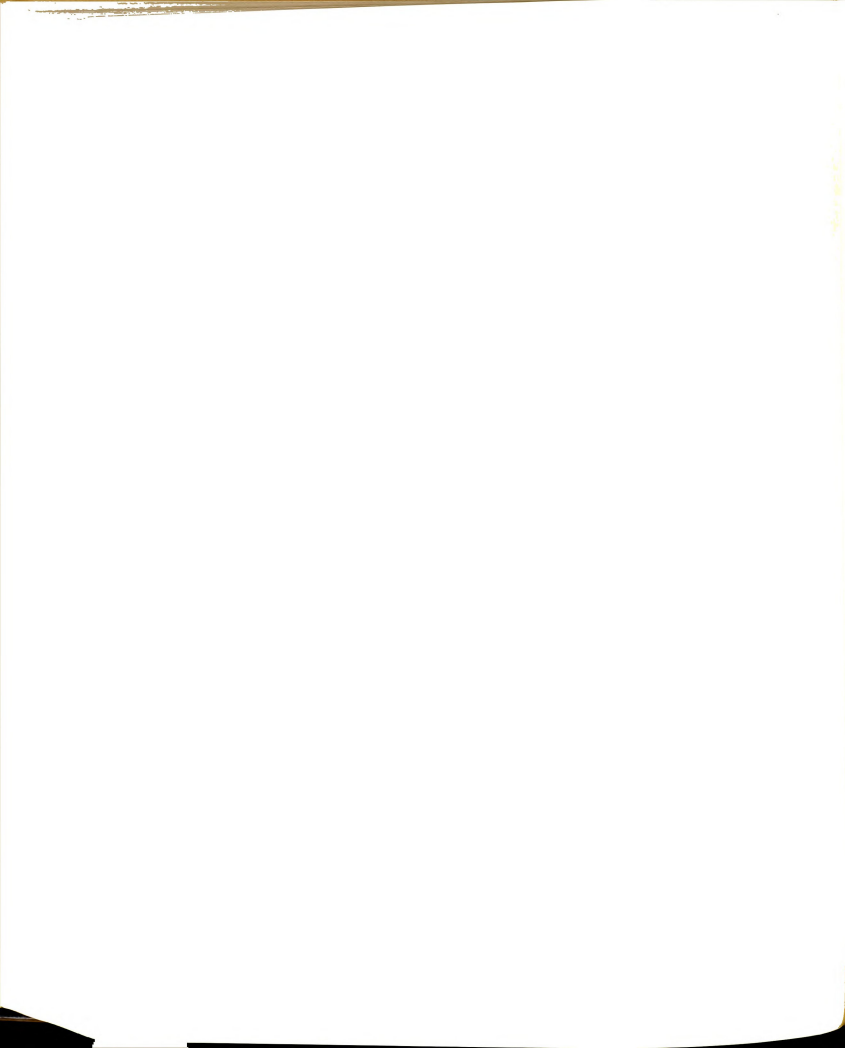
The following questions are to acquaint me a little more with product flow in the industry. In addition, they are meant to provide some indication of the part operations like yours play in the marketing of celery.



6. How would you describe the function you perform in the marketing of celery?
7. By percent of your 1965 annual celery volume, what are the forms in which you buy celery?
Bulk ____% Crates ____% Stemmed ____% Dried ____% Frozen ____%
8. Again, by percent of your 1965 annual celery volume, what are the types of outlets from which you buy celery?
☐ Contract with grower ☐ Shipper ☐ Broker
☐ Terminal House Buyer ☐ Other _____
9. By percent of your 1965 annual celery volume, what are the forms in which celery is sold? Soup ____% Stew ____% Juice ____%
Chinese food ____% Other _____
10. What were your 1965 annual celery requirements?
11. What percent of those requirements was Michigan celery?

Now for the last part of the interview, I would like to ask your opinion of some of the existing and potential forms of marketing organization and practices.

