

AN ECONOMIC EVALUATION OF MARKET INTEGRATION  
AND COORDINATION OF PROCESSED TART CHERRIES

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MICHEL HISER

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## ABSTRACT

### AN ECONOMIC EVALUATION OF MARKET INTEGRATION AND COORDINATION OF PROCESSED TART CHERRIES

By

Michel Hiser

Depressed prices for processed tart cherries, severe price instability, and the general inability of small independent processors to adequately service large buyers have resulted from the present marketing structure of cherry processors. This has resulted in low economic returns to both processors and growers. The recent movement toward on-farm processing threatens to significantly amplify those problems.

This study was undertaken to analyze the current marketing situation and explore some alternative marketing structural changes to improve the marketing of processed tart cherries. Appraisal of the current marketing environment for processed tart cherries was accomplished through examination of: (1) the present factors affecting the entire marketing mechanism for processed tart cherries, (2) processor appraisal of the current marketing situation and their reactions toward structural

changes, (3) a detailed economic study of the recent on-farm processing development and its effect on the processing industry.

Examination of the marketing structure for processed tart cherries reveals an ineffective marketing mechanism in many respects. The competitive imbalance between the small independent tart cherry processors and the concentrated buyer remanufacturer has significantly disrupted the pricing mechanism. The raw product procurement practices of processors and the tendency of brokers to deviate from their role of impartiality has served to further disrupt the pricing structure. The net effect of this situation is: (1) to create severe pricing instability for all parties, (2) industry producers (growers, processors, and buyers) operate within an environment of great uncertainty, (3) to generally depress the market for processed tart cherries, (5) to provide low profit margins for processors (and growers), and (5) to hamper product innovation, promotion, and industry growth and market development.

In addition to pricing problems, the current marketing structure does not permit a smooth flow of product from the processor to the buyer. Small independent processors encounter difficulty providing buyers with the volume, quality, and product services they need.



The economic analysis of on-farm processing indicates significant future growth is likely to occur. This analysis of the new processing system which was accomplished through gathering and analyzing data obtained from all the existing on-farm processing firms, shows that firms processing 750,000 pounds of cherries or more per year could be expected to be profitable. In addition to its indicated profitability, additional advantages of on-farm processing which will enhance its growth rate are: (1) the ability to produce a higher quality finished product, (2) on-farm processing provides growers with a guaranteed initial outlet for their raw product, and (3) significant advantages over traditional processing firms with regard to disposal of waste water. The anticipated growth of on-farm processing will by further fragmenting processing sales significantly amplify certain marketing and structural problems.

Most independent producers interviewed in the processor survey expressed a need to change the current marketing structure. Processors in favor of market restructuring expressed intensive desire to strengthen their competitive sales position without loss of their independent firm identity.

A number of relevant marketing alternatives that could influence the marketing situation for processed tart cherries were explored in relation to the

current marketing situation. Considering the current marketing problems and industry attitudes, a cooperative consolidated sales organization developed and operated jointly by growers and processors would provide the most feasible change in the current processed tart cherry market structure. A joint grower-processor cooperative sales organization would be desirable because of: (1) its legal advantages relative to other marketing alternatives, (2) it would encourage the development of a cooperative working relationship between processors and growers, (3) joint participation in a cooperative would enhance its organizational appeal to processors, (4) it would correlate well with future proposed grower bargaining legislation.

Consolidated sales could provide: (1) greater industry price stability, (2) fair returns for the productive services of growers and processors, (3) greater product innovation, and (4) demand expansion. Accomplishment of these objectives would be of substantial benefit to the entire tart cherry industry.

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AND COORDINATION OF PROCESSED TART CHERRIES

By

Michel Hiser

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## TABLE OF CONTENTS

| Chapter   | Page |
|---|------|
| I. INTRODUCTION . . . . .   | 1    |
| II. THE PROBLEM SETTING. . . . .  | 6    |
| Production Location and Tree Numbers . . . . .  | 6    |
| Michigan Cherry Processors. . . . .   | 10   |
| Tart Cherry Market Channels . . . . .   | 13   |
| Frozen Tart Cherry Markets. . . . .   | 13   |
| The Pricing Mechanism for Processed<br>Tart Cherries . . . . .                                | 15   |
| Major Marketing Problem Areas. . . . .  | 21   |
| Market Imbalance . . . . .  | 21   |
| Providing Buyer Services. . . . .   | 22   |
| Future Problems. . . . .  | 23   |
| Summary . . . . .   | 25   |
| III. THE PROCESSOR SURVEY . . . . .   | 26   |
| Purpose and Design . . . . .  | 26   |
| Survey Implementation . . . . .   | 27   |
| Survey Results. . . . .   | 29   |
| Part I. Industry Problems and Con-<br>solidated Sales as a Marketing<br>Alternative . . . . . | 29   |
| Part II. The On-Farm Processing<br>Trend . . . . .  | 46   |
| Part III. Environmental Quality<br>Problems . . . . .   | 50   |
| Survey Summary. . . . .   | 52   |

| Chapter  | Page |
|--|------|
| IV. ON-FARM PROCESSING . . . . .   | 57   |
| Introduction . . . . .   | 57   |
| Characteristics of the On-Farm Processing<br>Operation. . . . .                      | 58   |
| The Development of On-Farm Processing . .  | 60   |
| Costs of On-Farm Processing . . . . .  | 64   |
| Synthesized Plant Model . . . . .  | 64   |
| Plant Capacity . . . . .   | 71   |
| Investment Costs . . . . .   | 73   |
| Manpower Requirements. . . . .   | 74   |
| Summary of On-Farm Processing Costs . .  | 74   |
| Calculation of Cost Estimates . . . .  | 79   |
| Comments Concerning the Synthetic<br>Plant Costs. . . . .                            | 88   |
| Economic Evaluation of On-Farm<br>Processing. . . . .                                | 92   |
| Future On-Farm Processing Growth in<br>Michigan . . . . .                            | 100  |
| V. ALTERNATIVES TO IMPROVE MARKETING AND<br>SALES OF PROCESSED TART CHERRIES . . . . | 102  |
| Introduction . . . . .   | 102  |
| Objectives and Obstacles of Marketing<br>Alternatives. . . . .                       | 104  |
| Marketing Objectives . . . . .   | 105  |
| Marketing Obstacles . . . . .  | 107  |
| Market Structure Alternatives. . . . .   | 109  |
| Alternatives Involving Non-Collective<br>Action . . . . .                            | 109  |
| Alternative 1: Continuation of<br>the Present Situation . . . . .                    | 109  |
| Alternative 2: Voluntary Exit from<br>the Industry . . . . .                         | 114  |
| Processor-Oriented Marketing<br>Alternatives . . . . .                               | 115  |
| Alternative 3: Processor Merger . .  | 115  |
| Alternative 4: Processor Forward<br>Vertical Integration. . . . .                    | 118  |



| Chapter   | Page |
|---|------|
| Alternative 5: Processor Merger<br>with Buyer Users . . . . .   | 125  |
| Alternative 6: Processor-Oriented<br>Consolidated Sales . . . . .   | 129  |
| Grower-Oriented Marketing Alternatives .  | 133  |
| Alternative 7: Grower-Oriented<br>Cooperative Structures . . . . .  | 133  |
| Alternative 8: Joint Grower-Processor<br>Alternatives . . . . .   | 137  |
| The Most Advantageous Type of Restructur-<br>ing to Improve the Marketing Situation<br>for Processed Tart Cherries. . . . . | 143  |
| Advantages of a Joint Consolidated<br>Sales Organization . . . . .  | 144  |
| Disadvantages of Market Consolidation .   | 149  |
| Feasibility of a Tart Cherry Consoli-<br>dated Sales Organization . . . . .   | 153  |
| VI. SUMMARY AND CONCLUSION. . . . .   | 156  |
| REFERENCES . . . . .  | 167  |
| APPENDIX. . . . .   | 168  |

## LIST OF TABLES

| Table   | Page |
|---|------|
| 1. Tart Cherry Production by States and Regions .                                     | 7    |
| 2. Michigan Tart Cherry Production by Areas . .                                       | 9    |
| 3. Tart Cherry Tree Numbers by States . . . .   | 11   |
| 4. Survey Response Summary . . . . .  | 30   |
| 5. On-Farm Processing Investment Costs . . . .  | 73   |
| 6. On-Farm Processing Labor Costs (per hour of<br>operation). . . . .                 | 75   |
| 7. Annual On-Farm Processing Costs . . . . .  | 77   |
| 8. Costs per Pound of On-Farm Processing . . .  | 78   |
| 9. Processing Margins for Frozen Tart Cherries<br>1960-1970 . . . . .                 | 94   |
| 10. Average Processing Margins . . . . .  | 94   |
| 11. Estimated Average Profits for On-Farm<br>Processing (One-Month Storage) . . . . . | 96   |
| 12. Estimated Average Profits for On-Farm<br>Processing (Four-Month Storage). . . . . | 96   |

## LIST OF FIGURES

| Figure  | Page |
|---|------|
| 1. Michigan Tart Cherry Production by Areas . .                             | 8    |
| 2. Major Utilization and Market Channels for<br>Red Tart Cherries . . . . . | 14   |
| 3. On-Farm Processing Plant Layout . . . . .                                | 65   |
| 4. On-Farm Processing Labor Requirements . . .                              | 67   |
| 5. Current Situation. . . . .   | 111  |
| 6. Processor Merger . . . . .   | 117  |
| 7. Processor Vertical Integration . . . . .                                 | 121  |
| 8. Processor Merger with National Food Firms. .                             | 126  |
| 9. Grower or Joint Grower-Processor Cooperative.                            | 135  |
| 10. Joint Grower-Processor Confederated Sales. .                            | 139  |

## CHAPTER I

### INTRODUCTION

Persistent marketing problems have plagued the processed tart cherry industry over the past few years. Changes within the marketing structure for processed tart cherries have not kept pace with the marketing environment in which they must function. Failing to make adequate adjustment within their dynamic marketing environment, tart cherry processors operate within an industry characterized by very unstable prices and low profit margins. The present tart cherry marketing structures' inability to provide adequate buyer services and support innovational activities has also retarded industry growth and development.

One of the most serious problems confronting tart cherry processors is their frequently low profit margins. The very structure of the market in which they must operate constitutes the major factor depressing profit margins. While many small independent processors compete for processed tart cherry sales, volume buyers are few and highly concentrated. Further contributing to the weak competitive

position (relative to buyers) of tart cherry processors is the presence of a sizable number of underfinanced sellers who frequently are forced to sell at prices lower than warranted by the market. "Distress sales" often set the pricing pattern throughout the industry. These "distress sales" also provide the mechanism enabling powerful buyers to manipulate prices by playing one processor against another. Consequently, in the past, processing profit margins have been quite small relative to processing costs.

The marketing problems plaguing tart cherry processors are not limited to an unfavorable pricing structure. Independent processors have not been able to provide sufficient buyer services. Large buyers require a large volume of a specified quality pack delivered at a designated time. The current marketing structure for processed tart cherries does not permit smooth efficient coordination of these services. Buyers frequently spend a great deal of time and money searching for the quality and volume of pack they desire. In addition to product coordination difficulties, independent processors individually lack the sufficient resources necessary to stimulate industry market growth and development. Supporting research and new product development, extensive promotional programs, and developing new markets require large sums of money. Most of the cherry processing firms cannot afford to pursue these activities to a significant degree.

Partly as a result of this, industry growth and development has been extremely slow.

In a free market system, one would logically expect that the low profit margins in the tart cherry industry would encourage the exit of the more inefficient processors. The eventual elimination of the financially weaker processors would strengthen the position of those remaining. Prior to 1968 that was happening, but at a fairly slow rate. By contrast, the past three years has witnessed a reversal of this trend toward greater concentration into fewer tart cherry processing firms.

Over the past three years a few of the large tart cherry growers have constructed small processing facilities on their own farms to coordinate with mechanical harvesting. The entry of these new processors has significantly reversed the movement toward fewer sellers of processed tart cherries. The future growth and development of these "on-farm processing" firms is of such importance to the processing structure and marketing environment of the tart cherry industry, that a detailed study of this new processing trend was undertaken as a part of this thesis (discussed in detail in Chapter IV).

Tart cherry processors have traditionally been characterized as extremely independent individuals adamantly opposed to governmental interference or collective action concerning their business affairs. The



persistent severity of the tart cherry marketing problem, coupled with an influx of progressive leadership appears to have altered processor attitudes somewhat. Market manipulation programs designed to improve the marketing situation for processed tart cherries have become far more palatable to processors. Recent processor support of the Federal Marketing Order for tart cherries provides one form of evidence supporting these changes in attitude.

In light of changing processor attitudes toward market manipulation programs, progressive leaders are now exploring and working to tap the potential marketing improvements obtainable through collective action to market frozen cherries (consolidated sales). Considering the processors' long history of conservative individualistic behavior, fruitful examination of any comprehensive marketing change requires careful evaluation of processor opinions and attitudes toward the current marketing situation and any proposed changes. Industry leadership selection by processors or growers of the most suitable marketing program involves close consideration and evaluation of: (1) the nature of current and future marketing problems, (2) processor attitudes, (3) the available marketing alternatives, and (4) an economic evaluation of these. The research effort culminating in this thesis will, by exploring these important factors, hopefully contribute to a better understanding of the total marketing situation

confronting tart cherry processors. It is hoped this information will be helpful to the industry by stimulating some restructuring changes and the development of a more healthy and economically stable industry. The specific objectives of this thesis are:

1. To examine the current marketing structure for processed tart cherries.
2. To explore the problems connected with the current marketing practices involving frozen tart cherries.
3. To analyze the economics of the recent vertical integration movement of cherry growers into processing of frozen tart cherries (on-farm processing).
4. To determine and analyze the opinions and attitudes of tart cherry processors concerning current industry marketing problems, new structural development, and possible actions to alter and improve the present structure.
5. To analyze theoretical marketing alternatives to improve the present marketing situation for processors of tart cherries (with particular emphasis on the frozen pack).

## CHAPTER II

### THE PROBLEM SETTING

#### Production Location and Tree Numbers

Michigan is the leading tart cherry producing state with an average of between 65 percent and 70 percent of the total United States crop (see Table 1). Within the state, tart cherry production is located along the western coast of Lake Michigan (see Figure 1). Production in Michigan is heavily concentrated into three areas:

1. The southwestern section of the state concentrated in Berrien and Van Buren counties.
2. The central western section encompassing Oceana and Mason counties.
3. The northwest section stretching from Manistee County to Antrim County.

Normally about 50 percent of the Michigan tart cherry production comes from the northwestern part of the state. The southwestern section produces on the average about 30 percent of Michigan's total, the remaining 20 percent is produced in the west central section (see Table 2).

TABLE 1. Tart Cherry Production by States and Regions

| Year              | Michigan | New York | Pennsylvania | Wisconsin | Western States <sup>a</sup> | Total U.S. | Michigan Percentage of U.S. Total |
|-------------------|----------|----------|--------------|-----------|-----------------------------|------------|-----------------------------------|
| -----tons-----    |          |          |              |           |                             |            |                                   |
| 1952-55           | 65,375   | 24,150   | 9,650        | 15,625    | 9,613                       | 125,983    | 51.9                              |
| 1956-59           | 69,875   | 19,500   | 10,100       | 10,625    | 10,158                      | 121,795    | 57.4                              |
| 1960-63           | 80,875   | 20,550   | 9,650        | 11,475    | 10,953                      | 134,393    | 60.2                              |
| 1964-67           | 102,125  | 21,225   | 9,925        | 10,800    | 11,748                      | 156,905    | 65.1                              |
| 1968-71           | 93,500   | 17,995   | 8,550        | 5,358     | 11,155                      | 137,568    | 68.0                              |
| 1962              | 117,000  | 19,700   | 11,000       | 13,000    | 14,540                      | 176,250    | 66.2                              |
| 1963              | 37,000   | 20,300   | 8,300        | 7,200     | 8,060                       | 80,810     | 45.6                              |
| 1964              | 190,000  | 32,000   | 17,500       | 21,400    | 10,840                      | 273,370    | 69.3                              |
| 1965              | 120,000  | 24,800   | 12,500       | 8,000     | 9,910                       | 176,510    | 68.0                              |
| 1966              | 54,500   | 6,000    | 8,700        | 7,000     | 12,350                      | 89,450     | 60.9                              |
| 1967              | 44,000   | 22,100   | 1,000        | 6,800     | 13,890                      | 88,290     | 49.8                              |
| 1968              | 100,000  | 14,300   | 7,500        | 6,000     | 8,420                       | 137,520    | 72.7                              |
| 1969              | 111,000  | 15,800   | 11,000       | 3,040     | 15,790                      | 157,950    | 70.3                              |
| 1970              | 83,000   | 19,800   | 8,100        | 4,390     | 8,860                       | 125,150    | 66.3                              |
| 1971 <sup>b</sup> | 80,000   | 22,000   | 7,600        | 8,000     | 11,550                      | 129,650    | 61.7                              |

<sup>a</sup>Montana, Idaho, Colorado, and Utah.<sup>b</sup>Preliminary.Source: U.S. Census of Agriculture, Bureau of the Census, Department of Commerce.

# MICHIGAN TART CHERRY PRODUCTION BY AREAS



Figure 1

TABLE 2. Michigan Tart Cherry Production by Areas

| Crop<br>Year | Region         |              |           | State<br>Total |
|--------------|----------------|--------------|-----------|----------------|
|              | Northwest      | Central-West | Southwest | Other          |
|              | -----tons----- |              |           |                |
| 1949         | 34,400         | 13,500       | 10,000    | 2,600          |
| 1950         | 46,300         | 17,500       | 30,000    | 3,200          |
| 1951         | 43,400         | 17,500       | 20,100    | 2,500          |
| 1952         | 30,900         | 16,800       | 16,900    | 1,900          |
| 1953         | 42,800         | 15,300       | 15,800    | 2,100          |
| 1954         | 12,100         | 16,700       | 17,700    | 1,500          |
| 1955         | 39,000         | 17,100       | 13,700    | 1,200          |
| 1956         | 28,800         | 13,600       | 11,500    | 1,100          |
| 1957         | 36,100         | 22,300       | 28,900    | 1,700          |
| 1958         | 22,600         | 2,800        | 22,300    | 1,800          |
| 1959         | 41,600         | 23,000       | 19,900    | 1,500          |
| 1960         | 39,800         | 9,600        | 29,500    | 1,100          |
| 1961         | 31,200         | 19,000       | 37,500    | 1,800          |
| 1962         | 59,000         | 25,000       | 31,900    | 1,100          |
| 1963         | 24,500         | 6,900        | 5,100     | 500            |
| 1964         | 91,500         | 38,000       | 57,500    | 3,000          |
| 1965         | 69,500         | 26,500       | 22,500    | 1,500          |
| 1966         | 32,000         | 8,500        | 13,000    | 1,000          |
| 1967         | 18,000         | 7,000        | 18,300    | 700            |
| 1968         | 58,300         | 30,600       | 9,500     | 1,600          |
| 1969         | 43,100         | 28,100       | 39,000    | 800            |
| 1970         | 36,000         | 17,000       | 29,000    | 1,000          |
|              |                |              |           | 60,500         |
|              |                |              |           | 97,000         |
|              |                |              |           | 83,500         |
|              |                |              |           | 66,500         |
|              |                |              |           | 76,000         |
|              |                |              |           | 48,000         |
|              |                |              |           | 71,000         |
|              |                |              |           | 55,000         |
|              |                |              |           | 89,000         |
|              |                |              |           | 49,500         |
|              |                |              |           | 86,000         |
|              |                |              |           | 80,000         |
|              |                |              |           | 89,500         |
|              |                |              |           | 117,000        |
|              |                |              |           | 37,000         |
|              |                |              |           | 190,000        |
|              |                |              |           | 120,000        |
|              |                |              |           | 54,500         |
|              |                |              |           | 44,000         |
|              |                |              |           | 100,000        |
|              |                |              |           | 111,000        |
|              |                |              |           | 83,000         |

Source: Michigan Crop Reporting Service.



The 1969 Census of Agriculture shows a decrease in the number of tart cherry trees (both bearing and non-bearing) between 1964 and 1969. Although the number of trees within the states taken as a whole have decreased, tree numbers in Michigan have remained fairly stable (see Table 3).

#### Michigan Cherry Processors

Michigan processors pack, on the average, approximately 65 percent of the national frozen pack and 67 percent of the national canned pack. Michigan processors may be categorized as independents, national companies, cooperatives, and on-farm processors (a special type of independent operation). Independents, cooperatives, and on-farm processors primarily sell frozen cherries to buyer firms for use in such items as pies, desserts, and preserves. In addition some canned cherry sales are made by these processing firms usually under private label. The national companies (with the exception of Stokely's) make pies, pie filling, and other cherry desserts in addition to the processing of tart cherries. Most national companies sell very little of their frozen pack on the open market like the other packers. Instead the national companies frequently buy small quantities of frozen cherries from the open market to fill their needs.

In total there are twenty-five independent processors located in the state of Michigan. Twelve of these

TABLE 3. Tart Cherry Tree Numbers by States

| State  | 1950<br>Census        | 1954<br>Census | 1959<br>Census | 1964<br>Census | 1969<br>Census |
|--|-----------------------|----------------|----------------|----------------|----------------|
| <u>Bearing Trees</u>                                       | -----1,000 trees----- |                |                |                |                |
| Michigan   | 2,176                 | 2,570          | 3,357          | 3,478          | 3,249          |
| New York   | 856                   | 825            | 827            | 643            | 501            |
| Pennsylvania   | 327                   | 479            | 375            | 290            | 248            |
| Wisconsin  | n.a.                  | 822            | 892            | 721            | 347            |
| Western States <sup>a</sup>                                | 509                   | 404            | 393            | 410            |                |
| United States  | 3,977                 | 5,107          | 5,951          | 5,644          |                |
| <u>Non-bearing Trees</u>                                   |                       |                |                |                |                |
| Michigan   | 907                   | 1,173          | 773            | 700            | 550            |
| New York   | 302                   | 180            | 144            | 107            | 103            |
| Pennsylvania   | 168                   | 107            | 56             | 50             | 29             |
| Wisconsin  | n.a.                  | 236            | 265            | 103            | 70             |
| Western States <sup>a</sup>                                | 271                   | 102            | 166            | 108            |                |
| United States  | 1,690                 | 1,802          | 1,428          | 1,086          |                |
| <u>Non-bearing Trees as a<br/>Percent of Bearing Trees</u> | -----percent-----     |                |                |                |                |
| Michigan   | 42                    | 46             | 23             | 20             | 17             |
| New York   | 35                    | 22             | 17             | 17             | 21             |
| Pennsylvania   | 51                    | 22             | 15             | 17             | 12             |
| Wisconsin  | n.a.                  | 29             | 19             | 14             | 20             |
| Western States <sup>a</sup>                                | 53                    | 25             | 42             | 26             |                |
| United States  | 42                    | 35             | 24             | 19             |                |

n.a.: Not available. <sup>a</sup>Montana, Idaho, Colorado, Utah, Washington, and Oregon.