12. From the point of view of the celery industry, do you favor the operation of a producer marketing cooperative in Michigan?
☐ Yes ☐ No ☐ Not Sure
13. From the point of view of your business, do you favor the operation of a producer marketing cooperative? ☐ Yes ☐ No ☐ Not Sure
14. Which of the following activities do you feel a producer marketing cooperative should undertake?
- A. Control quality to establish uniform grades and standards.
☐ For ☐ Against ☐ Not Sure
 - B. Attempt to establish pricing guides for the products.
☐ For ☐ Against ☐ Not Sure
 - C. Operate a central packing operation.
☐ For ☐ Against ☐ Not Sure
 - D. Act as a merchandising agency concerned with product advertising and promotion. ☐ For ☐ Against ☐ Not Sure
 - E. Market several vegetable crops.
☐ For ☐ Against ☐ Not Sure



F. Control the quantity of commodities produced and placed in marketing channels. ☐ For ☐ Against ☐ Not Sure

15. Can you conceive of any situation in which it would be advantageous for a producer marketing cooperative to take over the shipper function? ☐ Yes ☐ No ☐ Don't Know Explain.

16. Do you know what a state marketing order is? ☐ Yes ☐ No

If individual does not know what a state marketing order is, read this description to him:

Marketing orders permit producers, handlers, processors, and distributors to organize and establish control over the marketing of commodities. A marketing order binds the entire industry or group producing and handling the commodity in a state. It is an attempt to achieve orderly marketing for an industry. The order may be issued by the State Director of Agriculture after a hearing and a prescribed voting procedure.

17. If you could vote on individual provisions of a proposed state marketing order for Michigan celery, how would you vote for the following provisions?

A. Developing and dissemination of industry economic information.
☐ For ☐ Against ☐ Not Sure

B. Quality control provision to establish uniform grades and standards. ☐ For ☐ Against ☐ Not Sure

C. Collection and use of advertising and promotion funds.
☐ For ☐ Against ☐ Not Sure

D. Collection and use of research and market development funds.
☐ For ☐ Against ☐ Not Sure

E. Quantity control provisions to regulate quantities produced and placed in marketing channels. ☐ For ☐ Against ☐ Not Sure

18. Does Michigan need a new or improved package or product to be competitive with other areas?
☐ Yes ☐ No ☐ Don't Know What do you suggest?

19. Which of the following will have the greatest influence in increasing the total demand for celery?

☐ A. General advertising of Michigan celery.

☐ B. Advertising one or two brands.



☐ C. Advertising many individual brands.

20. Over the next 10 years, what are the major changes that you expect to see in the celery industry?



SHIPPER INTERVIEW

Company:

Person Interviewed:

I am with the Michigan State University's Agricultural Economics Department. We are in the process of compiling a report that will be of assistance to the celery industry and serve as a model for other fruit and vegetable industries. You people in the celery industry have been very forward looking in your marketing practices and organization. To assist us in compiling this report, we are interviewing a cross section of people connected with the Michigan celery industry.

Your individual identity will not be disclosed. We shall put you on the mailing list to receive a copy when it is published. Your assistance is very much appreciated.

1. You sit at the crossroads of the pricing process. So, I would like to begin by asking you to outline in a general way those things which determine the prices of Michigan celery. (Record order of response. After end of initial response, probe in these areas: MCPC, Quality, Discounts, Fresh, Processing, Price relationships among areas, Substitutes, Complements, Availability of other crops, and In-store price changes.)
2. In most years, is the supply of Michigan celery adequate to meet buyers' needs during the season?
☐ Yes ☐ No ☐ Sometimes ☐ Don't Know Explain.
3. What are the typical quality requirements of the fresh celery buyer? (California quality)
4. What are the typical quality requirements of the processing celery buyer?
5. What are the problems in meeting buyer quality requirements?