Source: U.S. Census of Agriculture, Bureau of the Census, U.S. Department of Commerce.

firms pack only frozen cherries, seven pack both frozen and canned, the remaining six packers deal exclusively with the hot pack (canned pack). As a group independent processors pack 56 percent of all cherries packed within the state of Michigan, which amounts to about 62 percent of Michigan's frozen pack (or about 40 percent of the national frozen pack).

National processing companies producing in Michigan total six in number and on the average produce approximately 34 percent of all cherries processed in the state. Included in this pack is about 21 percent of the Michigan frozen pack or 13 percent of the total national frozen pack.

Three cooperative processing firms operate within the state of Michigan. As a group these firms pack approximately 16 percent of the total Michigan pack. Cooperatives produce 20 percent of the Michigan frozen pack (which accounts for 13 percent of the national frozen pack).

The on-farm processing or grower-processor firms totaled five in number in 1971. In total they pack 8 percent of all cherries processed in Michigan which includes 11 percent of the Michigan frozen pack or 8 percent of the national frozen pack.

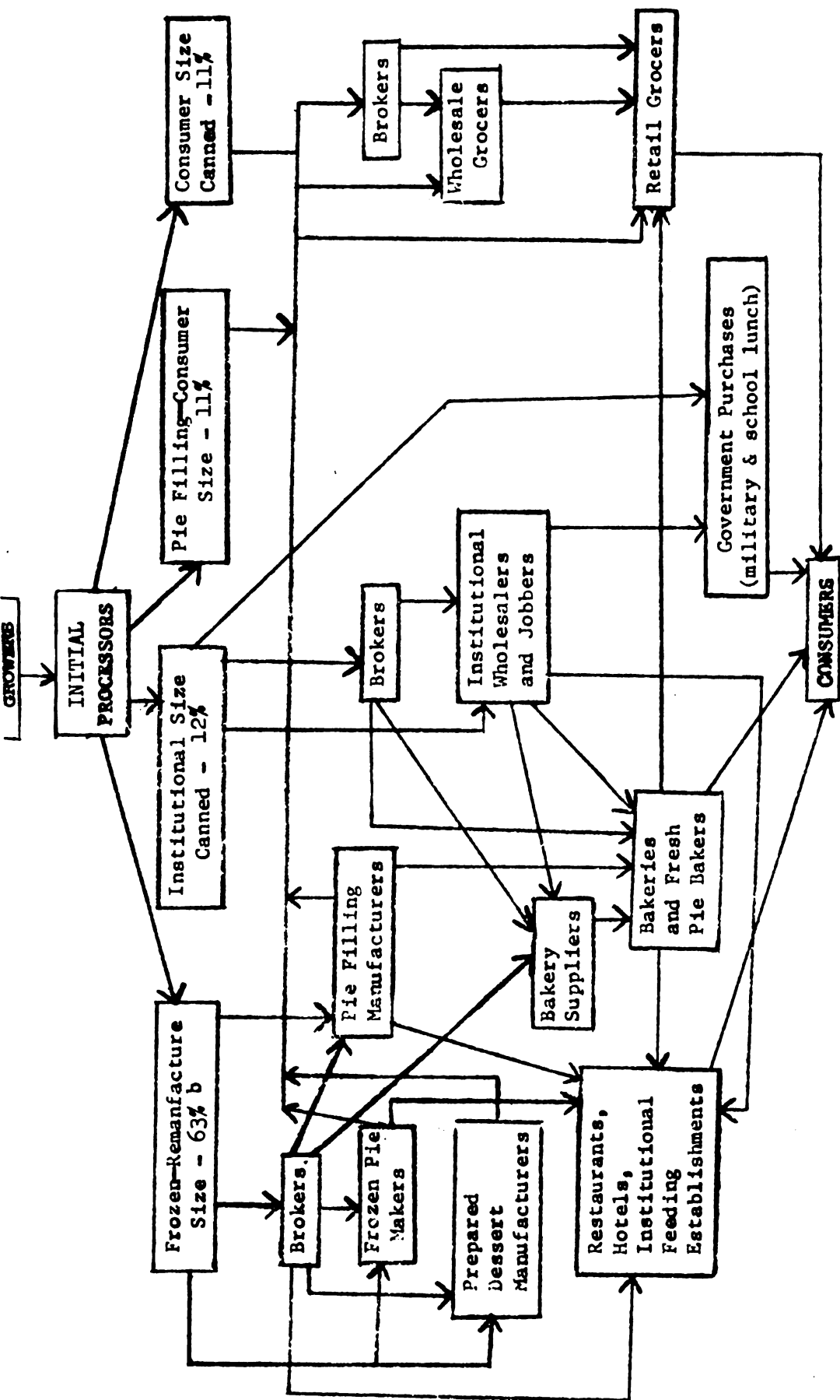
### Tart Cherry Market Channels

Processors pack raw tart cherries into three types of pack--frozen, canned, and pie filling. Frozen cherries are almost exclusively sold to buyer manufacturers for use in such products as pies, desserts, and pie filling. The hot pack (canned) is processed into two can sizes: the consumer size can (No. 303) and the institutional size can (No. 10). Processor packed pie filling is primarily sold in consumer size cans. Figure 2 shows the percentages of the national pack going into these four main markets.

### Frozen Tart Cherry Markets

Pie and dessert manufacturing firms are the largest customers of frozen tart cherries. Large pie and dessert manufacturing companies purchase approximately 75 million pounds or 50 percent of the entire national frozen pack. Approximately 65 percent of these purchases are made by the eight largest buyer users.

User firms manufacturing pie filling produce essentially the same kind of product as the initial processors who produce pie filling themselves. "Pie fillers," however, pack their filling from frozen cherries purchased from freezer processors. This group of buyers purchases approximately 30 million pounds of frozen cherries which accounts for about 20 percent of the entire national frozen pack. Within this group the two



<sup>a</sup>Some of the less important channels and initial utilizations are not shown for the sake of simplicity. For example, the institutional pie filling packed by processors and the consumer size frozen cherries, each of which comprise an estimated 1-2% of the pack, are not included.

<sup>b</sup>The percentages indicated for the various types of pack are the average percentages of total tart cherry pack (raw equivalent) during 1967-1970. The pie filling percentage is an approximate estimate since recent data on pie filling is not available.

Figure 2. Major Utilization and Market Channels for Red Tart Cherries<sup>a</sup>

largest firms buy 50 percent of the frozen cherries utilized in this manner.

Local bakeries and pie manufacturers comprise another important outlet for frozen tart cherries. Each large metropolitan area will usually have one or two of these types of firms. Purchases from this group of users amount to about 15 percent of the national frozen pack.

Approximately 10 percent of the national frozen pack is sold to institutional and bakery distributor firms serving restaurants and small bakeries. Over the years the relative importance of this user group has been declining.

Another important use for frozen tart cherries is the manufacture of preserves. Although only a few firms use cherries in this fashion, as a group they use 5 percent of the national frozen pack.

#### The Pricing Mechanism for Processed Tart Cherries

The pricing mechanism for processed tart cherries can best be described as fragmented and unstable. Widely fluctuating supplies, market power imbalances (weak sellers versus large buyer users), and the disruptive influence of brokers create uncertainty in the determination of cherry prices, both at the processor and, hence, the grower level. Pricing decisions within this uncertain environment involve many risks to processors and buyer firms.



Processors who buy grower cherries for cash (most operate this way) find themselves caught in a web of uncertainty. In order for the processor to pay growers for their cherries he must accurately estimate the demand for his finished product. Considering the wide price fluctuations for processed tart cherries this is a very difficult and risky task. Estimating such things as crop size and quality can be difficult.

The actual pricing mechanism begins to function as the cherry crop reaches maturity. At that time processors scurry to obtain information necessary for determination of the demand curve for processed tart cherries. Information concerning crop estimates, carryover stocks, university publications concerning past supply and demand economic relationships, the market situation for other competing products, and other relevant factors are utilized by processors in this process. Assistance with demand estimation is also obtained by consulting brokers and users of cherries.

From the processors' demand estimate, he calculates the corresponding grower prices. In the calculation of grower prices the processor makes an allowance for the risk involved in paying cash to growers and selling his processed inventory during the year. Generally, grower prices are first announced by one or two key processors in southwestern Michigan where cherries reach maturity

at the earliest date. Deliveries then begin following a pattern from southern to northern Michigan over the next six weeks. Actual grower prices are made on the basis of grade (higher quality cherries commanding a higher price than those of poorer quality). Grading standards may vary among different processors.

The behavior of brokers, whose services many processors use, frequently confuses the process of demand discovery of processed tart cherries. The broker's interests are different from those of the processor. Brokers acting from their own self-interest are primarily concerned with handling a large volume of cherries with little concern for the price level. Because of his interest to become part of the deal, the broker experiences difficulty maintaining his impartiality. Frequently, distortion of market information occurs. The effect of this situation varies according to the nature of the supply situation.

In a large crop year the most important thing for the broker is to secure customer markets. Low prices accompanied by the large supply force the broker to seek volume sales to profit from his service. Attempting to capture a large portion of the market, the broker advertises to his customers that he has the cheapest cherries. With a number of brokers acting in a similar fashion, they tend to establish lower prices than supply and demand conditions might otherwise warrant.

The short crop year characterized by high processed cherry prices forces the broker to secure a source of the limited supply. In doing so he operates in favor of the processor exaggerating the high cherry prices at the processor level.

The total effect of the broker's behavior is to accentuate price fluctuations occurring in short and large supply situations. This pricing influence exerted by the broker is also being affected by the trend toward fewer and larger buyer user firms. Brokers can ill afford to lose many of the large buyer outlets. As a result brokers tend to align with the large buyers, catering to their needs. The net effect of this trend is for brokers to become "buyers' brokers."

The activity of brokers serves to increase the price instability for tart cherries. Although cherry user firms would benefit from broker behavior when supplies are large, the uncertainty regarding price changes within a season are generally not desirable for these firms. The reason for this is the buyer manufacturer is primarily concerned with buying competitively. If the buyer user can buy cherries as cheaply as his competition, he is less likely to be concerned with the absolute price level. Buyer users are primarily concerned with manufacturing and marketing dessert products, some of which utilize cherries. Widely fluctuating tart cherry prices are detrimental to their efforts for two reasons:

1. Development of markets is hampered because of wide fluctuation of cherry prices.<sup>1</sup> Buyer users are reluctant to develop markets for products with large price fluctuations. Results of promotional efforts are frequently destroyed by the price instability. High prices encourage consumers to shift to other competing products. The net effect of the price fluctuations is to discourage tart cherry demand expansion.

2. Instable prices also force buyer users to become very conscious of the price they pay to obtain processed tart cherries. Buyers must be certain their competitors are not purchasing cherries for less. Consequently, a significant amount of time and money is spent for tart cherry procurement. Purchasing agents must carefully strategize to obtain the lowest possible cherry price.

The severity of price fluctuations is also very detrimental to processors; for they must operate within an environment of vast uncertainty. For the processor, feast (high margins) or famine (very low margins) may only be separated by a single season. His decisions to modernize or expand his operation are often discouraged because of this tremendous pricing and profit uncertainty. Like the buyer user the processor must also devote resources to risk reducing strategies. Greater price stability would

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<sup>1</sup>"The Great Lakes Tart Cherry Industry Survey of Users and Distributors," Michigan State University Agricultural Economics Report, No. 59 (October, 1966).

release some of these resources for utilization in a more productive manner such as operational efficiency, innovation, and market development.

The buying practices of processors and the procurement methods of buyer users further complicate the pricing structure for processed tart cherries. Processors buying for cash from growers purchase a year's supply of cherries over a short period of time (the harvest season). Therefore, a processor's financial inventory commitment is very high relative to his capital resources. Bank loans to cover this large inventory investment essentially force cherry processors to sell all their product before the next crop year. The financial pressure on processors with unsold inventory at the beginning of the next season is of such magnitude that many sales are made during the year at cheaper prices than might otherwise be warranted. Such sales are often referred to by the industry as "distress sales." The large buyer users are in a position to shop around from packer to packer searching for the weakest or most nervous inventory holder. Most large buyers are financially strong and can hold out until the market price drops. In dealing with the large buyer user each processor realizes he must have a part of the buyer's business. If he fails to make a sale with a large buyer he might get stuck with unsold inventory. Consequently, the buyer can offer a relatively low price and wait until some

inventory holder weakens. This process significantly depresses the entire market for processed tart cherries.

Large buyer cherry procurement strategy also weakens the market for processed tart cherries. Large buyer users operating from a position of power, frequently approach a processor with an offer to purchase cherries at a specific price. The processor is informed by the buyer that his competitors have offered to sell at the price the buyer is quoting. Not knowing the validity of the buyer's claim, the processor must make a decision. Although the processor may doubt the buyer's claim, his past experience concerning industry price cutting and the potential loss of a large customer often forces him to accept the buyer's offer. This type of strategy serves to weaken and depress the market for processed tart cherries.

### Major Marketing Problem Areas

#### Market Imbalance

The most critical problem confronting the tart cherry industry, and processors in particular, is the market power imbalance between large buyer users and the smaller processors who sell frozen cherries. "Distress sales" and the predatory practices of large buyers in combination with the disruptive influence of brokers has created a very weak and instable pricing structure for frozen tart cherries. This unstable pricing structure

works to the disadvantage of buyers seeking competitive prices with their competing firms as well as to the disadvantage of processors selling their product within a weak and uncertain market.

### Providing Buyer Services

Evidence over the past indicates numerous small independent freezers and on-farm processor packers have not been in a position to provide the large buyer users with adequate services. Preoccupation with such activities as risk in combination with the small volume of pack handled by each individual firm has not permitted processor engagement in such important activities as customer services. As a result, industry growth and development has been retarded.

Market coordination involving the individual processors would encourage the development of such services as: (1) better quality standardization and control, (2) guaranteed large supply commitments to fulfill the needs of the large buyer users, (3) protection to user firms that their competitors cannot buy cherries at a cheaper price, and (4) such things as technical assistance to buyer users concerning utilization of the product.

Many major food companies marketing products utilized in the manufacture of other products, provide their customers with extensive technical assistance. Firms marketing bakery ingredients such as yeast, flour,

baking mixes, etc., frequently employ technical specialists to work with customers to solve product utilization problems, introduce and promote new product uses, and develop a favorable image with customers of the product. Basically the purpose of providing these services is to keep customers pleased, and by doing so, to promote and develop the market for their product. More comprehensive customer services of this nature probably could improve frozen cherry utilization and develop a better working relationship with the major buyer users.

#### Future Problems

Marketing problems confronting processed tart cherry sellers are not limited to the present market factors. The future development of on-farm processing (see Chapter IV for details) and the anticipated passage of federal legislation to strengthen grower bargaining activities could further depress the impotent marketing position of tart cherry processors.

Future growth in the on-farm processing trend would amplify processor marketing problems by further weakening the market for processed tart cherries. On-farm processors who offer only a small volume of a single commodity (frozen tart cherries) would be in a poor competitive marketing position. Large buyers would be in a favorable marketing position to force these weak sellers to sell at low prices under most conditions. The resultant



market price undercutting would tend to depress the entire market for processed tart cherries to an even greater extent than at present.

New legislation now before the United States Congress (the Sisk Bill or a modified version thereof) might also weaken the marketing position of tart cherry processors. Passage of this bill would strengthen grower collective bargaining or cooperative organizations. Through a closed union shop type of arrangement the Sisk Bill could force all growers to cooperate with a bargaining organization if a certain percentage of the growers (or growers' tonnage) vote to organize. Applied to the tart cherry industry this would mean that, if an organization such as MACMA could gain control over the necessary percentage of the growers or product (a likely situation in the tart cherry industry), all processors would be forced to deal only with member growers during bargaining negotiations. Establishment of such a powerful bargaining group would place processors in the midst of two powerful forces--a monopolistic grower organization from which they must purchase their raw product, and on the other end of the market, a few powerful buyer users. The effect of this arrangement would be to squeeze processors from both ends.

### Summary

In summary the current marketing structure for processed tart cherries pitting small independent processors against large buyer users has led to: (1) very instable cherry prices; (2) a great deal of uncertainty concerning all production phases of the tart cherry industry (growing, processing, and re-manufacturing); and (3) low returns to processors. In addition to the pricing problems, small independent processors often have not been able to provide large buyer users with adequate marketing services. This situation has created inefficient buyer procurement practices and retardation of industry growth and market development.

Unless changes are undertaken the marketing problems associated with the current marketing structure could significantly worsen. The development and growth of on-farm processing could, by further fragmenting the processing industry, substantially amplify current problems. A major portion of the thesis will be devoted to economic examination of this new structural development (on-farm processing) and exploration of market structural changes that could improve the situation for processed tart cherries.

## CHAPTER III

### THE PROCESSOR SURVEY

#### Purpose and Design

The attitudes of key industry participants such as processors are very important in any proposed market restructuring or other major industry changes. Marketing research attempting to analyze marketing problems and alternatives to improve the situation is enhanced by surveying processors' attitudes. Their attitudes are of particular importance when structural marketing changes involving collective action are analyzed because a consensus is needed to affect major changes. Development of realistic marketing alternatives requires an understanding of processor sentiment. Hence most cherry processors were surveyed.

The survey questions were designed to obtain an overall picture of the marketing situation for processors of red tart cherries. Questions were primarily designed

to examine the need for coordinated tart cherry marketing and to identify processor attitudes toward structural marketing changes. Questions contained in the survey covered three general areas. The first category of question concerned processor identification of marketing problems followed by their reactions to market consolidation programs. The second series of questions pertained to the recent decentralized marketing trend toward on-farm processing. The final series of questions concerned the environmental issues confronting processors. Although the environmental issue may appear remotely related to the central marketing theme of this research, the impact of environmental regulations threatens the operation of several established processors and might thereby influence the trend toward on-farm processing. Viewed in terms of its potential impact upon the composition of firms processing tart cherries, the environmental issue may prove to be extremely important.

#### Survey Implementation

The processor survey included responses from thirty different processors.<sup>1</sup> Most of the processors

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<sup>1</sup>For the purposes of this study all processors except national companies were categorized as independent processors. This was done because independents, on-farm processors, and independent cooperatives market frozen cherries in a similar fashion.

participating in the survey (26) were located in the state of Michigan. The other four processors surveyed were located in Door County, Wisconsin. Categorization of the surveyed processor firms is as follows:

1. Twenty-three were independent processors (21 of the independents were located in Michigan; the other 2 were from Wisconsin).
2. Three of the firms surveyed were cooperatives (2 located in Michigan and 1 in Wisconsin).
3. Four of the firms were national companies (3 from Michigan and 1 from Wisconsin).

A structured set of questions was developed (see Appendix) and interviews conducted by the author. A degree of unstructuring was utilized in the interviews to permit the processors to express their attitudes, evaluations, and reservations in detail on this complex and relatively new subject.

Question clarification was frequently necessary throughout the survey because the subject was new to a number of processors. The personal interview technique permitted the author to make the necessary clarifications with ease, thereby focusing processor responses upon the pertinent area of concern. Personal interaction with processors provided a clear and comprehensive understanding of processor attitudes and opinions. In addition

qualified responses (responses either affirmative or negative with reservations) could be recorded and, where significant, discussed in greater detail.

### Survey Results

Although the personal interview technique permitted the attainment of a more complete survey, quantifying the results statistically was difficult. The previously mentioned use of qualifying responses by processors makes statistical quantification difficult to compute and not reliable as the sole basis for analysis. Therefore to provide more meaningful results an analysis of important "qualified" responses will be presented as well as the statistical results.

#### Part I. Industry Problems and Consolidated Sales as a Marketing Alternative

All but four of the processors interviewed (87%) said that "there are problems concerning the manner in which the tart cherry industry is currently marketing processed tart cherries" (see Table 4).

When asked what some of the major problems are, a vast majority of processors faulting the present marketing structure cited "too many processed tart cherry sellers" bargaining with large concentrated remanufacturer buyers as their primary problem. The present structure places the larger remanufacturer buyers in a most favorable

TABLE 4. Survey Response Summary

| Key Questions   | Response  |
|---|---|
| 1. Are processed tart cherries currently marketed properly?   | 1. Yes (13%), no (87%)  |
| 2. Would centralized selling help?  | 2. Yes (77%), no (17%), uncertain (6%)  |
| 3. What types of pack should central sales include?   | 3. Just frozen (27%), both frozen and canned (73%)  |
| 5. What organizational structure should consolidated sales take?  | 5. Selling corporation (37%), cooperative (26%), uncertain (30%), either a selling corporation or cooperative (7%)              |
| 6. Major benefits expected from joint selling?  | 6. Reduce price undercutting, stabilize price at a "fair level," increase sales   |
| 7. What firms should be encouraged to join?   | 7. All firms (82%), just a few (18%)  |
| 8. How large must a marketing organization become before it would make improvements over the present situation? | 8. Must control at least 25% of the pack (24%), must control at least 50% of the pack (68%), must control 75% of the pack (16%) |
| 9. What percentage of the entire pack must belong to a marketing organization before you would join?            | 9. At least 25% of the pack (44%), at least 50% of the pack (50%), over 50% of the pack (16%)                                   |
| 11. What percentage of your pack would you be willing to sell through a joint sales organization?               | 11. 100% of the pack (61%), only part of the pack (17%), uncertain (22%)  |
| 12. Are enough processors interested in central selling to make such a venture feasible?                        | 12. Yes (77%), no (15%), uncertain (35%)  |

|   |  |
|---|--|
| 13. Will a consolidated sales organization be established within the near future?                   | 13. Yes (50%), no (15%), uncertain (35%)   |
| 15. What function should a coordinative marketing program pursue?                                   | 15. (1) pricing strength, (2) improve quality control, (3) reduce input procurement costs, (4) provide customer services (5) promotion |
| 16. What should be the organizational general marketing approach?                                   | 16. Providing customers with a guaranteed supply of a top quality product in addition to customer services                             |
| 18. Buyer reaction toward central sales?  | 18. Favor (34%), disfaovr (54%), uncertain (12%)   |
| 19. Will the trend toward on-farm processing increase?  | 19. Yes (70%), no (7%), uncertain (24%)  |
| 20. Does on-farm processing produce a higher quality cherry relative to traditional practices?      | 20. Yes (80%), no (10%), uncertain (10%)   |
| 21. Advantages of on-farm processing?   | 21. (1) production of a high quality product, (2) pollution control, (3) possible overhead cost advantage                              |
| 22. Disadvantages of on-farm processing?  | 22. Marketing  |
| 23. Would central selling increase the on-farm processing trend?                                    | 23. Yes (61%), no (28%), uncertain (11%)   |
| 24a. Does your firm face serious pollution problems?  | 24a. Yes (13%), no (87%)   |
| 24b. If the response to 24a was yes are corrective measures being taken?                            | 24b. Yes (100%)  |
| 25. Will the costs of meeting pollution standards force some processors out of operation?           | 25. Yes (46%), no (18%), uncertain (36%)   |
| 26. Are on-farm processing operations in a better position with respect to the environmental issue? | 26. Yes (74%), no (26%)  |

<sup>a</sup>Thirty percent of the processors responding to this question indicated they would not join regardless of size. The responses appearing in the table include only those processors willing to participate.



competitive position. According to many processors, buyers attempting to wield their market power frequently "play one processor against another" in an effort to obtain processed tart cherries at very low prices. Consequently processors argue the widespread prevalence of "price undercutting" and resultant low profit margins throughout the industry provide evidence of their competitive problem.

Weak financially backed processors, and the inability of the small independent processor to provide large buyers with the volume and quality of product they desire were other problems mentioned by a few processors. A number of processors also felt the tendency of brokers to become an arm of the large buyer ("Buyers' Broker") was an important problem. Lack of innovation and market development was also listed as a problem.

The four processors interviewed who did not believe there was anything seriously wrong with the current marketing structure tended to be of a conservative nature (opposed to any significant marketing changes) throughout the entire survey. Two of these processors were of the opinion that criticism of the present marketing structure was a slap against the American free enterprise system. Any insurmountable problems that happened to develop within the system must be endured. Centralized marketing

organizations or any other form of collective action to them represented a serious encroachment upon their individualistic ideals.

When queried "Would a form of centralized selling of processed tart cherries improve the current marketing situation?," a clear majority (77%) of the processors responded in the affirmative. Only 17 percent of the processors interviewed did not feel market consolidation would improve the current marketing situation. Six percent were uncertain.

A relatively weak bargaining position forcing frequent "price undercutting" and "low profit margins" were the arguments most often presented in support of the contention that consolidated sales could enhance the marketing position of tart cherry processors. Many of the established processors also expressed great fear of the recent trend toward on-farm processing. They contend that on-farm processors significantly contribute to the further weakening of the market for processed tart cherries by increasing the number of weak sellers. In addition some established processors indicated on-farm processors (being very small and competitively weak because of no previously established trade contacts and their single commodity sales position) might be more prone to engage in price cutting. Many processors were of the opinion that some form of market consolidation was desperately

needed to reduce the number of weak sellers and thereby strengthen the market for processed tart cherries.

Although most processors recognized the need for market consolidation, not all were interested in participating themselves. Seven processors felt that market consolidation could help to strengthen the market by reducing the number of sellers but were entirely satisfied with their own independent marketing programs. Two of the large diversified firms with their own labels expressed this opinion along with four of the smaller independents and one cooperative.

Those individuals responding negatively to the central selling concept in general were pessimistic about the success of market coordinating programs. Three processors cited past failure to effectively organize a tart cherry sales organization during the 1930's as a basis upon which to evaluate market consolidative efforts. According to their logic, centralized selling failed then and there is no reason to believe it will work now. Two other processors mentioned other marketing organizations for other products which failed and generalized from this that all market coordination programs would fail.

A significant majority (73%) of the processors interviewed supported the inclusion of all types of cherry pack into a central sales organization. Supporters of a centralized sales organization who handled both the

frozen and hot pack emphasized the need to include both types of pack in a marketing program. The minority (27%) favoring an organization selling only the frozen pack were either exclusive packers of frozen cherries or among those processors not in support of market coordination.

When asked the question, "What firms do you think would be interested in participating in a joint sales arrangement?," respondents fell into two neatly divided groups. Most individuals directly supporting (willing to participate) market consolidation were of the opinion that most independent firms would be willing to participate in a central sales organization. Seventy percent of the processors responding to this question held this opinion. Only the large national firms selling under their own labels would not be interested according to this group. Processors expressing this opinion reasoned that the same pressing problems confront all independent processors; since market consolidation provides a viable alternative to improve their marketing situation, all independent processors should be actively interested.

Processors not directly supporting (unwilling to participate) market coordination in general felt only the very small underfinanced processing firms and the on-farm processors would be interested in joining a consolidated sales organization. A minority of processors representing

30 percent of those interviewed responded in this fashion. They argue the most enthusiastic supporters would be the on-farm processors who they claim are "struggling for markets."

Both groups were of the opinion that by far the most ardent support for collective marketing would come from on-farm processors. Working from the assumption that on-farm processors are often underfinanced and lack marketing experience, knowledge, and contacts, most processors felt on-farm processors would zealously support market coordination.

When confronted with the question, "What structural form should a centralized sales organization take?," many processors were very uncertain. Many stated that they had not thought much about organizational structure. Most responses to this question were ellusive and vague.

Although no consensus regarding a specific structural change was evident, the most popular organizational structure was the selling corporation which mustered support from 37 percent of those responding. The next most popular organizational form with support from 26 percent of the respondents was that of a selling cooperative with processor participation in the development and operation of the organization. Seven percent of the respondents indicated they were indifferent to either a cooperative or corporative structure. A number of processors (30%)

said they were uncertain about what organizational form a central sales organization should take.

It is significant to note that although the cooperative structure received support from 26 percent of the processors, a few expressed open hostility to this organizational alternative. In response to this question some processors also expressed their opinions concerning sales arrangements. While some of the processors felt the only fair way to collectively market the cherries committed to a consolidated sales organization would be through a single pooling arrangement for each of the various grades of cherries, a few processors vented strong opposition to this type of selling arrangement. Opponents of pooling expressed a preference for sales to be made on an individual basis for each firm's cherries; many arguing their product was of higher quality than that of their competitors and they should be compensated accordingly (with higher prices or faster inventory turnover). Critics of pooling also were of the opinion that a pooling system tends to reduce the incentive to produce cherries of a very high quality.

The universal response from those processors supporting market consolidation either directly (willing to participate) or indirectly (those supporting the organization's development but unwilling to participate themselves) was that consolidated sales could significantly

reduce the widespread price undercutting characteristic of the current marketing structure. Most processors felt centralized selling could help them obtain what they describe as a "fair price" for their product. In general individuals supporting market coordination also expressed the opinion that greater financial strength through collective action could be utilized to increase sales volume. Resource concentration, they argue, would also permit the development of effective promotional programs not economically feasible by independent firms. A few processors indicated market coordination could also benefit processors by reducing input procurement costs.

Individuals not favoring market coordination vented a pessimistic attitude about the benefits achievable through market consolidation. They were of the opinion that such an organization would not have much influence on either prices or sales volume. According to these processors, returns from market consolidation would be insufficient to justify the organization's operation. Again some individuals pointed to past cooperative failures as supporting evidence.

Most processors participating in the survey (82% of the processors responding to this question) thought that all interested processors should be encouraged to participate in a market consolidation organization. A few processors (18% of those responding to the

question) fearing legal complications favored organization of only a few processors.

When asked, "What volume of the cherry pack must a central selling organization control in order to make an improvement over the present situation?," most processors (68%) felt control over 50 percent of the pack would permit significant improvement over the present situation. A few (16%) indicated significant improvements could not be achieved unless at least 75 percent of the pack was controlled by the organization. Some processors (24%) were of the opinion that some improvements were obtainable if as little as 25 percent of the total cherry market was organized. Sixteen percent of those interviewed said they did not know what volume would be necessary to improve the current situation.

Processors when confronted with the question, "How large must the organization become before you would be willing to participate?," voiced a disparity of opinions. A few of the processors interviewed (30%) indicated they were not interested in participating regardless of the size of the organization. Nearly one-half of the firms responding in this manner were national companies who rely heavily upon sales under their own brands. Another 10 percent indicated they were not sure at the time of the interview how large the organization should become before they would participate. The remaining 60 percent



indicated that they would join if various specified (by the respondent) organizational sizes were achieved.

Of those processors who specified a necessary organizational size before they would participate, half (50%) required organizational control over at least 50 percent of the total frozen pack, 44 percent said they would join early (requiring control over only 25% of the total pack), 6 percent required control over at least 75 percent of the total frozen cherry pack before they would consider participating.

In general processors encountered great difficulty responding to the above question. Lack of knowledge concerning consolidated marketing effectiveness associated with various organization sizes and the specific organizational form and method of operation all contributed to the uncertainty of many responses.

All firms producing both the frozen and hot pack interested in participating in a centralized selling program expressed willingness to sell both types of pack through the organization. Most multiproduct fruit processors, also expressed desire to expand consolidated sales into other products. To these individuals the establishment of a successful tart cherry marketing organization could serve as a foundation upon which to construct a multiproduct fruit marketing program.

The avid enthusiasm generally exhibited by the advocates of consolidated sales waned somewhat when processors were asked what percentage of their pack they would be willing to commit to a central sales organization. Frequently responses were given with reservation. Most (61%) of the processors interested in participating in consolidated sales expressed desire (often with reservations or qualifications) to commit all of their pack to the organization. A small minority (17%) indicated they only wanted to initially commit some of their pack. The remaining 22 percent were uncertain at the time of the survey what portion of their packs they would be willing to commit to a marketing organization.

Most processors emphasized the importance of establishing a strong marketing organization, particularly those expressing a desire to commit their entire pack to the organization. Desire, however, is not always synonymous with action. For example, one processor said, "It would be difficult to commit all of my product to a central selling organization because some of my product goes to a special market." Another processor hesitant to make a total pack commitment stated that "Each processor has his own good customers with whom he would not want to part." Some processors expressed desire to sell all of their cherry pack through consolidated sales "if conditions are right." Following is a list of the most frequently mentioned

reservations concerning processor commitment of their total cherry pack:

1. Processors fear total commitment would cause them to lose their "market contacts."
2. Processors fear brokers handling the other products of multiproduct producers would become angry from the loss of cherry sales, and thus penalize participating firms by reducing sales of their other products.
3. Benefits would accrue to non-participants as well as those supporting the organization (the "free rider problem").
4. Some processors are reluctant to part with their "good customers."
5. It was apparent that lurking in the back of all of their minds was the ever present uncertainty concerning the effectiveness of a consolidated marketing venture.

Most processors believe there is presently enough interest in central sales to make such a venture feasible. Of those processors interviewed 69 percent said interest was definitely sufficient while another 8 percent felt there was a good possibility. A few processors (representing 15 percent of the survey sample) were of the opinion interest was at present insufficient to justify

establishment of a marketing organization. Eight percent of the respondents were uncertain.

While 69 percent of the processors responding were convinced interest in central selling was sufficient to support a successful organization, only 50 percent thought the emergence of a consolidated sales organization would be forthcoming in the near future. Another 19 percent thought an organization could possibly develop. A few processors (15%) felt an organization would definitely not be established in the near future. The remaining processors representing 16 percent of the total refused to speculate.

Many with reservations concerning the development of a central selling organization for processed tart cherries felt organizing the highly independent processors could present an insurmountable obstacle. In addition some processors questioned the legality of a collective processor sales organization. A previously abortive organizational attempt to centralize tart cherry sales in the Traverse City area during the 1930's also served to create a reluctant attitude among a few processors.

Although most processors did not know who should organize a central sales agency, most felt the initial steps should be taken by the processors themselves. Most processors felt they should participate in the development and operation of a marketing organization.

Nearly all processors directly supporting consolidated sales advocated an organization actively pursuing quality control improvement and promotion in addition to the obvious market power function. In addition many processors supported (1) research and development programs, (2) joint buying to reduce procurement costs for tins and sugar, and (3) efforts to provide cherry customers and users with more complete customer services.

In developing a marketing philosophy for a consolidated marketing organization many processors chose to emphasize stronger, dependable pricing and providing useful services through coordinated marketing. Guaranteeing large volumes of top quality product accompanied by expanded customer services are items which many processors feel buyers are looking for. This type of marketing approach represents a desire on behalf of processors to create a favorable image with buyer users.

Most central sales advocates among processors stressed the imperative need for a strong marketing organization. Most processors (86%) felt that once a processor committed his cherries to the sales agency he thereby should forfeit all marketing control over the product. Most processors felt that any other situation would be detrimental to the success of the organization. A successful marketing effort they contend can only be achieved with a strong organization. If processors are

permitted to make sales not sanctioned by the marketing organization, efforts to strengthen the market will be destined to fail.

Processor anticipation of buyer reaction to market consolidation was widely varied. Although many (54%) were convinced buyers would disfavor centralized sales, the degree of estimated buyer resistance was disputed. Some processors felt buyers would adamantly oppose market consolidation, while others anticipated only moderate buyer disapproval. A few processors (19%) thought initial buyer reaction to central selling would initially be adverse but become favorable in the future. Fifteen percent of the respondents were of the opinion that buyers in general would favor central selling. Twelve percent of the processors indicated they could not anticipate buyer reaction toward a centralized sales organization of cherry processors.

Rising processed cherry prices stemming from the inability of large buyers to play one processor against another was the reason most processors felt buyers would oppose centralization of processed tart cherry selling. In spite of anticipated buyer opposition, most processors did not feel this would be a threat to the organization. According to processors, buyers will be forced to seek their services regardless of their sentiment.

Respondents indicating initial adverse buyer reaction to central selling would be followed by favorable

acceptance generally felt that the merits of market coordination would eventually convince buyers to support the organization. Buyers, they argue, would discover the marketing services and dependable prices would outweigh the anticipated price increases. Processors indicating buyers would initially favor market consolidation felt buyer users would immediately foresee the advantages of a market coordination organization and thus support its inception.

## Part II. The On-Farm Processing Trend

A substantial majority of processors (70%) anticipate the recent trend toward on-farm processing will increase in the near future. Only 7 percent of the processors responding to the question thought no further increase of on-farm processing was forthcoming. The remaining 24 percent were not willing to speculate.

The potential to produce a higher quality product than traditional processors (primarily through better coordination with mechanical harvesting) and possible overhead cost advantages underlie the convictions of many processors who believe the trend toward on-farm processing will increase in the immediate future. Trends toward larger farm size and the advantages of vertical integration in farming were also cited as arguments supporting the expected increase of on-farm processing. Some

processors indicated on-farm processing would increase because it guaranteed growers an outlet for their cherries. In addition a few processors felt the pollution crisis threatening to close some traditional processing facilities might further encourage the growth of on-farm processing.

Interestingly two of the established processors, while believing on-farm processing will increase in the immediate future, were of the opinion in the long run there would be no increase. According to them on-farm processing was a "fad" developing primarily as a result of misinformation concerning profit margins accruing to tart cherry processors. Soon, they contend, the facts will be discovered and growth will abruptly halt.

When asked, "Does on-farm processing produce a higher quality product than the traditional method," 50 percent responded yes. Another 30 percent also responded in the affirmative but qualified their statement by stating on-farm processing could improve quality if the operation is properly run. Only 10 percent did not think on-farm processing produced a higher quality product. Ten percent of the surveyed processors were unaware of any quality differential.

Most processors felt on-farm processors were potentially able to produce a higher quality product than traditional processors because of their ability to better



coordinate cherry harvesting and processing. Processing mechanically harvested cherries, they pointed out, requires careful timing from the tree to the can. This timing is more easily accomplished through on-farm processing than more centralized operations involving many small grower suppliers. In addition on-farm processing involves less handling and transporting of cherries which helps improve quality.

Concerning the quality of pack produced by on-farm processors, many processors expressly noted the importance of the individual operating the processing facilities. According to them superior quality can only be achieved through a technically disciplined, quality conscious operator.

Processors felt the greatest disadvantage associated with on-farm processing involves marketing of the semifinished (frozen) product. A high percentage (71%) of the processors interviewed expressed this opinion. In general processors feel the on-farm processors' lack of marketing experience and buyer contacts coupled with their extremely weak competitive position (versus established and more diversified processors) are responsible for their marketing difficulty. The small grower processor handling only one type of product (frozen cherries) has little market power. Consequently he tends to depress the market price by undercutting the market price

established by the stronger more diversified firms. A few established processors representing approximately 11 percent of those surveyed, feel on-farm processors confront a strong overhead cost disadvantage. The high fixed investment in facilities utilized for only a short period of time was cited as the major cost disadvantage. Because of the limited useage, on-farm processing firms would not have the opportunity to spread overhead cost among several products. Other possible disadvantages mentioned in the survey were grower lack of technical processing knowledge and the inability of small operations to provide sufficient product volume and customer service.

Many processors (61%) held the opinion that establishment of a consolidated sales organization would likely increase the trend toward on-farm processing. A few processors (28%) did not think a consolidated marketing organization would influence the trend toward on-farm processing. Eleven percent expressed no opinion on this matter.

Processors who did not believe the on-farm processing trend would be affected by central sales generally felt other factors such as farm size and financial status of potential processing firms comprised the central determinants. They did not believe centralized sales would appreciably influence the decision.

### Part III. Environmental Quality Problems

Environmental quality has become an important issue among tart cherry processors. Waste water disposal by firms located on or near waterfront property has become a critical issue particularly in the past few years. As a result of recent anti-pollution regulations, firms located near water are frequently confronted with three alternatives: (1) connect to the city sewer system, (2) relocate their plant away from the waterfront and install a spray irrigation system, or (3) discontinue operation. Low returns from processing tart cherries combined with the large financial commitments associated with adopting either of the first two alternatives has led many industry leaders to speculate that a few firms will discontinue processing cherries. The structural importance of such a situation, particularly its impact upon the on-farm processing trend is of great importance. Lost production capacity could significantly stimulate the growth of on-farm processing.

Most processors (87%) at the time of the interview stated they were not plagued with significant pollution problems connected with waste water disposal for their plants. Many indicated they had made extensive environmental quality adjustments prior to the survey.

Four of the processors interviewed representing 13 percent of the total responding to this particular

question indicated they were confronted with serious waste water disposal problems. Two of these processors said corrective measures were currently underway. The other two firms with serious problems stated that they were forced to close their present operations. However, both indicated that they planned to relocate their operations.

While none of the processors interviewed indicated mounting pollution problems would force their own firm to discontinue processing tart cherries, a number of them (46%) thought the high costs necessary to meet environmental quality standards would definitely force some of the struggling firms out of business. Another 18 percent felt that meeting anti-pollution standards could possibly force some firms to discontinue processing. Eighteen percent disagreed with their competitors and said that pollution problems would not force anyone out of business. The rest of the processors surveyed (18%) indicated they did not know what effects the environmental issue would have upon their competitors.

A large majority of processors interviewed (74%) were of the opinion that on-farm processing units were in a better position relative to that of traditional processing firms to meet environmental quality problems. Rural location and the small volume of product handled were cited as the primary advantages held by on-farm processors. Many expressed the opinion that other more pressing environmental problems divert attention away

from these small isolated producers. According to these individuals people are not very concerned about the small isolated on-farm processors. Many processors also felt the advantages associated with pollution control may increase the number of on-farm processing units.

A few processors (26%) were of the opinion on-farm processing possessed no environmental quality advantages over the traditional processing method. These processors argue it is only a matter of time before pollution problems catch up with the on-farm processor. According to them, on-farm processors are simply "further down on the list of priorities."

#### Survey Summary

The survey results indicate widespread processor recognition of serious problems resulting from the current marketing structure for processed tart cherries. Most processors (primarily freezers) feel the severe imbalance of marketing power between the small independent cherry processors and the large buyer users constitute the heart of their marketing problem. According to processors, large buyers frequently, "play one processor against another" forcing firms to engage in unhealthy price undercutting, a practice serving to unnecessarily depress processed tart cherry prices and hence profits.

The recent decentralization movement within the tart cherry industry (on-farm processing) further fragments

the marketing structure for processed tart cherries. The addition of several new, weak competitive sellers significantly enhances the marketing position of large buyers. Many fear the on-farm processing movement has just begun.

Most processors believe a consolidated marketing organization could significantly improve their relative marketing position. It is felt market consolidation could provide countervailing market power between tart cherry buyer users and processor sellers. Cherry processors believe the development of a strong marketing organization would discourage unhealthy price undercutting thereby enabling them to obtain a "fair price" for their product.

In addition to the problems created by the unfavorable marketing position between tart cherry processors and buyers, a number of processors feel the present marketing structure is outmoded for other reasons. They contend small independent processors can not provide customers with the necessary product volume, quality, and other customer services. Market consolidation could provide these services more adequately. Furthermore, a consolidating marketing organization, they argue, could also obtain the funds necessary to pursue research and development and extensive product promotion, activities many processors consider important to a modern progressive industry.

Although serious marketing problems confronting individual processors could be alleviated through market consolidation, because of the independent nature of many individuals engaged in tart cherry processing obtaining sufficient processor commitment to a particular program may be difficult. Processor interviews brought out opposition to certain organizational structures and practices which would have to be overcome to get them to join. For example, some processors indicate that pooling was the only fair way to market the product while others felt their product was of a relatively higher quality and thus adamantly opposed pooling arrangements. Some processors, although interested in a consolidated marketing program, expressed reluctance to make a firm commitment to the organization. Typical responses from these individuals were "I would be willing to participate if the organization looked sound" or "We would be reluctant to commit all of our product to a central sales organization."

The survey results suggest that development of a consolidated marketing organization for tart cherry processors would be a difficult task. Although the problems seem very real and most processors are interested in centralized selling, effective organization of these extremely independent individuals will involve much hard

work. The ability to encourage individual processors to compromise and cooperate may indeed become the decisive factor leading to the development of consolidated sales for processed tart cherries. Following are a few suggestions which, based upon the survey results, would appear to enhance the widespread acceptance by processors of a consolidated sales organization:

1. The organization should contain substantial processor participation in both development and especially in operation.
2. All processors should be encouraged to participate in the organization. A comprehensive organizational plan should be developed encouraging widespread industry participation. Many processors fear the "free rider" problem would destroy an organization unless widespread participation was obtained.
3. The marketing plan should be legally sound. Many processors would refuse to participate in an organization without clear indications of its legality. Processors will have to be convinced that a prospective organization is reasonably safe from legal conflict.
4. Adequate financing will need to be arranged.



5. A detailed plan should be carefully developed and presented to all prospective members. It should include the goals and objectives of the organization along with a detailed description of the organization's operation. Financial arrangements should also be explained in the program plan. A good detailed plan presented to prospective members will be crucial to the development of the organization. The plan may be effective to persuade doubtful processors into membership.
6. A consolidated marketing organization which continues the independent identity of the participating firms while still accomplishing the coordinating objectives will likely enhance processor acceptance.
7. If a product pooling arrangement is adopted several pools should be established according to product quality. Incentive must be present to encourage quality production.
8. A marketing organization should have future plans to expand into other markets such as apples, blueberries, strawberries, plums, etc.