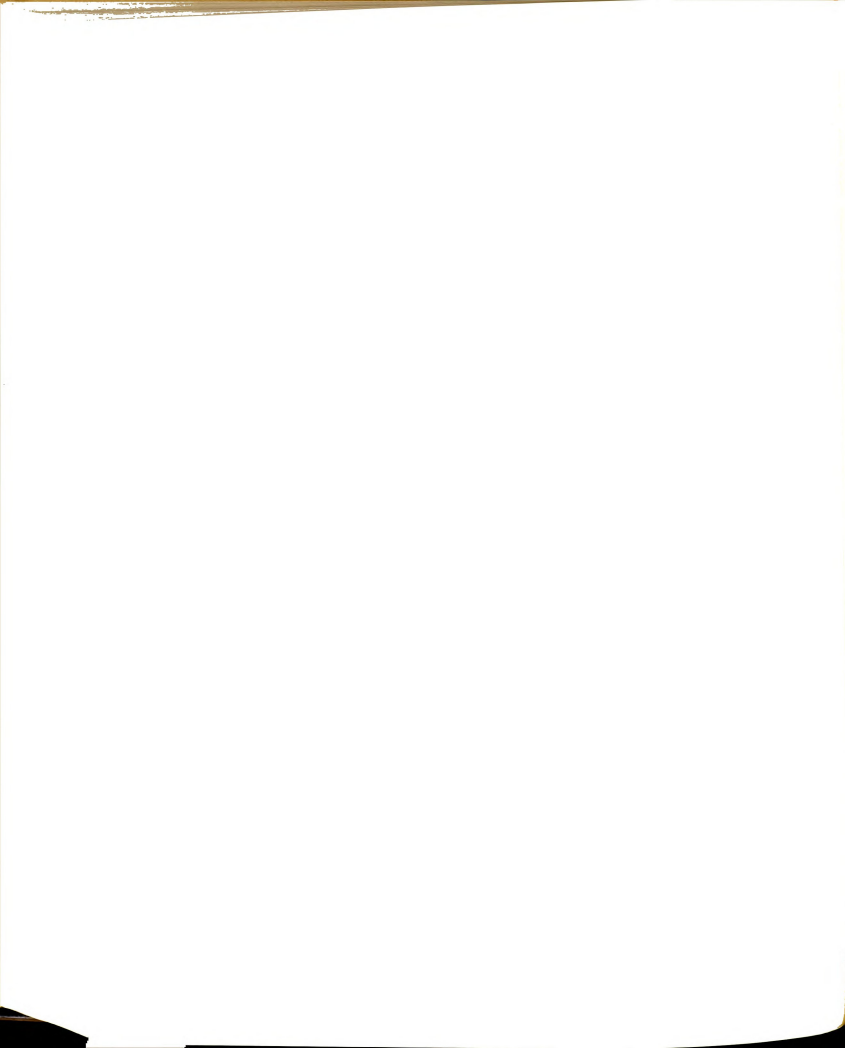
6. Do you believe that the use of more strict quality control standards would benefit the industry by making it possible to sell more celery to consumers at satisfactory prices?
- ☐ Yes ☐ No ☐ Don't Know

The following questions are to acquaint me a little more with product flow in the industry. In addition, they are meant to provide some indication of the part firms like yours play in the marketing of celery.

7. By percent of your 1965 annual celery volume, what are the forms in which you sell celery?
- Crates ____% Bulk ____% Stemmed ____% Hearts ____%
8. By percent of your 1965 annual celery volume, what are the types of outlets to which you sell celery? Chains ____% Independent ____%
Institutional ____% Hotel & Restaurant ____% Processors ____%
Other _____%
9. What is the size of your firm in terms of volume of celery handled during the 1965 season?
10. Whom do you consider your competition in the celery business to be? Explain. (After end of initial response, probe for vertical and horizontal competition.)
11. How would you describe the function you perform in the marketing of celery?

Now for the last part of the interview, I would like to ask your opinion of some of the existing and potential forms of market organization and practices.