## CHAPTER IV

### ON-FARM PROCESSING

#### Introduction

Grower processing of tart cherries (on-farm processing) over the past few years has become an increasingly popular processing method. Although only a small percentage of the cherries are now processed with this type of operation, it may become much more important in the future. On-farm processors are large cherry growers who own and operate small processing plants on or near their cherry orchards. Thus, on-farm processing serves to vertically integrate the growing and processing activities of tart cherry production. Although on-farm processing vertically integrates production and processing, the net impact of the new processing operations has been to fragmentize or decentralize the market structure for sellers of frozen tart cherries. The greater fragmentation of tart cherry sales created by the entry of these small on-farm processors is causing great concern within the industry. In this chapter the economics of on-farm processing will be examined in detail.

Characteristics of the On-Farm  
Processing Operation

On-farm processing firms are grower-owned operations packing frozen tart cherries with processing facilities located at the grower's orchards. These on-farm processors, pack as few as 900,000 pounds of cherries to as many as 3 million pounds per year. The smaller on-farm processing operations usually pack only the grower-owner's cherries, but occasionally pack a few cherries from nearby orchards. Larger on-farm processors (processors packing over 2 million pounds) frequently pack cherries for others in addition to those that they grow. These large on-farm operators buy cherries from growers for cash like traditional processors or pack for growers on a custom basis.<sup>1</sup>

The on-farm processing operation is basically a fairly simple processing technique. Because of its technical simplicity and integration with growing, on-farm processors are able to keep many of their overhead costs at a low level compared to traditional processors. For example much of the plant organization, minor repair and maintenance, input procurement, labor recruitment and supervision are frequently handled by the grower-processor himself. Overhead cost advantages are also achieved

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<sup>1</sup>Custom packing of tart cherries involves providing processing services on a cost or margin basis. Under this type of contractual arrangement the processor does not take title to the grower's cherries.

through the interchangeability of farm labor, machinery, and tools. Some traditional processors, as indicated by the survey (Chapter III), contend these overhead costs advantages enable on-farm processors to produce cherries cheaper than traditional processors. Most on-farm processors agree with that. An analysis of overhead and other costs of on-farm processing were made as a part of this study (and reported later in this chapter).

The marketing position of on-farm processors must be characterized as extremely weak. The on-farm processors possess very little market power when selling the semi-finished product (frozen cherries). Their small independent operations are certainly no match (with respect to bargaining) for the large corporations with which they must deal.

The on-farm processor exclusively handling frozen tart cherries has relatively little bargaining influence with the large diversified buyer users. Since the grower-processor has huge financial resources committed to the frozen product (raw product and processing cost) and can only offer buyers a single commodity with few services, he is frequently at the mercy of the buyer. Frequently he is forced into selling his product at prices lower than those that would be established by the stronger, more diversified processors. Thus on-farm processing tends to depress the market for processed tart cherries.

Aside from the competitive mismatch, on-farm processors' marketing activities are further impeded by the limited time available to the grower operator during the critical season. According to on-farm processors the growing and processing of tart cherries are both time-consuming activities particularly during a short harvest time of two to three weeks. They feel they do not have the time nor product volume to develop marketing programs and extensive sales contacts. And since they are new to the processing industry, they have established few market contacts. Consequently most on-farm processor sales are made through brokers, an arrangement most processors feel works to the advantage of the powerful buyers. Processors in general feel the concentration of buyer user firms has encouraged brokers to in effect align their activities closely with buyers (as explained more fully in Chapter II).

#### The Development of On-Farm Processing

Today's affluent and sophisticated consumer demands a very high quality product. Many people argue the recent on-farm processing trend has in part been developed as a result of mechanical harvesting and to fulfill the need for production of a high quality cherry product.

Traditional cherry processing methods now often encounter difficulty producing the quality of cherry required by remanufacturer buyers and by today's affluent

and sophisticated consumers. Traditional processing procedures often involve practices detrimental to the production of a high quality cherry especially since the change-over to mechanical harvesting. Production of high quality cherries requires careful coordination of the cherries from the orchard harvesting equipment through the entire processing activity. Due to their highly perishable nature, the ripe cherries must be quickly cooled and transported from the orchard to the plant. The cherries are then processed after they have soaked in water a sufficient amount of time.<sup>1</sup> Cherries soaking too long or not long enough will be of inferior quality. Frequently traditional processors are not able to coordinate the processing of tart cherries received from large numbers of geographically scattered growers in a manner conducive to the production of a high quality finished product. When cherries in a geographical area served by a processor ripen at approximately the same time, it is difficult if not impossible to process all of the cherries at precisely the proper time to maximize quality. Frequently cherries must soak a period of time beyond that which is desired to maintain a high quality. Tart cherry quality problems are by no means new. They have plagued

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<sup>1</sup>Mechanically harvested cherries should be permitted on the average to soak between six and eight hours. Mechanically harvested cherries soaking more than twelve hours tend to show extensive scald and color loss after being processed.

the industry throughout its history. However, mechanical harvesting has emphasized the quality problems and increased the importance of coordination between the farm and processing plant.

Many processors (80%) believe the on-farm processing system possesses quality advantages over traditional methods. They recognize on-farm processors have greater control over the entire processing operation. On-farm processors can better coordinate both the growing and processing activities. The small volume of product handled by the on-farm operator permits better production timing and gives the manager greater control over the entire process. In addition to coordination advantages, on-farm processing also can produce higher quality by reducing handling and transportation of the cherries. Many on-farm processors feel that they obtain a higher quality product and because of this markets for their finished product are reasonably secure. They also feel the quality and other advantages associated with on-farm processing will encourage its future growth.

One important factor contributing to the development of on-farm processing is its profit potential. Processing of cherries represents a business investment. Like any other business venture, grower-processors are in quest of profit. Coordination of the growing and processing of tart cherries represents a logical business

venture expected to increase net returns to the total operation. Interviews with on-farm processors clearly brought out the fact that profit potential is indeed the prime motivation encouraging growers to integrate into on-farm processing.

Growers not only engage in processing for the derivation of profits from that operation, but often consider on-farm processing as protection for their large orchard investments. On-farm processing provides growers with a guaranteed initial outlet for their raw product. Processors interviewed in the survey (particularly on-farm processors) indicated security was an important factor contributing to the development of on-farm processing. On-farm processing gives greater assurance to the grower that in large crop years all of his cherries will be processed. In addition, growers with their own processing facilities have less worry about established processor plant shutdown during the critically short harvest period. Considering the threat to the survival of processing firms wielded by the recent environmental movement, market security for raw cherries is indeed an important element encouraging on-farm processing growth.

The changing structure of the agricultural sector of the United States economy has also played a significant role contributing to the development of on-farm processing. The growth in farm size and the increasing advantages of



vertical integration are important influential factors encouraging the recent structural change in the tart cherry processing industry.

The continuing trend toward fewer and larger farms will encourage the development of on-farm processing. Only large financially healthy growers can economically afford to undertake the processing venture. As the trend toward fewer and larger farms continues, more growers will be in a position to consider on-farm processing.

#### Costs of On-Farm Processing

An effort was made to project the growth, impact, and implications of on-farm processing upon the tart cherry industry particularly emphasizing its effect upon the marketing structure for frozen cherries. Accomplishment of these objectives requires an analysis of the economics of on-farm processing including specific information on plant and machinery investment costs and the costs of plant operation. This section is devoted to explicit examination of the economics of on-farm processing.

#### Synthesized Plant Model

Figure 3 represents a synthetic plant model of a typical on-farm processing operation. Shown in the diagram is the essential processing equipment common to all processors.<sup>1</sup> The machinery and equipment is arranged in

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<sup>1</sup>One existing on-farm processor does not have electronic sorters. In his operation all poor quality cherries are sorted out manually.

# ON-FARM PROCESSING PLANT LAYOUT

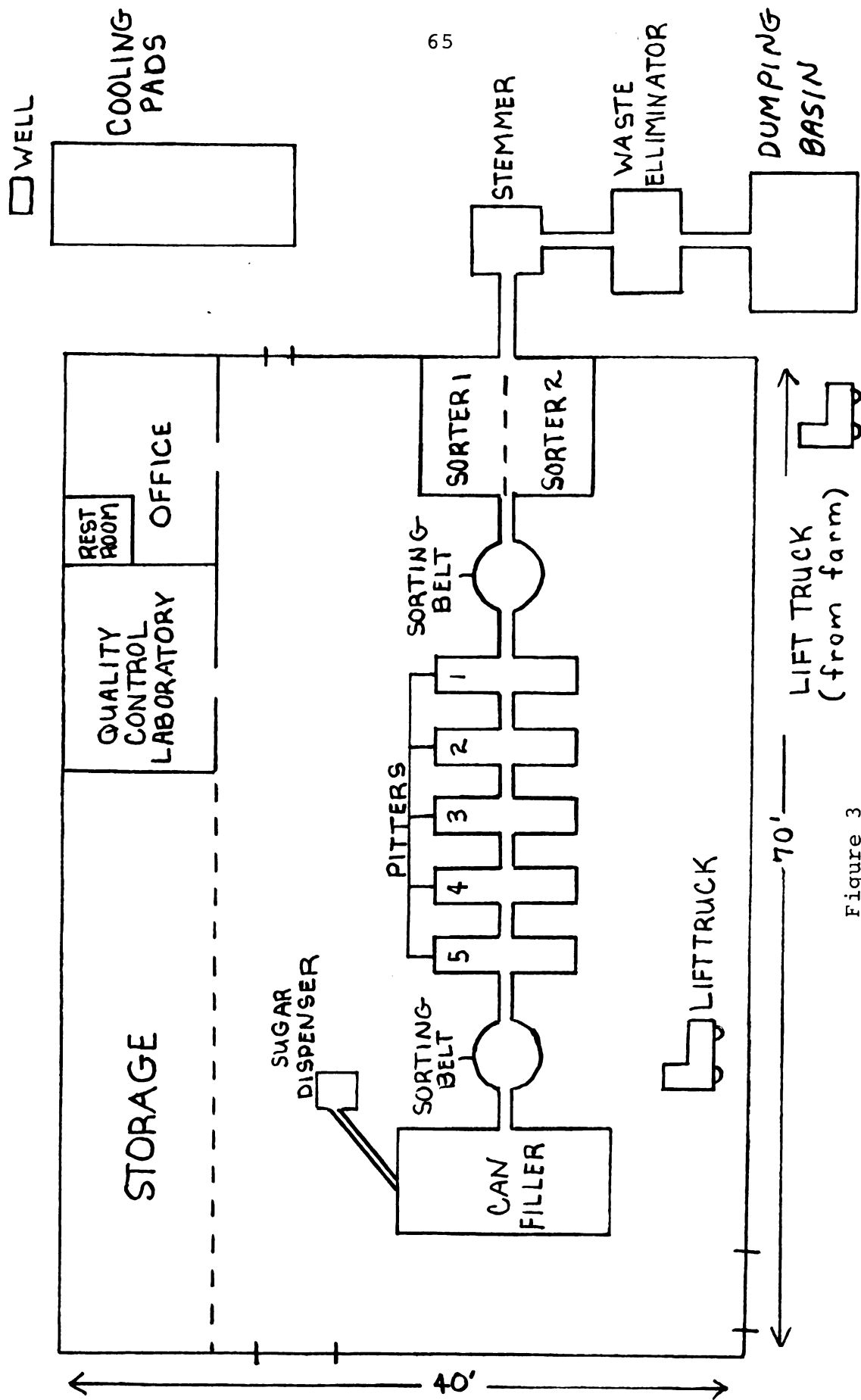


Figure 3

a fashion similar to that found in the typical on-farm processing plants.

Figure 4 illustrates the labor requirements of a typical on-farm processing operation. Workers appearing in the diagram are positioned in their respective places throughout the plant. Labor typically consists of both men and women.

Following the flow of cherries through diagram 4 provides a good understanding of the typical on-farm processing operation. Product movement will be accompanied by a brief description of labor duties as the product moves through the various processing stages.

Immediately after harvesting, the cherries are brought from the orchard by tractor fork lift to the cooling pad. At the cooling pad cold water is circulated through the cherries. Here they are allowed to soak in the cold water until they become firm.

After soaking the proper length of time the cherries are moved by lift truck from the cooling pad to the dumping basin located outside the building. The dumping basin feeds a smooth flow of cherries into the processing line.

Movement of cherries along the entire processing line is accomplished with an elevator and conveyor system.

The first stop after leaving the dumping basin is the eliminator, also located outside the building. The

# ON-FARM PROCESSING LABOR REQUIREMENTS

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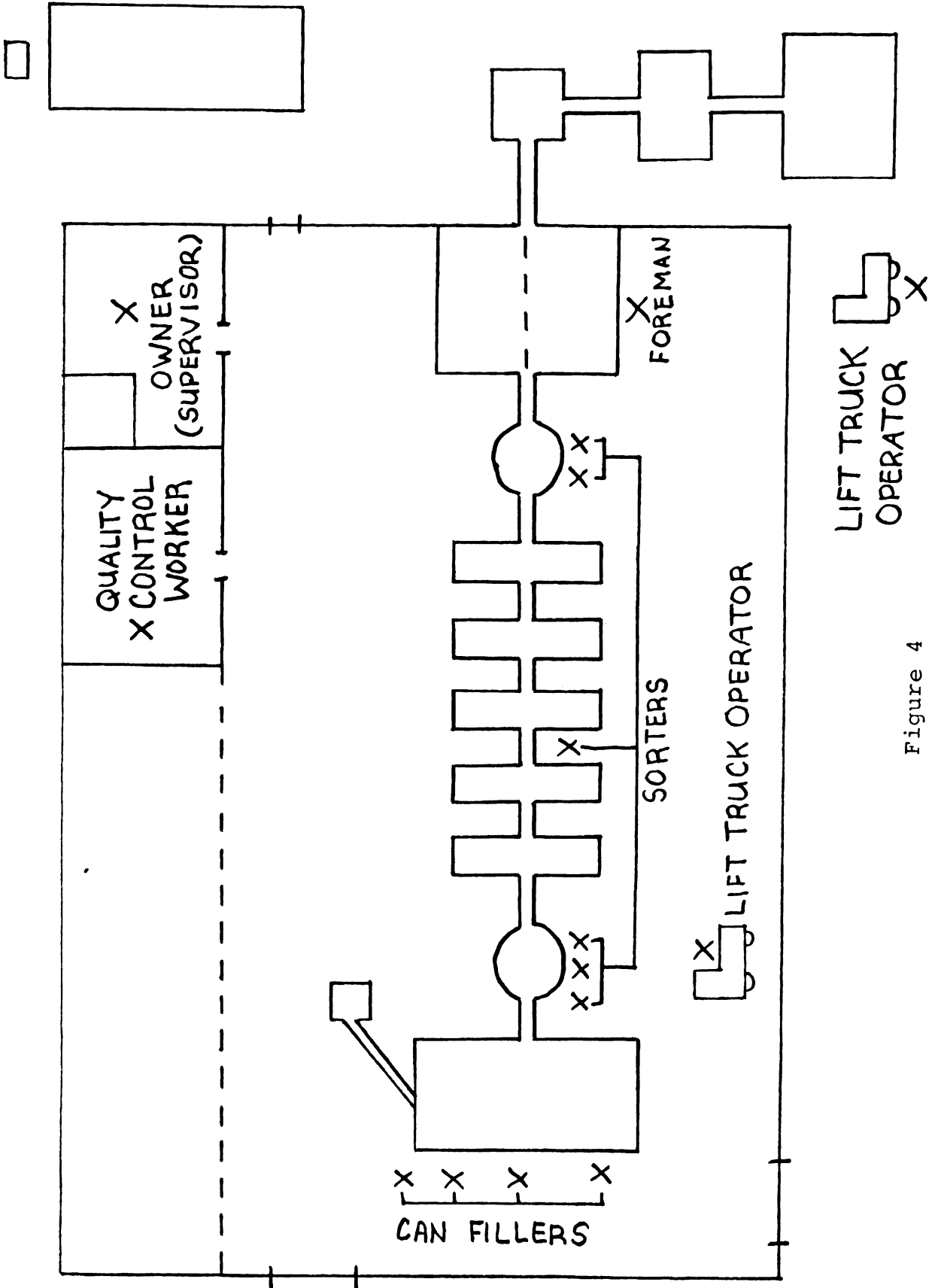


Figure 4

eliminator removes small, mashed cherries and other waste materials such as leaves, lose pits, etc.

Cherries passing through the eliminator next pass over the stemmer. The stemmer, as its name indicates, removes any attached stems from the cherries.

After the stemming operation, the cherries are moved by conveyor into the building where they first go through the electronic sorters. Electronic sorters discard the scarred or blemished cherries. The delicate nature of the electronic sorter requires close supervision of its operation by a trained operator. A firm of this size would typically assign this duty to the foreman. The foreman watches the sorters from a platform between them which is located high above the floor. Thus he is perched in a position enabling him to effectively supervise the entire operation within the building as well as to check on the electronic sorters.

The sorting of poor quality cherries is not accomplished entirely by the electronic sorter. In addition to the electronic sorters the typical or model plant (see Figure 4) has six workers sorting out the low quality cherries that the electronic sorters miss. On-farm processors are convinced the most efficient method of producing high quality cherries is to utilize the electronic sorter to discard the bulk of the poor quality cherries and employ workers to eliminate the rest. Electronic

sorters have not yet proven effective in sorting out all poor quality cherries. Adjusting the sorter to obtain a very high quality pack frequently involves loss of many good quality cherries. On-farm processors feel that by adjusting the sorters to eliminate most of the poorer quality cherries the remaining inferior ones can be discarded manually.

Cherries which meet the standards of the electronic sorters pass over a sorting belt positioned immediately before the pitters. Here two workers (usually women) sort out blemished cherries which have been misseed by the machine. The "sort out" cherries are conveyed out of the plant where they are collected to be sold as juice cherries.

After passing the pre-pitter sorting belt or table, the cherries move on to the pitters where the pits are removed. As the second diagram (Figure 4) illustrates, another worker is typically located between the third and fourth pitter to sort cherries as they pass by on the belt. In addition to sorting, this worker also watches the pitters to make sure they are operating properly.

After the pits have been removed, the cherries pass on to the final inspection station, a sorting belt situated between the pitters and the can filler. Typically three workers are stationed here.

When the final sorting has been completed, a quality control inspector employed by the operator collects

samples of the finished product. The cherry samples are taken to the plant's quality control lab where the worker examines them to determine if they meet the processor's or USDA's quality specifications. Such physical characteristics as size, color, texture, and overall appearance are examined. If the quality is below the desired standard, operational adjustments can be implemented before a large amount of cherries are packed.

Cherries passing final inspection are then put into thirty pound tins for freezing. This operation involves four workers. One of the workers feeds the cans into the machine and loads the sugar filler with sugar. Another worker is needed at this station to fill the cans with cherries and sugar. A third man is required to place the tops on the cans. A fourth man stacks the cans so the fork lift operator situated inside the building can move the cans to storage or a refrigerated truck.

The refrigerated truck transports the cherries to cold storage facilities where the cherries are frozen and stored. Most processors have all their USDA grading and inspection done at the cold storage facility. Most on-farm processors illustrated by the model plant do not own their own storage facilities, choosing to rent these facilities instead.

### Plant Capacity

Average hourly plant capacity for a five pitter operation similar to the model plant can vary by as much as 1,000 pounds of processed cherries per hour. Variance occurs primarily as a result of the quality of cherries coming to the plant from the orchard and the technical competence and experience of the plant operator. High quality cherries will run through a plant faster than those of poorer quality, because the line can be adjusted to move faster if less time is required for sorting. Technically competent and experienced management can also be expected to improve the amount processed per hour through efficient plant operation. In addition processors desirous of producing an especially high quality pack may influence operational speed by producing at a slower rate. Producers of a very high quality product feel they are able to improve their marketing position this way. Higher quality is a service many buyers seek. Based upon study of the current on-farm processing operations, a representative average hourly capacity for a five pitter operation similar to the synthesized model would be around 8,000 pounds per hour. This average production figure takes into account the numerous factors affecting output and the considerable variability of hourly production.

Based upon this hourly capacity rate of 8,000 pounds per hour, the model plant could be expected to



adequately handle up to one and three-quarter million pounds of high-quality cherries per year. Processing more than this with a five pitter operation could likely lead to quality problems. Although the operation appearing in the model could only adequately handle one and three-quarter million pounds, plant adjustments could be easily implemented to increase the hourly capacity and thereby permit production of a larger volume without sacrificing quality. Adding an additional electronic sorter along with one or two more pitters and the necessary additional workers would permit production of a larger volume. Making these adjustments could increase hourly capacity by over 1,000 pounds per hour.

A typical on-farm processing plant normally operates seven days a week until all the grower's cherries are processed. The work schedule is normally divided into two, eight-hour shifts. Thus, an uninterrupted processing season for a five pitter on-farm processing plant similar to the model packing between one and one and three-quarter million pounds of finished product would last eight to fourteen days. Greater production could be achieved by operating with two ten-hour shifts. With this work schedule, production could be accomplished in six and a half days for one million pounds and about eleven days for production of one and three-quarter million pounds of cherries.

### Investment Costs

The total investment cost of the synthesized plant would amount to approximately \$75,000. This \$75,000 figure is based upon on-farm processor estimates of the investment costs for various component parts in the operation. Most of these processor cost estimates for similar pieces of equipment were very similar, suggesting that they should be quite reliable. Table 5 summarizes the component investment costs for a typical on-farm processing operation.

TABLE 5. On-Farm Processing Investment Costs

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|   |              |
|---|--------------|
| 1. Building costs including cooling pads (building dimensions: 70' x 40' x 18') | \$15,000     |
| 2. Well System (8")   | 6,000        |
| 3. Machinery  |              |
| 2 electronic sorters (\$12,500 ea.)   | 25,000       |
| dumping basin   | 2,100        |
| waste eliminator  | 900          |
| stemmer   | 4,000        |
| can filler  | 5,000        |
| 1 fork lift truck   | 6,000        |
| pitter stands   | 4,000        |
| elevator and conveyor system  | <u>4,000</u> |
| 4. Total investment cost <sup>a</sup>   | \$75,000     |

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<sup>a</sup>Larger on-farm operators may be forced to install a spray irrigation system to meet pollution standards. The cost of a spray irrigation system would be about \$6,000.

### Manpower Requirements

Operation of the synthesized model plant requires the labor of about fourteen workers in addition to the grower owner who typically acts as the plant supervisor. Many tasks within the plant can be handled by either men or women. Typically men drive the lift trucks and stack cans. Most other jobs are performed by either men or women. In general most on-farm processing labor is performed by women and students.

Wage rates vary little from job to job within an on-farm processing operation. Frequently the only real wage variations involve wage rates paid to lift truck operators, foremen, and men versus women. Lower wage rates for women are generally based upon lighter physical work assignments such as sorting. Lift truck operation and the foreman's duties require more skillful personnel who must be compensated accordingly.

Wage rates between plants were quite consistent. Table 6 shows the approximate industry wage rates for workers operating a typical plant.

### Summary of On-Farm Processing Costs

Season processing costs for each operation or component were calculated for various levels of output. All cost figures for the varying output levels shown in Table 7 were computed in the same manner as described

TABLE 6. On-Farm Processing Labor Costs (per hour of operation)

| Typical Labor Cost per<br>Operating Hour   | Total Cost<br>per Hour |
|--|------------------------|
| <u>Worker and Job</u>  |                        |
| 6 quality control sorters<br>(women) @ \$1.90/hr.  | \$11.40                |
| 1 lab worker (woman)<br>@ \$1.90/hr.   | 1.90                   |
| 4 can fillers (2 men)<br>@ \$2.12/hr.  | 4.24                   |
| (2 women)<br>@ \$1.90/hr.  | 3.80                   |
| 2 lift truck operators<br>(men) @ \$2.25/hr.   | 4.50                   |
| 1 foreman (man)<br>@ \$2.25/hr.  | <u>2.25</u>            |
| Total wage bill per hour   | \$28.09                |
| Social security, workman's<br>compensation and all<br>fringe benefits (approx-<br>imately 10% of the total<br>wage bill) | <u>2.81</u>            |
| <u>Total Labor Cost per Operating Hour</u>   | \$30.90                |

below. An explanation of the computations for a finished product volume of 1,000,000 pounds will illustrate the procedure used. Component cost estimates per pound of finished product were also calculated and are shown in Table 8.

Tables 7 and 8 summarize the estimated annual costs for the synthetic plant previously described. All costs were computed in terms of the finished product. Cost figures are based upon various amounts of finished product that might be produced annually by a plant the size of the model. Selected cost estimates were chosen for annual outputs of .5, .75, 1.0, 1.25, 1.5, and 1.75 million pounds of processed product. Examining this wide range of outputs would serve two purposes: (1) large growers, or combinations of growers, considering developing an on-farm processing plant could estimate their average production costs by selecting the output which is most representative of their expected yearly production average. (2) Examination of a wide range of outputs permits the grower processor, or prospective grower processor, to see the cost relationships associated with fluctuating supplies. Again the reader should keep in mind the costs summarized in Tables 7 and 8 are average approximations of typical processing costs. Actual costs for different plants and different years may vary considerably.

TABLE 7. Annual On-Farm Processing Costs

| Total<br>Volume<br>(lbs.) | Wages    | Sugar     | Cans      | Power &<br>Elec-<br>tricity | Pitter<br>Rental | Storage<br>and<br>Handling | Plant<br>Insur-<br>ance | Product<br>Insur-<br>ance | Selling<br>Cost<br>(broker's<br>fee) | Depreci-<br>ation | Repairs<br>and<br>Maint. | Net Raw<br>Product<br>Waste | Inspec-<br>tion<br>Charge | Charge<br>for<br>Owner's<br>Labor | Interest<br>on<br>Invest-<br>ment | Admin.<br>and<br>Misc. | Taxes<br>(prop-<br>erty) | Total<br>Processing<br>Cost | Total<br>Cost<br>per<br>Lb. |
|---------------------------|----------|-----------|-----------|-----------------------------|------------------|----------------------------|-------------------------|---------------------------|--------------------------------------|-------------------|--------------------------|-----------------------------|---------------------------|-----------------------------------|-----------------------------------|------------------------|--------------------------|-----------------------------|-----------------------------|
| -----dollars-----         |          |           |           |                             |                  |                            |                         |                           |                                      |                   |                          |                             |                           |                                   |                                   |                        |                          |                             |                             |
| 500,000                   | 1,931.25 | 9,801.67  | 8,666.32  | 333.32                      | 2,750.00         | 2,499.90                   | 375.00                  | 99.35                     | 2,980.50                             | 5,250.00          | 375.00                   | 3,500.00                    | 450.00                    | 375.00                            | 5,250.00                          | 1,000.00               | 300.00                   | 45,937.31                   | .0919                       |
| 750,000                   | 2,896.88 | 14,687.50 | 13,000.00 | 500.00                      | 2,750.00         | 3,750.00                   | 375.00                  | 149.03                    | 4,470.75                             | 5,250.00          | 375.00                   | 5,250.00                    | 650.00                    | 562.00                            | 5,250.00                          | 1,000.00               | 300.00                   | 61,217.16                   | .0816                       |
| 1,000,000                 | 3,862.50 | 19,583.26 | 17,333.16 | 666.66                      | 2,750.00         | 4,999.95                   | 375.00                  | 198.70                    | 5,961.00                             | 5,250.00          | 375.00                   | 7,000.00                    | 840.00                    | 750.00                            | 5,250.00                          | 1,000.00               | 300.00                   | 76,495.23                   | .0765                       |
| 1,250,000                 | 4,828.13 | 24,479.13 | 21,666.32 | 833.32                      | 2,750.00         | 6,249.40                   | 375.00                  | 248.38                    | 7,451.25                             | 5,250.00          | 375.00                   | 8,750.00                    | 1,025.00                  | 913.00                            | 5,250.00                          | 1,000.00               | 300.00                   | 91,743.91                   | .0734                       |
| 1,500,000                 | 5,793.75 | 29,375.00 | 26,000.00 | 1,000.00                    | 2,750.00         | 7,500.00                   | 375.00                  | 298.05                    | 8,941.50                             | 5,250.00          | 375.00                   | 10,500.00                   | 1,225.00                  | 1,125.00                          | 5,250.00                          | 1,000.00               | 300.00                   | 107,058.30                  | .0714                       |
| 1,750,000                 | 6,759.38 | 34,270.76 | 30,333.16 | 1,166.66                    | 2,750.00         | 8,759.95                   | 375.00                  | 347.73                    | 10,431.75                            | 5,250.00          | 375.00                   | 12,250.00                   | 1,500.00                  | 1,312.50                          | 5,250.00                          | 1,000.00               | 300.00                   | 122,431.89                  | .0700                       |

TABLE 8. Costs per Pound of On-Farm Processing (¢)

| Total<br>Volume<br>(lbs.) | Wages | Sugar | Cans | Power &<br>Elec-<br>tricity | Pitter<br>and<br>Rental | Storage<br>and<br>Handling | Plant<br>Insur-<br>ance | Product<br>Insur-<br>ance | Selling<br>Cost<br>(broker's<br>fee) | Depreci-<br>ation | Repairs<br>and<br>Maint. | Net Raw<br>Product<br>Waste | Inspec-<br>tion<br>Charge | Charge<br>for<br>Owner's<br>Labor | Interest<br>on<br>Invest-<br>ment | Admin.<br>and<br>Misc. | Taxes<br>(prop-<br>erty) | Total<br>Cost<br>per<br>Lb. |
|---------------------------|-------|-------|------|-----------------------------|-------------------------|----------------------------|-------------------------|---------------------------|--------------------------------------|-------------------|--------------------------|-----------------------------|---------------------------|-----------------------------------|-----------------------------------|------------------------|--------------------------|-----------------------------|
| 500,000                   | .39   | 1.96  | 1.73 | .07                         | .55                     | .50                        | .08                     | .02                       | .60                                  | 1.05              | .08                      | .70                         | .09                       | .08                               | 1.05                              | .20                    | .06                      | 9.19                        |
| 750,000                   | .39   | 1.96  | 1.73 | .07                         | .37                     | .50                        | .05                     | .02                       | .60                                  | .70               | .05                      | .70                         | .08                       | .07                               | .70                               | .13                    | .04                      | 8.16                        |
| 1,000,000                 | .39   | 1.96  | 1.73 | .07                         | .27                     | .50                        | .04                     | .02                       | .60                                  | .52               | .04                      | .70                         | .08                       | .08                               | .52                               | .10                    | .03                      | 7.65                        |
| 1,250,000                 | .39   | 1.96  | 1.73 | .07                         | .22                     | .50                        | .03                     | .02                       | .60                                  | .42               | .03                      | .70                         | .08                       | .07                               | .42                               | .08                    | .02                      | 7.34                        |
| 1,500,000                 | .39   | 1.96  | 1.73 | .07                         | .18                     | .50                        | .03                     | .02                       | .60                                  | .35               | .03                      | .70                         | .08                       | .08                               | .35                               | .07                    | .02                      | 7.14                        |
| 1,750,000                 | .39   | 1.96  | 1.73 | .07                         | .16                     | .50                        | .02                     | .02                       | .60                                  | .30               | .02                      | .70                         | .09                       | .07                               | .30                               | .06                    | .02                      | 7.00                        |

-----Cents-----

Calculation of Cost Estimates.--

(1) Labor Costs: The previously determined labor operating cost of \$30.90 per plant operating hour was utilized in calculating the annual labor cost estimates. Calculating the total labor cost involved multiplication of the total season operating hours by the total labor cost per hour.

|                             |                   |
|-----------------------------|-------------------|
| Operating hours             |                   |
| 1,000,000 pounds ÷ 8,000    |                   |
| pounds per hour = 125 hours |                   |
| 125 hours x \$30.90/hr =    | \$3,852.50        |
| Total season labor cost =   | <u>\$3,852.50</u> |

(2) Sugar: The cost of sugar to the on-farm processor in 1971 averaged \$.1175 per pound. Each thirty pound tin contains five pounds of sugar and twenty-five pounds of cherries. Total sugar cost is computed by multiplying the sugar requirement per tin (5 lbs.) times the number of thirty-pound tins required to produce 1,000,000 pounds of processed cherries. This figure is then multiplied by the cost per pound of sugar giving the total sugar cost.

|  |                    |
|--|--------------------|
| Tins required:                                     |                    |
| 1,000,000 lbs. ÷ 30 pound/tin = 33,333 tins        |                    |
| 333,333 x 5 lbs. per tin = 166,665 pounds of sugar |                    |
| <u>Total sugar cost =</u>                          | <u>\$19,583.26</u> |



(3) Can Cost: Can costs based upon 1971 figures were \$.52 per can. Multiplying the cost per can times the number of cans needed produces the total can cost.

$$33,333 \times \$ .52 = \$17,333.16$$

$$\underline{\text{Total can cost}} = \underline{\$17,333.16}$$

(4) Power and Electricity Cost: Information from the records of on-farm processors indicates the power and electricity costs of an on-farm processing unit runs about \$.02 per can. Nearly all power is derived from electricity. Total power and electricity cost was obtained by simply multiplying the cost per can by the number of cans packed.

$$33,333 \text{ cans} \times \$ .02/\text{can} = \$666.66$$

$$\underline{\text{Total season power and electricity cost}} = \underline{\$666.66}$$

(5) Pitter Rental: All on-farm processors rent pitting machines from a single company. The standard rental rate is \$550.00 per season for each pitter. Thus the total pitter cost for a five pitter operation would be \$2,750.

$$\underline{\text{Total pitter cost}} = \underline{\$2,750}$$

(6) Storage and Handling: Storage and handling costs were computed on the basis of a typical \$.15 charge per tin for the first month's storage and handling. Although storage time required varies from year to year for analytical purposes cost computations were made on the basis of one month's storage. Profit analysis

conducted in a later section will explore this cost in greater detail. Multiplying the number of tins packed times the storage and handling cost for the first month yields the total storage and handling cost.

$$33,333 \text{ tins} \times \$0.15/\text{tin} = \$4,999.95$$

$$\underline{\text{Total storage and handling cost}} = \underline{\$4,999.95}$$

(7) Plant Insurance: Plant insurance covering fire, theft, and liability for the building and plant equipment was computed at a rate of .5% of the total building and machinery replacement cost.

$$\$75,000 \times .005 = \$375.00$$

$$\underline{\text{Total plant insurance cost}} = \underline{\$375.00}$$

(8) Product Insurance: Most on-farm processors carry product insurance covering fire, theft, liability, and product spoilage during transportation and storage. Insurance rates for this coverage amounts to about 1 percent of the total value of their finished product. Based on a market price of \$.1987 per pound (see computation for selling cost) this cost would amount to:

$$\$0.1987 \times 1,000,000 \text{ lbs.} = \$198,700$$

$$\$198,700 \times .001 = \$198.70$$

$$\underline{\text{Total product insurance cost}} = \underline{\$198.70}$$

(9) Selling Cost: Most on-farm processors sell nearly all of their product through brokers. On-farm processors not selling through a broker often discover

they have to deduct from their price an amount comparable to the fee charged by a broker. Large buyers generally felt that because on-farm processors only sell one type of product (frozen cherries) they should discount their price from those at the "going market rate." Therefore, whether they sell directly or through a broker, in general, on-farm processors will incur a cost comparable to that of a broker's fee. For analytical purposes it was assumed that all sales are made through a broker. The broker's fee was considered the selling cost. The broker's fee based upon 1970 rates was 3 percent of the market value of the processor's cherry pack.

Determining for analytical purposes what might be considered the average price for frozen tart cherries has some difficulties because cherry supplies and market prices fluctuate significantly from year to year (Table 9 presented later in this chapter illustrates this). After careful consideration the average price was computed on the basis of market prices during the recent three seasons of 1968, 1969, and 1970. This time period was used because processing costs were computed from figures covering this same time span.

The average price for frozen tart cherries based upon this period (1968-1970) was \$.1987 per pound. This figure is very close to the early 1971 market price in Michigan ranging from \$.19 to \$.20 per pound between the

months of July and October. Since the author and many processors believe 1971 represents what might be described as an average year considering the tart cherry supply and raw product price, the \$.1987 estimate appears fairly reliable for the purpose of this analysis.

Value of frozen pack

$$1,000,000 \text{ lbs.} \times \$0.1987/\text{lb.} = \$198,700.00$$

$$\$198,700 \times .03 = \$5,961.00$$

$$\underline{\text{Total selling cost}} = \underline{\$5,961.00}$$

(10) Building and Machinery Depreciation: For simplicity all machinery was estimated to have a useful life of about twelve years. Although the useful productivity of most machinery components varies, a twelve-year average life was estimated by processors to be suitable for cost estimation purposes. The straight line depreciation method was utilized to determine the charge. Simple division of the number of years of productive service into the total machinery outlay cost gives the yearly depreciation charge for all machinery.

$$\$54,000 \div 12 \text{ years} = \$4,500.00$$

The building depreciation was calculated in the same fashion as machinery. The building was estimated to furnish useful productivity spanning a fifteen-year period.

$$\$15,000 \div 15 \text{ years} = \$750.00$$

$$\$4,500 + \$750.00 = \$5,250$$

$$\underline{\text{Total yearly depreciation charge}} = \underline{\$5,250}$$

(11) Repairs and Maintenance: Repairs and maintenance costs per season were estimated to be about .5 percent of the total building and machinery investment cost.

$$\$75,000 \times .005 = \$375.00$$

$$\underline{\text{Total repair and maintenance cost}} = \underline{\$375.00}$$

(12) Net Raw Product Waste: On the average thirty-three pounds of cherries are required to produce one thirty-pound tin of frozen cherries. In other words, for every thirty-pound tin of frozen cherries produced, three extra pounds of raw cherries must be fed into the line. Since the on-farm processing operation is being analyzed separately from the farming operation, these three unproductive pounds per thirty-pound tin must be accounted for. The analyst assumes that had the farmer not processed his own cherries he would have sold them to traditional processors and received the "going market price" (adjusted to take into account raw product quality grade). Thus the grower's cherries that do not increase finished product output should be considered waste and charged to the processing operation according to their average raw product value.

Raw product waste is caused by the sorting out of poor quality cherries, pit, and juice losses. "Sort outs" as they are called, can be sold for use in juice. The value of these cherries is generally quite low and varies from year to year. The on-farm processor is concerned with the net raw product cost of this waste. To compute this the on-farm processors must subtract the value of his "sort outs" that are sold for juice from the average value of the unproductive raw product.

The average market value of the raw product during the 1968-1970 period was about \$.10 per pound (this is an average value considering the range of raw product grades). The value of the "sort outs" during this same period was estimated to be about \$.03 per pound.

Value of sort outs

$$33,333 \text{ tins} \times 3 \text{ lbs/tin} = 99,999 \text{ pounds}$$

$$99,999 \text{ pounds} \times \$0.03/\text{lb.} = \$2,999.97$$

Value of unproductive raw product

$$99,999 \text{ pounds} \times \$0.10 = \$9,999.90$$

$$\$9,999.99 - \$2,999.97 = \$6,999.93$$

$$\underline{\text{Total net raw product waste}} = \underline{\$6,999.93}$$

(13) Inspection Cost: The inspection process utilized by many on-farm processors is cold storage inspection conducted by the United States Department of Agriculture. Cold storage inspection costs include:

(1) a flat rate of \$62.50 per 1,000 pound lot, (2) a

sampling charge of \$10.00 per hour, and (3) travel and living expenses of an inspector. The inspector's expenses include his room and board plus driving mileage at \$.10 per mile based from the United States Government Inspection Office in Battle Creek, Michigan. Obviously inspection costs will vary depending upon plant location, the amount sampled, and time required. The United States Department of Agriculture inspection service estimated the average cost of inspecting 1,000,000 pounds of cherries to be about \$840.00. This estimate was based upon a plant location 150 miles from the United States Inspection Office located in Battle Creek, Michigan. Inspection time was estimated to last about five days including driving time. The cost breakdown for inspection according to this criteria is as follows:

Flat rate charge: \$62.50/1,000 lbs.

1,000,000 lbs. ÷ 1,000 lbs/lot =

10 lots (at \$62.50/lot) = \$625.00

Sampling time: 10 hrs at \$10/hr = 100.00

Driving expense: 300 total miles  
at \$.10/mile = 30.00

Lodging, meals, and other expenses:

\$18/day for five days = 90.00

Total Inspection Charge = \$840.00

(14) Charge for Owner's Labor: The owner's labor was arbitrarily computed at \$3 per hour. To take into account activities performed by the owner in addition to the normal physical operation of the plant during the short processing season, owner's labor was calculated based on double the hours of plant operation. This estimates his personal labor charge to include such activities as planning and post season plant maintenance. For the 1,000,000 pound operation the charge for the owner's labor would be \$750.00

$$125 \text{ hrs.} \times 2 = 250 \text{ hours}$$

$$250 \text{ hrs.} \times \$3/\text{hr} = \$750.00$$

$$\underline{\text{Total charge for owner's personal labor} = \$750.00}$$

(15) Interest on Investment: The interest charge was based on an interest rate of 7 percent. Multiplying the entire investment outlay cost by 7 percent will provide the annual interest charge.

$$\$75,000 \times .07 = \$5,250$$

$$\underline{\text{Total interest on investment charge} = \$5,250}$$

(16) Administrative and Miscellaneous Costs:

A charge of \$1,000 was utilized to account for all administrative and miscellaneous costs incurred by the on-farm processor. Major items covered by this cost include office supplies, bookkeeping, accounting, cleaning and toilet supplies, laboratory equipment, telephone, and travel.



Total administrative cost = \$1,000

(17) Property Tax: Property tax was estimated to amount to about \$300. The estimate was obtained by charging a 10 mill levy on slightly less than one-half of the total property value.

$$30,000 \times .010 = \$300.00$$

Total property tax = \$300.00

(18) Total Processing Cost: Simple addition of all the component costs involved in the production of 1 million pounds of processed tart cherries provides the total season operating cost.

Total season operating cost = \$76,495.16

(19) Total Operating Cost per Pound: Dividing the total cost (derived above) by the total number of pounds processed (finished product) yields the total operating cost per pound of finished product.

$$\$76,495.16 \div 1,000,000 \text{ lbs.} = \$.0765$$

Total operating cost per pound = \$.0765

#### Comments Concerning the Synthetic Plant Costs.--

The cost data presented in this chapter approximates on-farm processing costs that can be expected in an average year by a plant similar to the synthetic model plant. Since in reality an "average year" is rarely experienced in the tart cherry processing industry, these costs will

vary considerably from year to year. Decisions of the manager concerning when to sell the finished product and his overall operational efficiency will significantly affect these cost figures.

Examination of some of the cost components most likely to significantly affect total seasoned costs would present a more clear understanding of the cost relationships associated with on-farm processing. Component costs that are most apt to appreciably affect total season costs for a given volume of output are: (1) the selling cost, (2) the storage cost connected with varying lengths of storage time, and (3) the net raw product waste cost. Other cost fluctuations would probably be of a smaller magnitude. Taken individually these other cost components would be less likely to significantly affect the total cost.

Probably the cost most influential in affecting the total season processing cost is storage and handling. Some processors are not able to sell all of their cherries within one month after processing. As a result of this they are forced into a speculative position. If cherry prices rise during the period when they sell their stored product, processors stand to benefit provided returns from the price rise exceed the additional storage costs. Unfortunately, from the standpoint of the processor, this is not in fact what frequently happens. Tart cherry price

fluctuations within the marketing season often do not cover storage costs over time. Thus speculative losses often result.

Cost increases from storage and handling could conceivably increase total costs by three or four thousand dollars for a processor packing 1,000,000 pounds of cherries. For example if the processor stored his product an average period of four months for his entire product volume his costs would increase by \$.05 per tin per month. The total cost increase would amount to about \$5,000.00 assuming no price rises occurred during the storage period. Total cost per pound would have increased by \$.005. The 1968-1970 period illustrates the typical storage costs associated with the pattern of price movements during the processing season. During these years the average opening tart cherry price was about \$.1975 per pound, while the price at the end of these seasons averaged about \$.1987. The difference of course being a scant \$.0012 per pound. Thus a processor producing 1 million pounds of cherries with an average storage period on his entire inventory of four months would encounter a speculative loss of between \$3,800.00 and \$5,000.00.<sup>1</sup>

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<sup>1</sup>A one-month storage charge was assumed to be a normal operating cost. Speculative gain or loss on storage is thereby based upon storage in excess of this one-month period.

Variation in the selling cost could also significantly alter total processing costs. If an on-farm processor were able to establish good market contacts without need for a brokerage charge, he could perhaps reduce his costs by as much as four or five thousand dollars per season.

Substantial cost variation (by as much as \$5,000.00) in the cost connected with the net raw product waste could also significantly affect total costs. Modest price increases or decreases in raw product prices and/or the value of sort out juice cherries would increase or decrease the total cost depending upon the magnitude and direction of these changes (see cost analysis of the net raw product waste).

A modest total cost increase would result by changing the machinery depreciation rate. For example if the machinery was expected to last only ten years instead of twelve a cost increase of \$900.00 would result. Conversely, a cost savings of about \$643.00 would result if the machinery were productive for fourteen years instead of twelve.

Variation in wage rates would also moderately affect total costs. Any future cost fluctuation resulting from labor is likely to increase total costs. The reason for this is that the low wage rates upon which the labor cost was calculated were based upon a labor

market with an abundant supply of workers. On-farm processors operating within an economy of full employment could expect wage rate increases. Attracting labor in an economy with full employment would probably require processors to increase their worker's wage rates. The resulting hourly wage increases could average as much as \$.50 per worker. Hence for a processing operation producing 1 million pounds of frozen cherries, total costs could increase about \$900.00.