12. Can you conceive of any situation in which a basis for sale other than f.o.b. shipping point would be desirable?
- ☐ Yes ☐ No ☐ Don't Know Explain.
13. From the point of view of the celery industry, do you favor the operation of a producer marketing cooperative?
- ☐ Yes ☐ No ☐ Not Sure
14. From the point of view of your business, do you favor the operation of a producer marketing cooperative?
- ☐ Yes ☐ No ☐ Not Sure



15. Which of the following activities do you feel a producer marketing cooperative should undertake?
- A. Control quality to establish uniform grades and standards.
☐ For ☐ Against ☐ Not Sure
 - B. Attempt to establish pricing guides for the products.
☐ For ☐ Against ☐ Not Sure
 - C. Operate a central packing operation.
☐ For ☐ Against ☐ Not Sure
 - D. Act as a merchandising agency concerned with product advertising and promotion. ☐ For ☐ Against ☐ Not Sure
 - E. Market several vegetable crops. ☐ For ☐ Against ☐ Not Sure
 - F. Control the quantity of commodities produced and placed in marketing channels. ☐ For ☐ Against ☐ Not Sure
16. Can you conceive of any situation in which it would be advantageous for a producer marketing cooperative to take over the shipper function? ☐ Yes ☐ No ☐ Don't Know Explain.

17. Do you know what a state marketing order is? ☐ Yes ☐ No

If individual does not know what a state marketing order is, read this description to him:

Marketing orders permit producers, handlers, processors, and distributors to organize and establish control over the marketing of commodities. A marketing order binds the entire industry or group producing and handling the commodity. It is an attempt to achieve orderly marketing for an industry. The order may be issued by the State Director of Agriculture after a hearing and a prescribed voting procedure.

18. In general, would you be in favor of a state marketing order for celery? ☐ Yes ☐ No ☐ Don't Know
19. If you could vote on individual provisions of a proposed state marketing order for Michigan celery, how would you vote for the following provisions?
- A. Developing and dissemination of industry economic information.
☐ For ☐ Against ☐ Not Sure
 - B. Quality control provision to establish uniform grades and standards. ☐ For ☐ Against ☐ Not Sure
 - C. Collection and use of advertising and promotion funds.
☐ For ☐ Against ☐ Not Sure



D. Collection and use of research and market development funds. ☐ For ☐ Against ☐ Not Sure

E. Quantity control provisions to regulate quantities produced and placed in marketing channels.
☐ For ☐ Against ☐ Not Sure

20. Does Michigan need a new or improved package or product to be competitive with other areas?

☐ Yes ☐ No ☐ Don't Know What do you suggest?

21. Which of the following will have the greatest influence in increasing the total demand for celery?

A. General advertising of Michigan celery. ☐

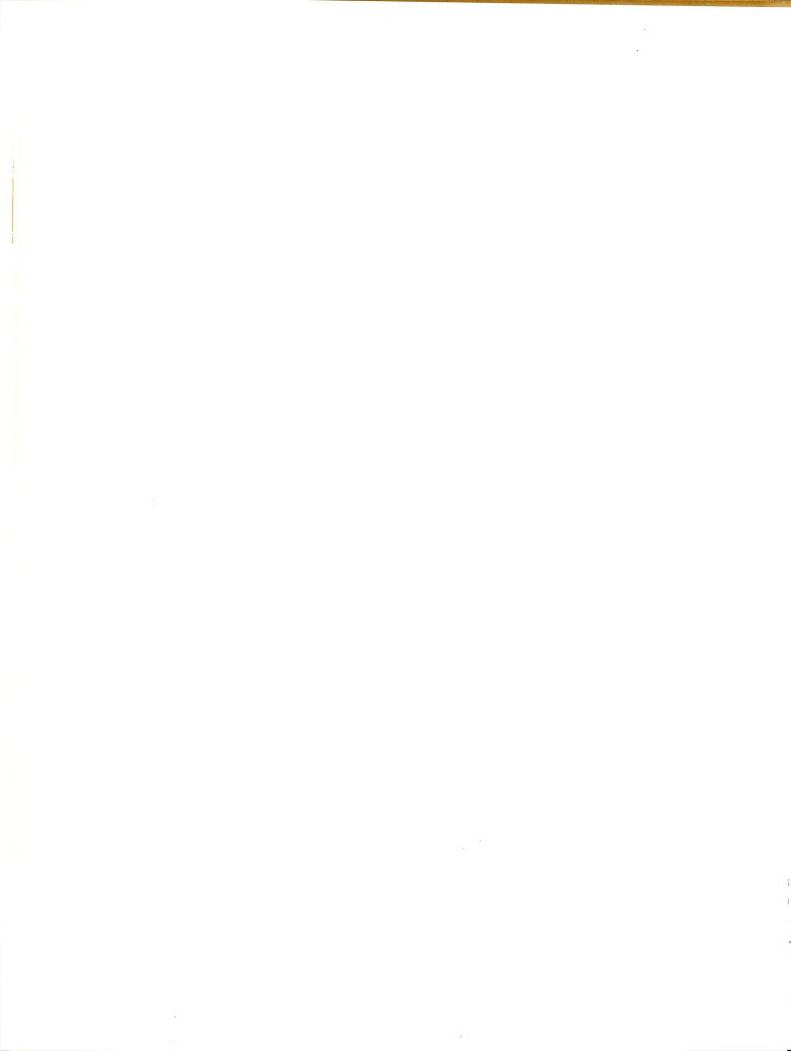
B. Advertising many individual brands. ☐