Other costs that would moderately affect the total processing cost would be cans and sugar. A sugar price increase of \$.0025 per pound would increase the costs of processing 1 million pounds of cherries by about \$416.00. a cost increase of \$.02 per can would raise total costs by about \$667.00. Comparable cost decreases would be obtained if sugar and can prices decreased by the same amounts above.

Most of the remaining cost figures would remain fairly stable. Although some fluctuations could occur their individual impact would not appreciably affect the total cost structure.

#### Economic Evaluation of On-Farm Processing

Economic evaluation of on-farm processing was accomplished by comparing total processing costs per pound at various output levels with an estimated average

processing margin. The difference between the two represents total profit per pound of finished product.

Selecting a suitable processing margin to compare with the processing costs presented a serious problem. Modest error could significantly distort the profitability estimation. For this reason the profit margins correlating with the period in which the cost estimates were calculated (1968-70) were not utilized as the exclusive reference. Considering the extremely wide processing margin variations over the past few years (see Table 9) it was felt a much larger sample of processing margins would provide a more accurate estimate. The average processing margin was estimated to be about \$.091 per pound. This representative figure was obtained by comparing the average processing margins during the period 1960-1970 and 1968-70 (see Table 10). The adjusted average (weighted heavily toward the larger sample) was determined to be \$.091 per pound.

Based upon an average processing margin of about \$.091 per pound and the average costs computed for the typical firm, on-farm processing appears to be profitable when the annual average volume of production is 750,000 pounds or more with the size of plant analyzed (see Table 11). Growers who on the average process between 750,000 and 1,000,000 pounds can expect modest annual profits (\$7,050 to \$14,500) while those exceeding 1,000,000 pounds with the same plant size can anticipate larger

TABLE 9. Processing Margins for Frozen Tart Cherries  
1960-1970

| Marketing<br>Year | F.O.B. Frozen<br>Tart Cherry<br>Prices (Cents<br>per lb.) | Grower Price<br>Per Pound | Processing Margin<br>(Difference Between<br>Columns 1 and 2) |
|-------------------|---|---------------------------|--|
| 1960              | 16.5  | 7.7                       | 8.8  |
| 1961              | 13.9  | 8.3                       | 5.6  |
| 1962              | 11.1  | 4.7                       | 6.4  |
| 1963              | 18.7  | 9.5                       | 9.2  |
| 1964              | 10.9  | 5.0                       | 5.9  |
| 1965              | 12.3  | 5.0                       | 7.3  |
| 1966              | 24.1  | 13.9                      | 10.2   |
| 1967              | 32.4  | 18.0                      | 14.4   |
| 1968              | 25.2  | 15.0                      | 10.2   |
| 1969              | 16.2  | 7.6                       | 8.6  |
| 1970              | 18.2  | 7.4                       | 10.8   |

TABLE 10. Average Processing Margins

| Marketing<br>Year | F.O.B.<br>Average<br>Frozen Tart<br>Cherry Prices<br>(Cents<br>per lb.) | Average<br>Grower Price<br>(Cents<br>per lb.) | Average<br>Processing<br>Margin<br>(Cents<br>per lb.) | Adjusted<br>Average<br>Margin<br>(Cents<br>per lb.) |
|-------------------|---|---|---|---|
| 1960-1970         | 18.14   | 9.28  | 8.86  | 9.10  |
| 1968-1970         | 19.87   | 10.00   | 9.87  |   |

annual profits (from \$22,000 to \$36,750). Analysis of the profitability data summarized in Table 11 indicates the breakeven point for processing tart cherries in a plant similar to the model on-farm processing unit would occur when about 600,000 pounds of finished product was produced.

The profit estimates computed in Table 11 assumes that all of the product was sold after one month of storage. Since many processors may be forced to store their product for a longer period of time, these profit estimates may be slightly exaggerated. Much of the costs associated with storage of tart cherries are often not covered by price rises over the corresponding time period. Taking this into account, Table 12 provides a more conservative estimate of on-farm processing profitability. Table 12 summarizes on-farm processing profits based upon average storage of the entire product over a four-month period.<sup>1</sup> The conservative estimates shown in this table are based on the assumption that storage costs will not be compensated by corresponding price rises over time. Profit estimates appearing in Table 12 were simply calculated by decreasing the profit estimates in Table 11 by the corresponding cost increases associated with three additional months of storage.

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<sup>1</sup>Storage costs after the first month were computed on the basis of \$.05 per tin per month.



TABLE 11. Estimated Average Profits for On-Farm Processing (One-Month Storage)

|   | 500,000<br>lbs. | 750,000<br>lbs. | 1,000,000<br>lbs. | 1,250,000<br>lbs. | 1,500,000<br>lbs. | 1,750,000<br>lbs. |
|---|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|
| Processing Cost<br>Per lb. (cents)              | 9.19            | 8.16            | 7.65              | 7.34              | 7.14              | 7.00              |
| Average Processing<br>Margin (cents<br>per lb.) | 9.10            | 9.10            | 9.10              | 9.10              | 9.10              | 9.10              |
| Profit (cents<br>per lb.)                       | -.09            | .94             | 1.45              | 1.76              | 1.96              | 2.10              |
| Total Profit<br>(Dollars)                       | -450.00         | 7,050.00        | 14,500.           | 22,000.           | 29,400.           | 36,750.00         |

96

TABLE 12. Estimated Average Profits for On-Farm Processing (Four-Month Storage)

|                           | 500,000<br>lbs. | 750,000<br>lbs. | 1,000,000<br>lbs. | 1,250,000<br>lbs. | 1,500,000<br>lbs. | 1,750,000<br>lbs. |
|---------------------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|
| Total Profit<br>(Dollars) | 2,949.90        | 3,300.00        | 9,500.05          | 15,750.60         | 21,900            | 27,990.05         |

Increasing the storage time from one to four months does not appreciably affect the breakeven volume of on-farm processing. As with one month's storage, all operations processing more than 750,000 pounds of cherries would be profitable. However, the magnitude of the various profit levels would be appreciably reduced.

Taken together the two tables (11 and 12) give a fairly representative picture of the range of profits for an on-farm processing firm. The profit range of most on-farm processing firms similar to the model plant would be included within this range.

Analysis comparing expected processing margins with processing costs is not the only technique that can be utilized to calculate the expected profits of an on-farm processing firm. An accounting procedure examining the returns a grower would receive from sales of his processed product versus the returns he would receive by selling the raw product directly to the traditional processor provides another analytical technique to examine the profitability of on-farm processing. Both procedures would yield

#### Processing Costs

raw product:

1,100,000 lbs. x \$.10/lb. = \$110,000.00

plant operation<sup>1</sup> = \$69,495.00

Total Cost = \$179,495.00

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<sup>1</sup>The plant operation charge was determined by subtracting the corresponding net raw product waste cost

precisely the same profit estimates for the processing operation. Many on-farm processors would probably prefer this type of analysis. The example provided below illustrates this profit analysis procedure. The computations were based upon production of 1,000,000 pounds of frozen cherries.

Total Revenue

Finished product<sup>1</sup>:

1,000,000 x \$.191/lb. = \$191,000.00

Juice cherries:

100,000 lbs. x .03 = 3,000.00

Total Revenue = \$194,000.00

Total Profit:

\$194,000.00 - \$179,495 = \$14,505.00

Note both methods of profit analysis produce essentially the same results.

Low overhead costs relative to traditional processing methods appear to be the major factor contributing to the profitability of on-farm processing. On-farm processors experience few overhead costs other than those associated with their fixed investment in their building and equipment.

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from the total cost connected with processing 1 million pounds of cherries. This was necessary to avoid double cost accounting.

<sup>1</sup>For consistency with the marginal profit analysis the finished product price was determined to be 19.1 cents per pound. This figure was obtained by addition of the previously calculated average processing margin (9.1¢/lb.) with the average grower price (10¢/lb.).

A small on-farm processing plant similar to the model does not require any year-round full-time staff other than the owner-operator himself. Typically the owner performs most of the tasks that a larger plant would have to hire a staff to accomplish. Planning, supervision, input purchasing, labor recruiting, minor repair and maintenance are all functions performed by the grower-processor himself.

Since the line is set up to exclusively process cherries, no costly line changes are required. The simplicity of the operation combined with the timing of the processing season make labor recruitment a relatively simple and inexpensive task under recent conditions. The influx of high school and college students into the labor market during the processing season is an advantage to the on-farm processor in labor recruitment. The ability to obtain reliable inexpensive labor is a key factor contributing to the favorable economic position of the on-farm processor.

Another factor contributing to the favorable economic position of the on-farm processing firm is its present lack of conflict with environmental quality standards. Small on-farm processors in general are able to avoid these problems due to their remote locations and the small volume of waste water they must dispose. Although up until now most on-farm processors have been relatively

free from environmental conflict, larger on-farm processors (those processing 2 to 3 million pounds), will likely experience problems with environmental quality control regulations in the future. The larger on-farm processors will probably be required to spray irrigate their waste water, which could slightly increase their costs.

#### Future On-Farm Processing Growth in Michigan

The economic potential of on-farm processing, combined with the demand for a high quality cherry, create a favorable environment for the growth of on-farm processing. If this system is indeed profitable, as the data presented in this study indicates, growth appears imminent.

Although the economic profitability of on-farm processing is certainly the most influential factor in the future development of on-farm processing, other factors are also important. Among these other more important factors are:

1. Coordination of mechanical harvesting and processing.
2. The increased ability to produce a higher quality product with the on-farm processing operation.
3. The trend toward larger farm size.

4. The financial position of large growers.
5. The willingness of large growers to take the necessary risks.
6. The ability of smaller growers to cooperatively organize and operate a joint processing plant.
7. The effect the environmental movement has upon both traditional and on-farm processors.
8. The circulation of information concerning on-farm processing technology and profit potential.

After weighing the relevant factors, it seems likely that on-farm processing will nearly triple within the next ten years. If this anticipated growth is in fact realized the number of processing firms will steadily increase from five at the present time to about fifteen by 1982. This would give on-farm processors control over about 24 percent of the entire national frozen pack. This estimate of on-farm processing growth is based upon the current situation. If environmental quality control problems become more threatening, or a consolidated sales organization is developed, the on-farm processing growth rate might accelerate somewhat. Under these conditions the number of on-farm processing units might increase from five to twenty, processing about 37 percent of the entire national frozen pack.

## CHAPTER V

### ALTERNATIVES TO IMPROVE MARKETING AND SALES OF PROCESSED TART CHERRIES

#### Introduction

The marketing and pricing situation confronting processors of frozen tart cherries involves a number of shortcomings. These processors are very concerned about the situation, and many feel the current cherry processing structure is seriously hampering their economic well being.

Large buyer users with considerable market buying power have created an environment threatening the survival of the small independent processing companies by keeping processing margins very low. There are many risks to the small processor who buys for cash and sells from a weak market power position in a market noted for instability. For a more detailed description of the selling and marketing problems of processors refer to Chapter II.

Growers have also indirectly felt the pressure exerted by large buyers. Low processing margins have forced processors to keep raw product prices at a minimum.

Marketing problems encountered by processors are not limited to a weak selling position. Small independent processors inadequately provide the services needed by the large buyer users. These services include more uniform quality, a guaranteed volume of a specific quality pack, technical assistance with product utilization and joint promotional efforts. Many processors believe their weak marketing position and their general inability to provide buyers with the most desirable amount of services makes change not only desirable but essential if they are to survive as independents.

Growers have also indirectly felt the pressure exerted by large buyers. Low processing margins have forced processors to keep raw product prices at a minimum.

The addition of eight or ten more processed tart cherry sellers within the near future because of the expected growth in on-farm processing would be very detrimental to the processed selling phase of the industry. The present imbalance of marketing power between buyers and sellers of processed tart cherries would be amplified. The forces now working to reduce cherry prices and processor profits would be strengthened. Increased industry price instability and inadequate provisions of buyer service by processors would become more serious problems.

Significant growth of on-farm processing could squeeze some existing processors out of operation. Lower



profit margins could force some traditional processors to phase out their facilities. Some processors indicated in the survey that this situation would result if the growth of on-farm processing was not met with a consolidated marketing organization to include on-farm processors along with other independent processing firms.

Processors have several alternatives available to achieve restructuring and hence meet the marketing, selling, and pricing challenges presently confronting them. The most pertinent of these alternatives are explored in this chapter along with a description of the key advantages and disadvantages of each alternative. Subsequent close examination focuses upon the alternative which appears to offer the most advantages considering the economic problems at hand and the attitudes of processors.

#### Objectives and Obstacles of Marketing Alternatives

Before the various marketing alternatives are discussed, a brief outline of the objectives and obstacles to the development of any restructuring or new marketing programs will be presented. Subsequent analysis of the individual marketing alternatives will thereby be enhanced.

### Marketing Objectives

1. To strengthen the market power position of processors. The most urgent marketing objective from the standpoint of processors is to create a more favorable balance of power between buyer users and sellers of frozen tart cherries. Elimination of undesirable buying practices, price undercutting, distress sales, and the disruptive influence of buyers (see Chapter II for a more detailed description of this situation) is an important objective of any restructuring effort.

2. Create price stability at a realistic level. Establishing price stability (both seasonal and yearly) is essential to the maintenance and development of a healthy cherry industry. Price stabilization to insure moderate returns on investment to both growers and processors is an important goal. Price stability would benefit the entire industry. Growers and processors would gain by obtaining fair and more dependable returns for their production and buyers would benefit by procuring cherries at the same price as their competitors which is one of their main concerns. Steady cherry prices could encourage greater innovation of new consumer products and hence overall demand expansion. With more stabilized prices, buyers and food retailers would also probably be more willing to promote tart cherry products. The effects of demand expansion is likely to be enhanced if

consumers are presented a steady supply (assisted by use of the tart cherry marketing order) of a product at stable prices.

3. Provide buyer services. The success of a marketing program will be greatly enhanced if it provides buyer users with additional services. These could include providing buyer users with large volumes of uniform quality pack, technical assistance concerning the product utilization, and assistance with promotion.

4. Expand tart cherry demand. An important objective of a tart cherry marketing program would be to expand the demand for tart cherries. Providing a strong promotional campaign in conjunction with efforts to stabilize prices could stimulate the demand for tart cherries. A strong consolidated selling organization could back up promotional efforts with product sales and other services which present industry-wide promotional organizations cannot do.

5. Input procurement cost reduction. Large-volume buying could possibly reduce costs for such major input items as cans and sugar.

6. Stimulate innovation in market development. Joint marketing alternatives would be in a much better position to undertake product research and market development programs than the present small individual processors. Innovative market development programs could stimulate industry growth and development.

7. Provide more efficient product distribution.

An important objective of coordinative marketing could be to move the product from the processor to the buyer user in the most efficient manner. Geographic coordination of product shipments to the buyers could reduce transportation costs.

8. Improve grower-processor relationships.

Changes in the structure or marketing methods for processed tart cherries could strengthen the relationships between the grower and processor through joint efforts. The two groups could work more closely together to provide a more efficient and smoothly functioning marketing system. Improved market coordination could result from more widespread cooperation between growers and processors.

9. Improve processor and buyer coordination.

Effective marketing programs could also attempt to improve coordination between processors and buyers. Encouraging buyer cooperation and providing useful customer services can help to enhance their relationship and reduce risks for both groups.

### Marketing Obstacles

1. Legal problems. Organizing to obtain a substantial degree of market power is likely to arouse attention concerning legality. Careful organization planning must be undertaken to avoid conflict with the

anti-trust laws. Otherwise legal suits and perhaps organizational dissolution may be required.

2. The "free rider" problem. Obtaining sufficient participation of processors and/or growers to be effective is not easy. Preventing the benefits of an organization to strengthen pricing and sales from going to non-participants ("free riders") would be important and difficult--complete success in this is improbable. Encouraging the participating membership to continue supporting the marketing program could become extremely difficult if they can reap many of the same benefits for nothing by staying out of the organization.

3. Unreasonable price increases. Misuse of greater pricing strength could put cherries at a serious disadvantage relative to competing fruit and other substitute products. All pricing considerations would need to be made on the basis of careful supply and demand analysis. Getting prices unrealistically high relative to substitute products could be very detrimental to industry sales and profits.

4. Adverse buyer reaction. The development of a marketing program for frozen cherry processors could be severely hampered by buyer user retaliation--particularly if the increased market power is used to unduly raise prices relative to alternative products. Buyer reduction in the utilization and/or promotion of tart cherries could

be very detrimental to the organization and the entire industry.

5. Large financial and managerial resource commitments might be required. Development and operation of a successful marketing organization would probably require substantial financial resources to finance processing, storage carrying, and management costs. The more services provided the greater the financial resources necessary. (Obtaining finances on a joint basis can be a significant advantage over the present system.)

#### Market Structure Alternatives

Marketing alternatives to change the current market structure for processed tart cherries would most likely be initiated by the efforts of processors, growers, or a joint grower-processor venture. The alternatives that are examined in this section are analyzed in relation to the changes they could institute over the present situation. Appraisal of the feasibility of the various marketing alternatives with respect to the attitudes of industry leadership is also examined.

#### Alternatives Involving Non-Collective Action

Alternative 1: Continuation of the Present Situation.--One alternative is of course a continuation of the present situation. Essentially this would be a non-action policy whereby processors permit the present

market structure and behavior pattern to run its course.

Continuation of the present marketing structure would perpetuate the same problems that have persisted in the past. The advantageous marketing power position held by large buyer users is not likely to be disrupted. It will likely increase with mergers and more concentration of buyer firms. Figure 5 depicts the market power relationships under the present marketing situation. The diagram illustrates the relative marketing power large buyer users possess.<sup>1</sup> The diagram, by pulling out one segment of the entire market, attempts only to show the relative marketing power of the three groups--growers, processors, and large buyer users.

With a continuation of the present marketing structure processors can expect continued weak market power, price instability, small margins, and low net profits returns.

In addition the expected growth of on-farm processing could significantly amplify the current marketing problems. Additional processed tart cherry sellers will further decentralize processed tart cherry sales thereby further fragmenting the sellers and weakening the market.

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<sup>1</sup>Note, the diagram does not imply that processors sell exclusively to one buyer. In fact each processor sells to several of the large buyers.

## CURRENT SITUATION

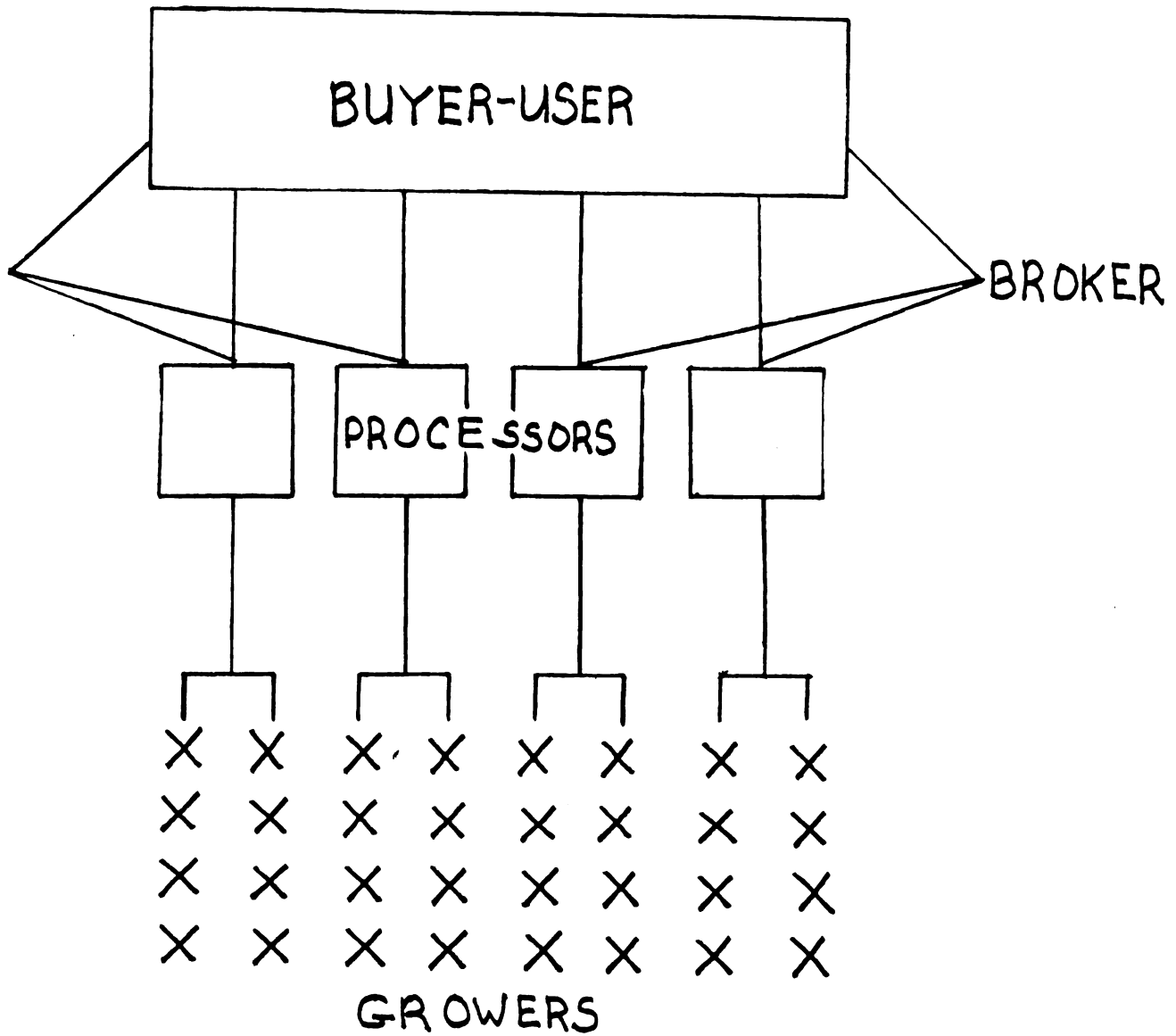


Figure 5



Processor inability to provide buyer services will also be a more serious problem with more, smaller firms.

The industry instability and frequent low profit margins perpetuated by the current marketing structure will eventually, and perhaps fairly soon, force the financially weaker firms to go out of business. Long-run planning horizons may indicate expected returns insufficient to cover necessary investments in plant modernization for many firms. In addition many firms can anticipate difficulty obtaining pack financing necessary to operate their facilities.

Major advantages of maintaining the present situation are:

1. Operation under current conditions involves a relatively large amount of individual firm decision making on the part of present processing firms--both in production and marketing activities.
2. The difficult task of organizing and developing a consensus for some kind of organization would not have to be tackled.
3. The potential legal difficulties associated with restructuring or implementing programs to strengthen processor market power would be avoided.

The major disadvantages associated with continuing in the present fashion are:

1. Buyers of frozen cherries will continue to be in a position to buy products at a relatively cheap price (resulting in low processor margins) as long as there are many small sellers.
2. Continued risk to processors and buyers of price rises and declines during the season which tends to weaken the demand for cherries will continue to be a problem.
3. Processors will have continued difficulty obtaining financing for their pack and for plant modernization and expansion.
4. In supplying user or "food converter" firms, it will be difficult for the small processors to provide the necessary volume requirements of the larger buying firms.
5. Few of the present processing firms have the staff or the resources to provide much in the way of customer services and promotion.
6. The anticipated growth of on-farm processing can be expected to amplify current marketing problems.

7. The uncooperative relationship between grower and processor is likely to persist.
8. If legislation is passed to strengthen farmer bargaining for raw product, processors may be squeezed by legalized monopoly for raw product with little ability to pass these increased costs along in the form of higher finished product prices.

Alternative 2: Voluntary Exit from the Industry.--

The second alternative examined involves voluntary discontinuation of cherry processing activities by some of the traditional processors. Some firms in response to the severe financial stress and uncertainty imposed upon them by the current marketing environment may elect to discontinue processing tart cherries. National firms, inefficient or weakly financed firms, and those under pressure from environmentalists are most likely to entertain this alternative. A situation of this type is most likely to occur if no action is undertaken to improve the present structure and marketing system. The impact of fewer processors with respect to the marketing position of the remaining processors is primarily dependent upon the number of firms exiting and the growth of on-farm processing.

Discontinuation of some present processing firms is likely to stimulate the growth of on-farm processing

because growers will try to protect their investments in orchards and mechanical harvesting equipment. Although some of the lost processing capacity of the exiting firms would be balanced by increases in the volume of the remaining established processors, the additional growth of on-farm processing would probably more than offset any market strengthening effect this might create for processors. The net impact of this development is likely to weaken the overall marketing position for processed tart cherry sellers. This is because on-farm processors lack complementary lines of other fruits and lack buyers contacts, both of which will tend to make them even weaker as sellers than the established processors who may go out of the cherry business.

#### Processor-Oriented Marketing Alternatives

Alternative 3: Processor Merger.--Merger among processing firms constitutes an alternative which processors could choose to strengthen their marketing position. Merger could reduce the number of firms and thereby presumably strengthen the relative marketing position of the remaining firms.

Larger firms could also improve product coordination between processors and buyers. Fewer firms controlling a larger volume of product would be in a much better position to serve the larger buyers by providing

them with a large volume of pack, providing technical product assistance concerning the best utilization of the product and assisting with intensive promotional efforts.

Figure 6 illustrates the power relationships that might be created following a modest amount of processor merger (merger activity reducing the number of firms by one-third to one-half). As Figure 6 illustrates processors would be in a slightly better position (relative to the current situation) to deal with buyers after a modest degree of merger.

Modest merger activity among processors would create some additional marketing power for processors. However, it is questionable if this power would be of the magnitude necessary to significantly improve their competitive position with large buyer users.

Most processor gains under this alternative would probably come at the expense of growers, a group not in a position to yield many benefits. The increased monopoly power created by processor merger would squeeze grower margins.

Some of the advantages of implementing the processor merger alternative would be:

1. Relatively few people would be required to effectuate the change.
2. Individual decision making would be preserved--especially for those firms not involved in the merger.

# PROCESSOR MERGER

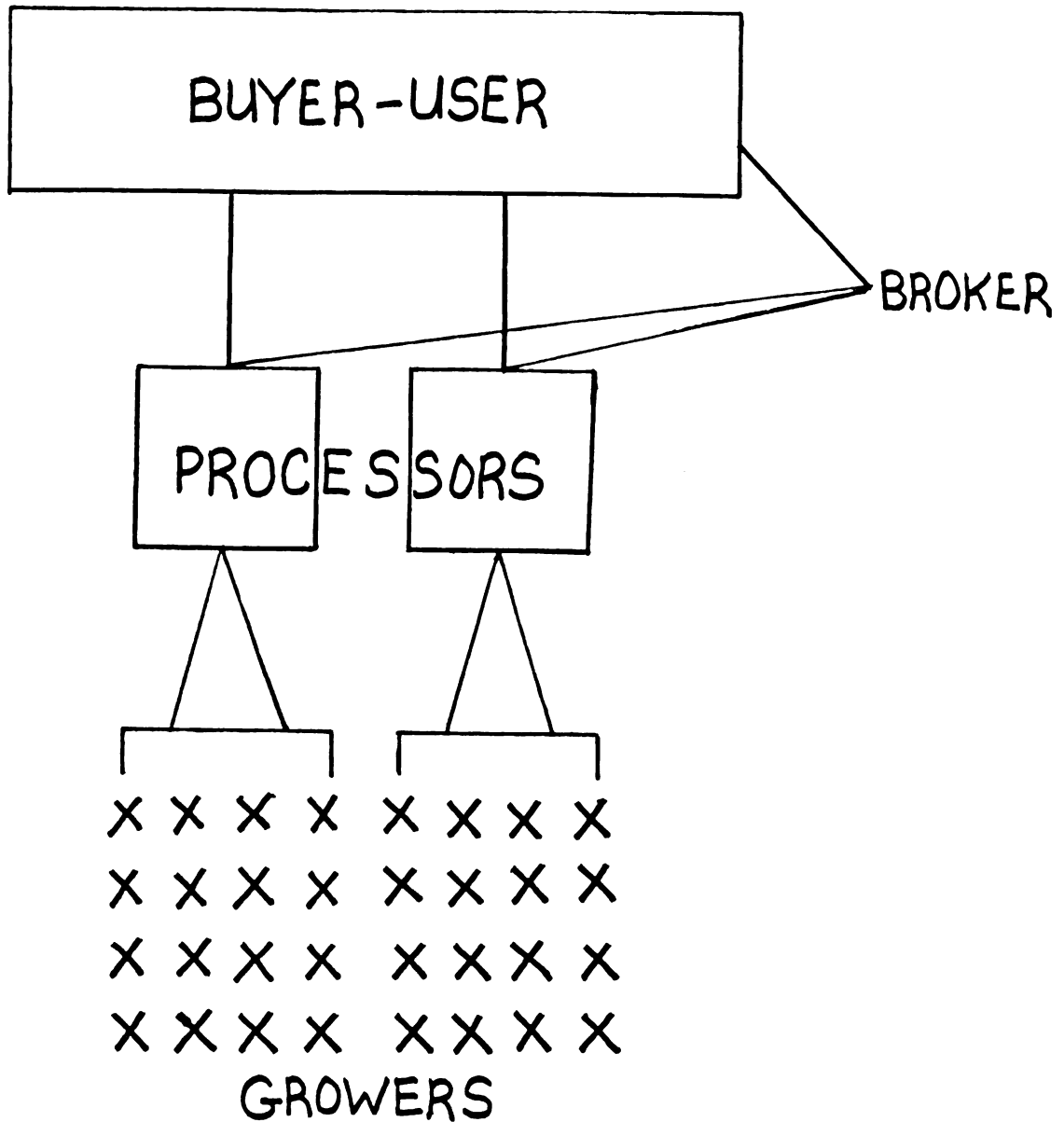


Figure 6

3. No grower acceptance would be required.
4. Maintenance of a uniform quality pack within the merged firms might be achieved with this alternative.
5. With careful planning, a modest amount of merger would not likely face legal threat.

The disadvantages of a merger program are:

1. Processor merger is not likely to achieve sufficient volume to significantly influence prices received for frozen cherries. Many processors would refuse to sacrifice their individual identity to a merging company.
2. Merger is not likely to concentrate control of a sufficient volume of product to greatly influence prices paid for inputs.
3. Extensive merger (of the scale necessary to significantly influence prices) might encounter serious legal difficulty.
4. Processor merger is likely to disrupt the grower-processor relationship.

Alternative 4: Processor Forward Vertical Integration.--Forward integration of processors to strengthen their relative marketing position could be accomplished in two ways: (1) by acquisition of dessert

manufacturing firms or development of their own remanufacturing facilities, or (2) through contractual arrangements with dessert manufacturers.

Vertical integration by ownership would be an attempt by processors to gain their own consumer access and/or weaken the market influence of present large buyer users. Should competition from the integrated processors (processor-remanufacturer) capture current remanufacturer buyer product markets, processors will have strengthened their own relative position. Integrated processors would then also have a share in both processing and remanufacturing returns.

The advantages of pursuing this type of vertical integration (by ownership) are:

1. Greater control over the entire marketing business including final consumer products by the existing processors would result.
2. Increased processor ability to influence frozen cherry prices would result by not having to sell exclusively to the present large buyer firms.

The disadvantages of processor vertical integration (by ownership) into dessert manufacturing include:

1. A substantial amount of capital investment would be required.



2. Obtaining expertise and managerial talent in the pie baking or desert manufacturing business would be necessary.
3. Processors would be unlikely to obtain firms of sufficient size to take more than a portion of the pack of the present freezer processors.
4. Processors would encounter difficulty competing with the large established food companies backed by substantial financial resources. Many established firms have quite diverse product lines which would be difficult to match by integrated processors, further increasing their difficulty in competing.
5. Buyers might strongly oppose processor encroachment into their markets. Predatory competitive practices could result.
6. More uniform quality control standards would still be needed.

Figure 7 shows the relative power relationships that could be created through a moderately successful forward vertical integration program involving processor ownership of the dessert manufacturing facilities. In diagram 7 the processing firms connected with the triangles represent the integrated processing firms. Some of the processors processed cherries are utilized by his

# PROCESSOR VERTICAL INTEGRATION

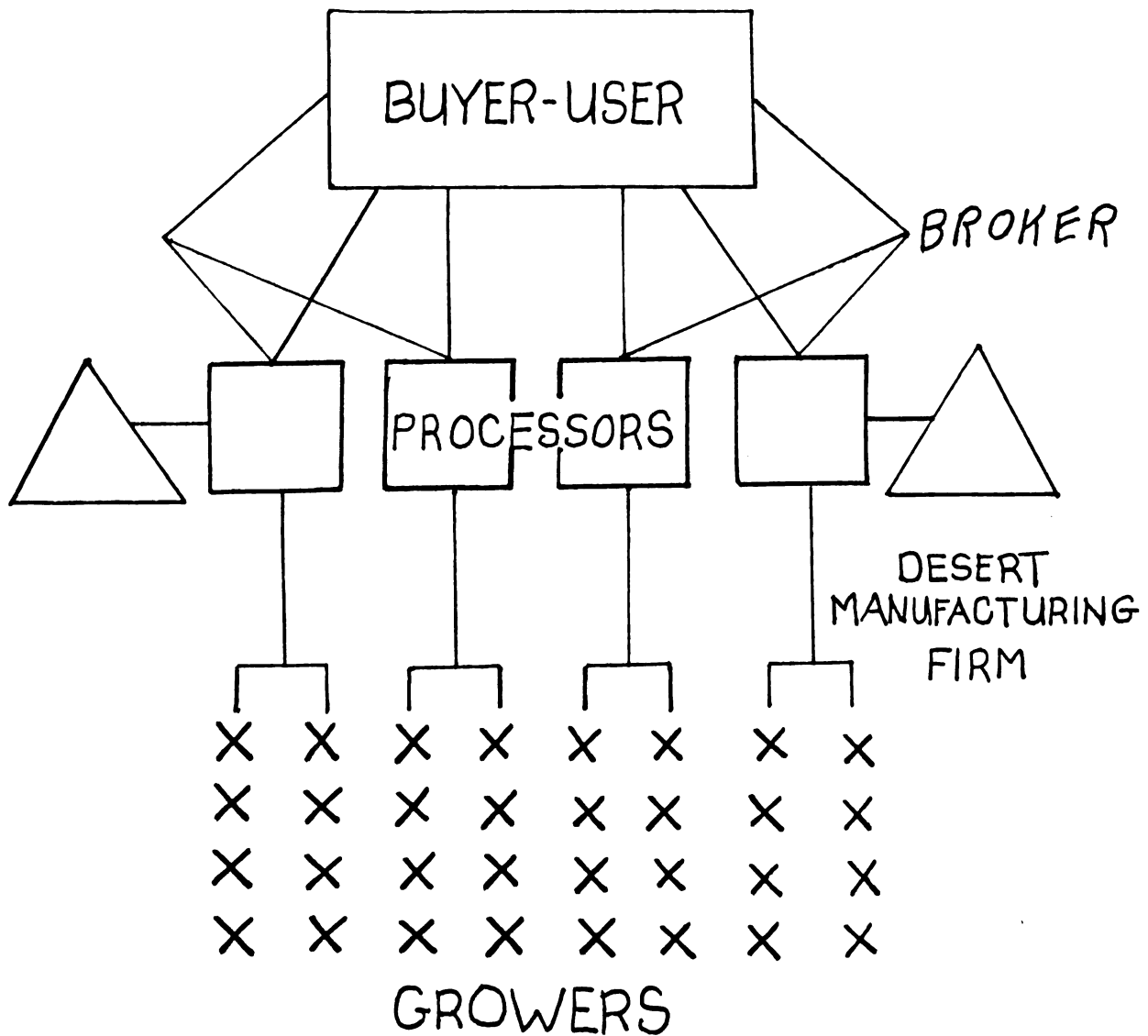


Figure 7

own dessert manufacturing firm (represented by the triangle). By producing the final consumer product themselves, cherry processors would have taken away some of the product and influence of the large buyer users. The diagram illustrates this by reducing the size of the buyer user relative to processors (see Figures 5 and 7 for a comparison of the processor buyer relationship under the current situation).

Successful forward vertical integration through ownership would be very difficult to achieve. Purchasing an established dessert manufacturing firm would involve enormous expenditures. Severe barriers of entry into the dessert manufacturing business make the development of a new company difficult. Product identification and diversification of product lines constitute the most serious entry barriers. Large dessert firms have spent enormous funds to develop and advertise brand names for their products. Consumer loyalty to these products would make independent entry arduous and costly at present. Considering the financial position of the tart cherry industry, processor acquisition of dessert manufacturing companies must at present be regarded as merely a potential alternative with little probability for success. Future expansion into dessert remanufacturing might become more feasible with future market restructuring such as joint selling or industry merger.

Forward vertical integration of processors through contracting provides a more feasible alternative than that alternative concerning processor ownership of dessert manufacturing facilities. Under this alternative, buyers seeking guaranteed product supplies and processors searching for secure market outlets could negotiate mutually beneficial contracts. These contracts would probably be for a period of several years. Processors would probably pack cherries for the buyer user on a cost plus basis.

Contractual forward integration could significantly improve the marketing position of tart cherry processors. Processing firms engaged in contractual arrangements would have guaranteed outlets for their product; a situation most firms would find advantageous. However, the remaining processors (those without contractual ties with user firms) would probably find themselves no better off than they were prior to the development of industry contracting. Stringent processor competition for sales to the buyers without contractual arrangements would probably have a depressing effect on the market price for frozen tart cherries.

The key advantages of forward vertical integration through contracting would be:

1. Processors under contract would have a guaranteed outlet for their product.

2. Buyers would have a protected source of supply.  
(This would be limited, however, by crop fluctuations, although the federal marketing order will reduce this problem somewhat.)
3. Better market coordination such as quality and type of pack could be achieved between contracted processors and buyer users.
4. Some degree of price stability would result (particularly for the firms under contract).
5. Organization would be relatively simple.

The disadvantages of contractual forward integration are:

1. It is doubtful if enough contractual agreements would be reached to significantly improve the marketing position of processors. 'Processors without contracts would probably keep market prices depressed. If non-contracted buyers were able to obtain their cherries at significantly lower prices than those with contracts, the buyers under contract will probably either discontinue contracting or reach a more favorable agreement (lower the price to the processor for his services) with processors. Under these conditions contracting would provide few benefits to the processor relative to the present situation.

2. This type of organization would not reduce processor input procurement costs for such items as cans and sugar.
3. Processors not under contract may experience difficulty selling their product. Low prices and returns might be forced upon them as a result of their situation.

Alternative 5: Processor Merger with Buyer Users.--

Processor merger with (or purchased by) buyer users provides processors with another marketing alternative. Under this arrangement processors would lose their independent identities when they merge with the national food firms. This change has occurred with some cherry processing firms. In view of this and the overall concentration and integration movements that have taken place within the food industry during the past few years, this alternative appears to have potential. However, the lack of profits in cherry processing provide little inducement for national firms to be interested in merging with or purchasing established cherry processors.

Figure 8 shows the structural changes that could develop as a result of widespread processor merger with national food companies. As the diagram shows the only remaining relationship would be that between the growers and the national food company. As part of the national food company processors would lose their independent

# PROCESSOR MERGER WITH NATIONAL FOOD FIRMS

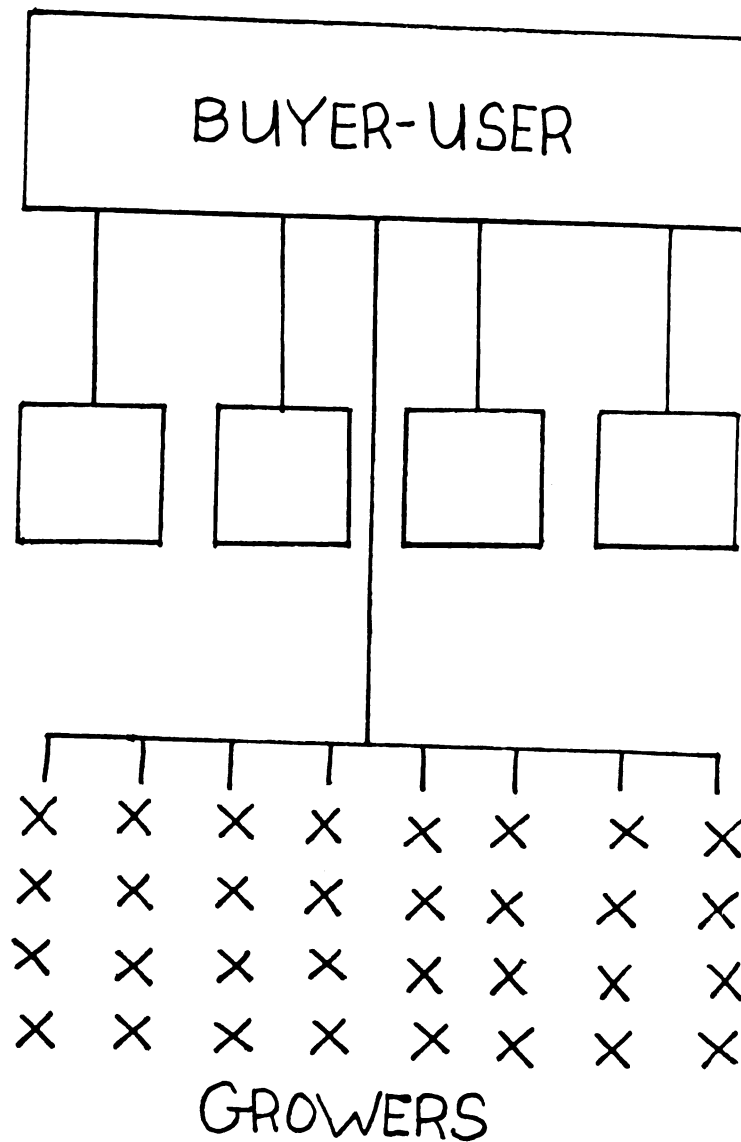


Figure 8

identity and take many of their orders from the national companies' board of directors.

The advantages of this alternative are:

1. Elements of price stability (particularly within season) could be established through extensive merger of buyers with processors. By drastically reducing the number of processed tart cherry sellers' past price depressing practices such as price undercutting, and buyers forcing processors into distress sales would be reduced. The key price stabilizing effect of this program would be the placement of inventory into the hands of the economically powerful national companies. The price cutting that so frequently occurs when weak processors possess this inventory could be substantially reduced if this alternative were carried out to a sufficient degree.
2. As a part of a national company, processors could expect a fair return for their services or the plant would eventually be closed.
3. Much of the price risk for both buyers and processors could be reduced. Buyers and processors could then concentrate on operational efficiency and demand expansion.



4. The growth and development of large concentrated firms could encourage product development and market expansion and hence industry growth. Large firms can afford to undertake research and market development activities. New product development and market expansion could thus be more effectively undertaken.

The disadvantages of this merger alternative are:

1. It is questionable if enough buyer user firms would be interested in merging with the presently unprofitable processors of tart cherries to create a significant impact. Many buyers would feel they have relatively little to gain by such a venture. Their current power position enables them to obtain cherries at relatively low prices. Many of these buyers with a competitive advantage over processors would probably prefer continuation of the present situation. Anticipation of many buyers and processors to reach mutually acceptable financial agreements under these conditions seem unlikely.
2. Merger of this sort would place growers in a most unfavorable competitive disadvantage because they would be forced to bargain with fewer and more powerful firms or develop their own processing facilities.

3. Many processors would resist complete loss of their independent identity and refuse to merge.

Alternative 6: Processor-Oriented Consolidated Sales.--A processor-oriented consolidated sales organization provides another alternative that processors could utilize to improve their marketing position. Under a consolidated sales program independently operating processors would concentrate their sales through a jointly owned central selling organization. Processor-oriented sales infers processor organizational initiation and control. In addition processors would own all or a major portion of the fruit committed to the organization.

A processor-oriented consolidated sales agency could be established through several organizational structures. For the purposes of this thesis only the two organizational types which appear most feasible will be analyzed. These are a sales corporation and a processor-oriented cooperative sales agency.

A sales corporation would give the processor stockholders complete ownership and control over the marketing organization. They would still own and operate their plants in a fairly autonomous manner.

The processor-oriented cooperative could be developed to utilize the farmer cooperative legal structure, while in fact actual grower participation in the development and operation of the organization would be

kept to a minimum. Under this structural alternative processors could possibly operate the organization and retain most of the control over all or a large portion of the finished product. Grower participation in the organization would only be utilized as a legal cover.

The strength of a consolidated sales organization is achieved through concentration. Centralized selling would enable processors to compete more favorably with large buyer users. In addition concentration provides opportunities to improve product quality control, enter into promotional activity, entertain market and product research, and provide additional customer services.

A processor marketing corporation would possess the following advantages:

1. If the organization is sufficiently large it would have greater control over the price received for frozen tart cherries than under the present conditions.
2. Such an organization could purchase inputs such as cans and sugar in large quantities and hence probably at lower prices.
3. Organization of this type would require little new capital investment.
4. Such an organization would not have to overcome a historically unfavorable image that cooperatives have among some processors.

5. Grower approval would not be necessary.
6. A large organization might improve quality control, promotion, and customer services.
7. Independent firm identities and plant operations would remain unchanged to a substantial degree.