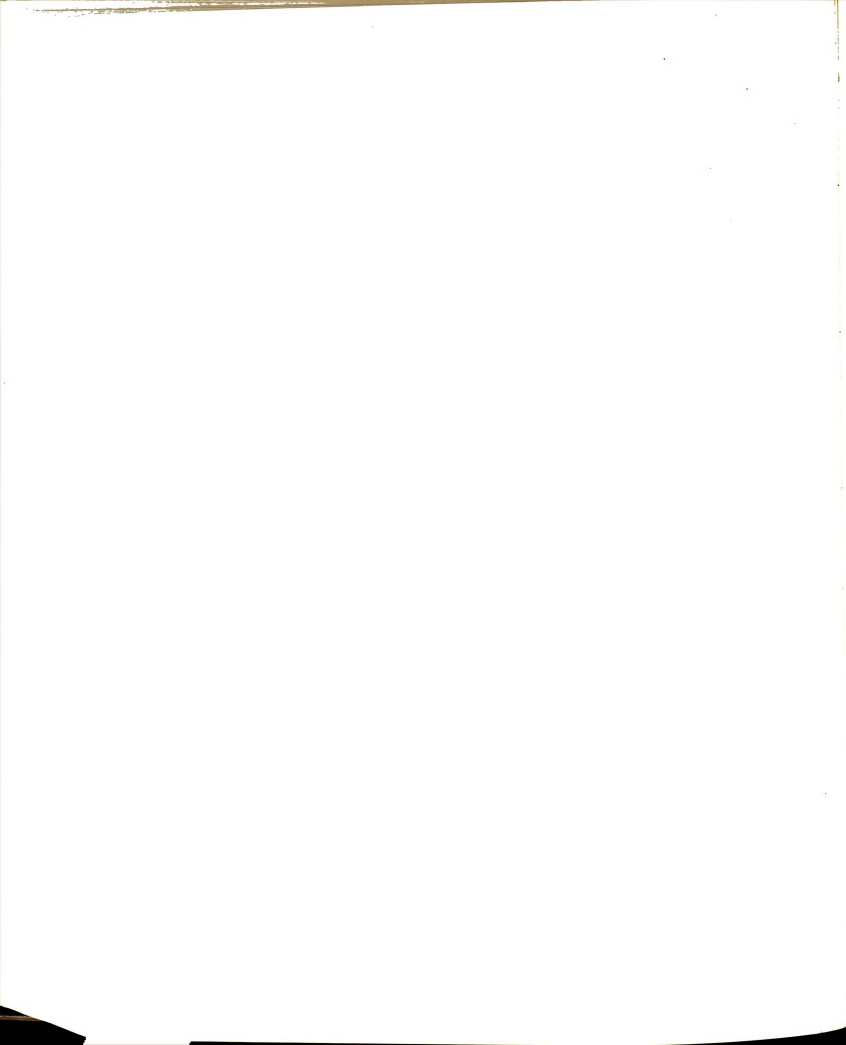
C. Advertising one or two brands. ☐

22. Over the next 10 years, what are the major changes that you expect to see in the celery industry?











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