The disadvantages of a marketing corporation are:

1. A significantly large organization comprised exclusively of processors would likely confront serious legal difficulty from anti-trust laws.
2. Large users of frozen cherries might retaliate by seeking out the services of non-participating firms and/or reducing the use of tart cherries in their product lines.
3. The "free rider" problem by providing benefits to non-participants could significantly weaken the organization strength.

A processor-oriented cooperative sales organization would provide the following advantages.

1. A processor-oriented cooperative would essentially provide the same advantages as the marketing corporation in regard to influence over product prices, advantages from large quantity purchases, greater ability to provide customer services, and relatively small investment in capital.

2. A cooperative might also have substantial exemption from anti-trust legal action depending upon the specific form and the degree of grower involvement.
3. Financial advantages through cooperative banking privileges would also be provided.
4. Growers and processors would be working together for their common benefit. Greater market coordination between the two parties could thus be achieved.

The disadvantages of this alternative are:

1. Overcoming the unfavorable image of cooperatives could pose an obstacle.
2. Adverse buyer reaction could encourage discrimination against the utilization of frozen cherries.
3. Organizing a sufficient number of growers and processors into an organization of this type might be difficult. Furthermore some processors may experience difficulty qualifying as grower-processors.
4. Growers might resist a processor-oriented cooperative in which they participate very little.

Grower-Oriented Marketing  
Alternatives

Alternative 7: Grower-Oriented Cooperative Structures.--Programs designed to improve the market for processed tart cherries may be initiated by growers as well as processors. Two types of grower-oriented cooperatives provide pertinent examples of possible grower organizations. Differentiation between the two grower programs is based upon ownership of cherry processing facilities. Both organizational forms would consolidate sales of frozen cherries. One type of grower-oriented alternative would essentially create a grower sales organization with grower ownership of the processing facilities and finished product. The second grower alternative is a grower bargaining sales cooperative operating at the finished product level. Under this program growers would cooperatively retain title to the finished product and contract with processors for the necessary processing services.

The first grower alternative attempts to obtain market power through vertical integration of growing, processing, and marketing of frozen tart cherries through a cooperative selling arrangement. This program requires strong grower leadership and the cooperation of processors who must be encouraged to sell their facilities. Substantial financial resources would be necessary to purchase existing facilities or construct new ones.

Growers would have difficulty obtaining the necessary resources.

Grower ownership of the finished product with contractual arrangements with processors to provide processing services appears to be a more realistic grower alternative than the former. It does not require the disappearance of numerous independent processing firms, and is more financially practical considering grower investment capital resources. Under this arrangement growers would maintain title to their cherries during the processing operation. Processors would merely pack the grower's cherries for a specified fee. Essentially this type of grower organization would establish a cooperative grower bargaining association selling processed tart cherries.

Both types of grower cooperatives just described would centralize sales of tart cherries (see Figure 9 for an illustration of the power relationships that would be developed). Strong organizations controlling nearly 100 percent of the total finished product would establish a powerful marketing force. Dealing with large buyers would be based upon a stronger market power position. Reducing price undercutting and the prevalence of distress selling on the part of weak sellers would create elements of price stability within the tart cherry industry. In addition more buyer services could be provided.

# GROWER or JOINT GROWER-PROCESSOR CO-OPERATIVE

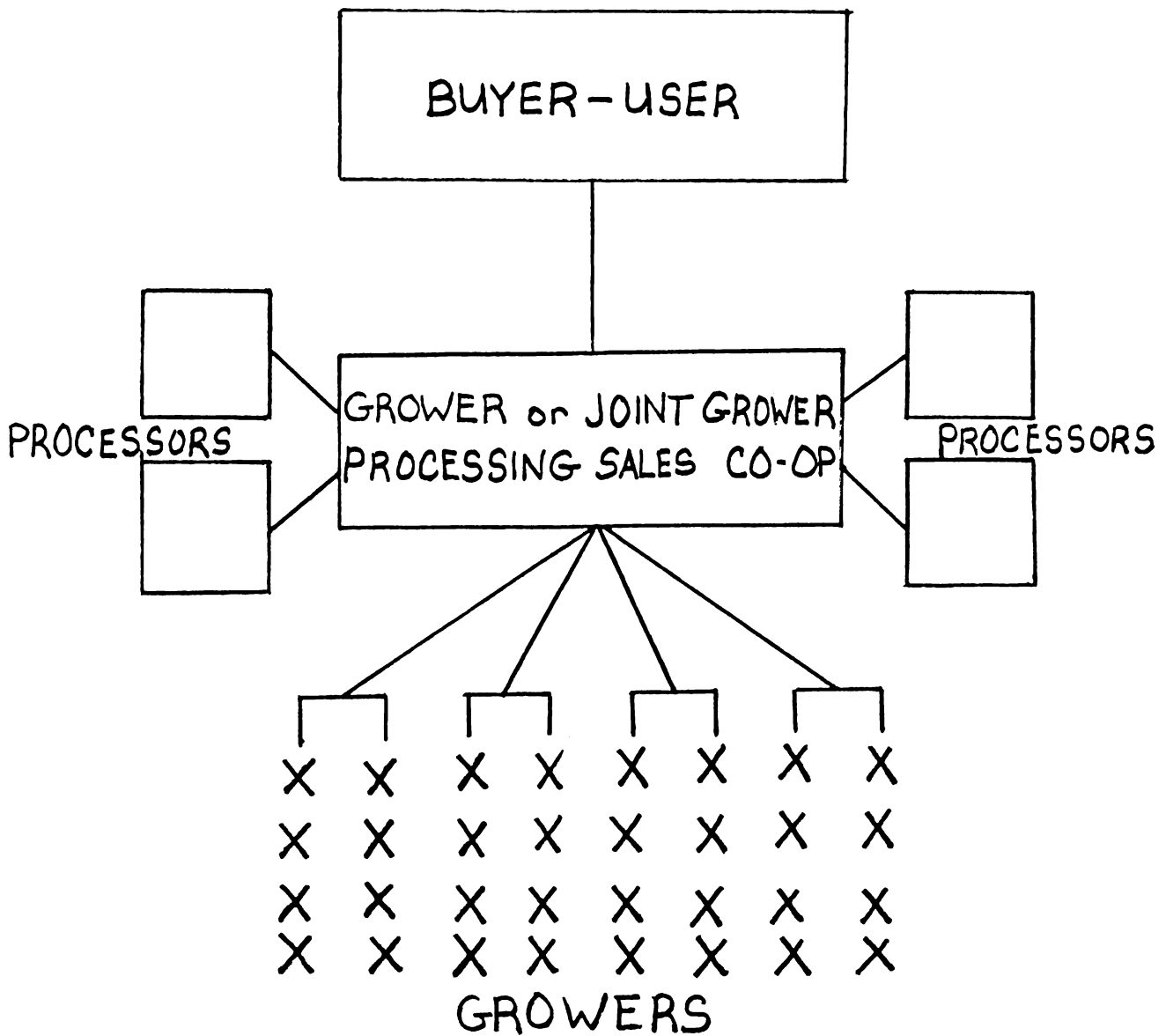


Figure 9



Following is a summarization of the advantages of a grower-oriented cooperative involving grower vertical integration.

1. Market concentration could significantly influence tart cherry prices.
2. A grower-oriented cooperative would claim substantial exemption from anti-trust legal action.
3. Large input procurement commitments could reduce purchase costs on such items as cans and sugar.
4. Improvements with respect to quality control standards and customer services might be achieved.
5. A cooperative organization may be able to tap special sources of financing such as through the bank for cooperatives.

The disadvantages of a grower-oriented cooperative would be:

1. Processors would be reluctant to give up their influence and sales roles to growers.
2. The unfavorable cooperative image among some cherry industry individuals possess an obstacle.
3. It might be difficult to get growers who presently sell for cash to agree to sell on a cooperative basis.

4. Large buyers might retaliate by reducing cherry utilization in their product lines.
5. The free rider problem among both growers and processors could be a serious obstacle. Benefits obtained by the organization would be received by outsiders.

Alternative 8: Joint Grower-Processor Alternatives.--Another potential marketing alternative possible through joint cooperation of growers and processors is the development of a joint grower-processor sales association (the market structure after initiation of this alternative would look something like that shown in Figure 9). Under this marketing program inventory would probably be under grower ownership. All membership cherries would be sold through this exclusive sales agency. The crucial support of processors under this alternative would be encouraged by allowing them to participate in the operation of marketing activities. The organization's board of directors would include both grower and processor representatives. Decisions involving marketing practices and policies of the organization would be developed by both parties involved. Cooperative profit-sharing arrangements could be established according to some predetermined formula. Processor participation could also be utilized to sell the product. Utilization

of the expertise and skill of a few of the key processor sellers within industry would be highly advantageous.

Processor participation in marketing activities and returns would reduce processor resistance to a cooperative with substantial grower influence. A potentially strong organization with processor profit incentive might be in a favorable position to overcome the poor image cooperatives have among many individuals within the industry (particularly processors).

This type of joint grower-processor venture would possess all the previously discussed advantages of a cooperative consolidated sales organization. A particularly strong feature of this alternative is its potential to stimulate a high degree of cooperation and coordination between growers and processors.

The complex and difficult task of developing this organization (particularly the task of organizing both growers and processors) would be the major disadvantage of this alternative. Buyer resistance could also cause problems.

Figure 10 illustrates another type of joint grower-processor marketing alternative (joint grower-processor confederated sales). Under this plan a grower cooperative would be established, and the member growers would retain title to the processed product until sales are made to buyers. Processors would continue to operate

# JOINT GROWER-PROCESSOR CONFEDERATED SALES

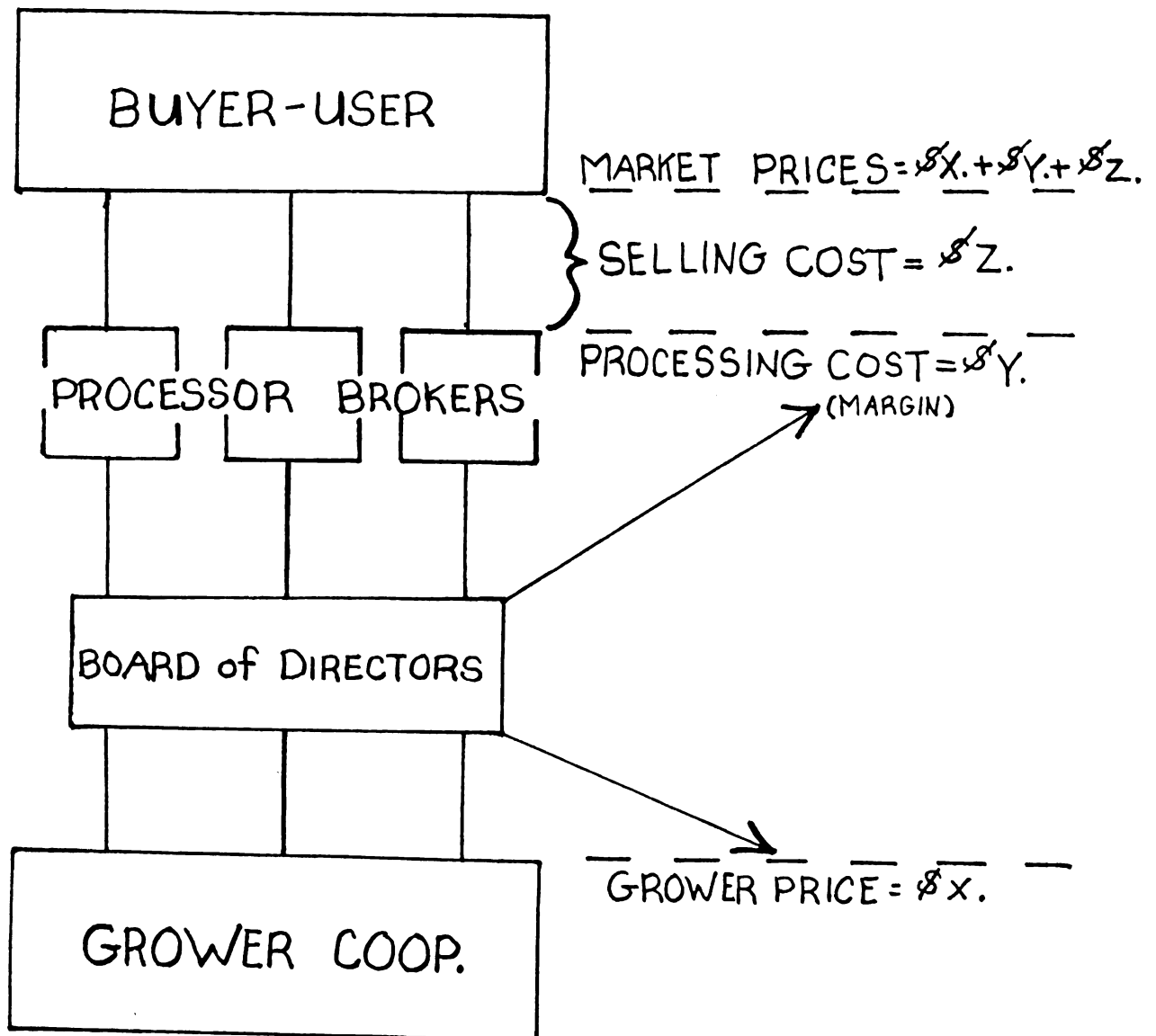


Figure 10

their plants as independent firms packing grower cherries for a margin. Determination of processing margins would be made by the organization's board of directors comprised of both grower and processor representatives (on diagram 10 the arrow running from the board of directors to the processing margin illustrates that the board sets the processing margin which is represented by \$Y on the diagram). The flow of product going to the various processing firms would also be determined by the board.

Under this alternative processors would act as brokers for the grower cooperative organization. The board would determine the processing margin (\$Y on Figure 10) and the grower price (\$X on Figure 10). Working from this base price (grower price \$X plus the processing margin \$Y) processors would then negotiate sales with buyers. The final market price would include the base price plus the selling cost incurred by the processor-broker (\$Z). Referring back to the diagram the total market cost would be  $\$X + \$Y + \$Z$ . Included in the selling cost would be a sales commission for the processor's marketing services. In short the processor's returns from the marketing organization would include the margin for his processing services and a commission on the sales he makes. All other returns would go back to the growers.

Essentially this organization would operate like a loose confederation of sales or a loosely organized central sales organization. A uniform base price (the grower minimum price plus the processing margin) would be established upon which processors could negotiate with buyers for higher prices. Substantial incentive would be provided to encourage processors to expand sales and keep prices at a fair level (a level sufficient to cover all production costs--growing, processing, selling, and a normal profit to all of these activities). Many of the weaknesses of the present selling structure would be eliminated. Grower control of the cherry inventory would alleviate the huge financial pressures that forced distress sales by individual processors who must sell inventory to repay loans. The depressing effect upon prices that buyers have been able to achieve by playing one processor against another would also be significantly reduced. With a fixed base price the only price reduction should involve selling costs.

The joint grower-processor confederated sales association would provide most of the market strengthening advantages connected with a cooperative consolidated sales organization. This particular program would be organizationally appealing to many processors because it would minimise processor loss of influence within the tart cherry industry in comparison with other comprehensive programs to create market strength.

Like the other cooperative organizations described this one would also be difficult to organize. Development and administration of a program similar to this could also present problems. Development of contractual arrangements and enforcement of these agreements could be very difficult. The loose selling arrangement under the confederated sales alternative could also create some problems. If processors working from a position of self-interest attempt to reap above normal profit from their brokerage service, they may be tempted to cut their prices by setting their selling costs artificially low. Hence by offering buyers cherries at lower prices than their competitors (because of their artificially low selling charge) they could sell a large volume of product. As long as brokerage fees from the movement of a large volume of product more than offset their losses from price cutting they will have profited from this action. A number of processors operating in the same manner could reduce cherry prices. Eventually processors may again find themselves unable to cover all of their costs (in this particular case selling costs would not be totally covered). If this problem were to develop fixing selling costs as well as the other costs could solve the problem. However, by doing this some of the sales incentive might be reduced.

The Most Advantageous Type of Restructuring  
to Improve the Marketing Situation for  
Processed Tart Cherries

Taking into consideration the marketing problems of the tart cherry industry and the preferences of individual processors, formation of a joint consolidated sales organization appears to provide the best available alternative to improve the marketing environment for sellers of processed tart cherries. The legal problems associated with market monopolization would require the establishment of a cooperative organization. The volume of cherries necessary to exert influence in the market is of such magnitude that any other organizational structure would probably be challenged by the anti-trust laws.

The only form of cooperative organization likely to enlist adequate processor support is one that calls for processor participation. The survey indicated reluctance on the part of processors to support programs threatening their independent identities and influence in the market. A successful cooperative organization will be most likely to attain processor support if it does not interfere with processor independent identity and includes provisions enabling processors to share in marketing activities and returns. Any other program might be hard pressed to gain sufficient processor support for success. The processor-oriented cooperative and joint grower-processor cooperative are



the cooperative organizations most likely to enlist the crucial support of processors. Because they provide maximum processor influence in the market relative to other potentially strong cooperative organizations.

Both types of organizations possess legal advantages in comparison to other programs involving collective action. The processor-oriented cooperative, as its title suggests, offers processors a great deal of control and influence in the market within a cooperative structure. However, including processors who do not grow cherries for organizational membership would probably encourage legal challenges. 'A joint grower processor organization provides substantially more legal protection than a processor-oriented cooperative.' An organization of this type could be initiated by growers to reduce the possibility of legal challenges. Marketing arrangements could be made with processors to make sales and share in the returns. A joint cooperative organization would also serve to strengthen the relationship between growers and processors.

#### Advantages of a Joint Consolidated Sales Organization

1. Stabilize prices at a fair level.--Market consolidation can address itself to the heart of the market power problem confronting processed tart cherry sellers. Collective action through the establishment of

a strong consolidated sales program for processed tart cherry sellers could effectively provide a more equitable balance of power between processors and buyer users of tart cherries. Greater price stability (particularly within the marketing season) could then be achieved. Direct sales to large buyers (avoiding the disruptive broker influence) would further improve this stabilization effect. The tendency of brokers to accentuate price fluctuations in large and short crop years (see Chapter II for a more detailed discussion) would thus be eliminated.

Countervailing power established through consolidation of sales would also enable processed cherry sellers to establish more stable prices for processed cherries on a year to year basis. The federal marketing order designed to control the vastly fluctuating yearly supplies of tart cherries provides an excellent foundation upon which to support a pricing program that attempts to create further price stability. A strong consolidated sales organization could help stabilize prices both seasonal and yearly by creating a power structure comparable to that now wielded by the large buyers and by eliminating the disruptive influence (accentuating prices in short crop year and depressing prices in large crop years) exerted by brokers. Elimination of weak sellers and the practice of buyers playing one processor against another would serve to greatly stabilize prices.

Creating price stability would be a healthy situation for the entire industry. Stable prices providing cherry growers and processors with a fair return would stimulate a more innovative and progressive industry. Steady prices to buyer users would encourage buyers to expand useage of cherries and add more cherry products to their lines rather than attempting to depress processed cherry prices. Buyers would benefit because they would have much less concern about paying more for processed cherries than their competitors than at present.

Price stability would reduce some of the processing risk associated with the historically widely fluctuating prices both seasonal and yearly. Substantial resources and managerial attention that has characteristically been devoted to risk calculation and strategy could, under a more stable pricing mechanism, be devoted to production activities. Managerial skills could therefore be released to develop greater technological and operational plant efficiency. This applies to buyer users as well as processors.

2. Provide Buyer Services.--Past experience has shown that independent cherry processors have not been able to provide buyers with the adequate services that they need. Providing buyers with a guaranteed supply of a specific quality product would be a most vital asset to buyers. The present buyer procurement methods are costly

and extremely cumbersome. Buyers frequently travel to the various processing firms checking the volume and quality of the pack. An organization instituting more uniform quality standards that could guarantee customer deliveries of what they need would reduce costs associated with these cumbersome procurement practices.

Providing other customer services such as technical assistance concerning proper product usage, assistance in new product development, and general information about the tart cherry industry will help create a favorable image among buyers. Dividends in the form of greater utilization of cherry products are likely to follow. A consolidated sales organization has a great deal of potential to provide many of these services.

3. Stimulate Innovative Activity and Market Development.--Innovative developments by processors concerning utilization of processed tart cherries has been very slow in the past. Independent processors simply do not have at their disposal sufficient economic resources to engage in substantial market research and development. Consequently product innovation and new market development initiated by processors has been retarded. Joint action could alleviate some of the financial constraints. Market coordination by spreading the cost among its participants could obtain the financial resources necessary to conduct innovational activities such as new product and market development if the economic opportunities looked favorable.

4. Expand Tart Cherry Demand.--A consolidated cherry sales association would be in a favorable position to enhance the demand for processed tart cherries through promotional activities. A combination of product services and stable prices along with strong promotional effort could stimulate the demand for tart cherries. A strong organization would be able to collect the resources necessary to provide costly national advertisement and sales gimmicks. A consolidated sales organization would be in a good position to work closely with the Red Cherry Institute.<sup>1</sup> A consolidated sales association would be in a most favorable promotional situation. The organization could follow its promotional activities with actual sales and customer services where the Red Cherry Institute cannot.

5. Input Procurement Cost Reduction.--Participating members of a consolidated marketing program might reduce their input procurement costs. Large centralized purchases of such common items as sugar, cans, office supplies, and machinery could result in significant savings. Collective purchase of a can-producing company or a stock controlling interest therein, may prove economically advantageous.

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<sup>1</sup>The institute currently is the main promotional organization within the industry. Although this organization has an important promotional function, it does not make any specific sales arrangements.

6. Provide More Efficient Product Distribution.--

Centralized selling could more efficiently coordinate the sales of tart cherry producers with respect to geographical location. Transportation costs could be reduced by coordinating sales and transportation to similar geographical locations. Scheduling of product movement could be more readily coordinated to take advantage of full load transportation rates.

7. Improve Total Market Coordination.--An

effective consolidated marketing system would benefit the consumer. Today's sophisticated consumer demands a steady volume of a high quality product delivered at a specific time. To the extent a consolidated marketing organization could improve upon these services the organization will have benefitted the consumer. Providing consumers with a steady supply of a high quality product at relatively constant prices would be of great value to the consumer. New product development would also benefit the consumer.

Disadvantages of Market Consolidation

1. Legal Problems.--Any marketing activity significantly influencing the total market structure for cherries will probably come under the close scrutiny of the Federal Trade Commission and the Anti-Trust Division of the Justice Department. Developers of a central selling organization would have to be very careful not to violate the law.

2. Adverse Buyer Reaction.--One of the most serious problems confronting a prospective consolidated sales organization concerns buyer-user resistance. Buyer reaction to central selling will depend largely upon the nature of the firm. Those firms which emphasize price stability and competitiveness along with sales of their finished products will probably not resist the development of market consolidation as long as prices are reasonable. On the other hand, those buyers who characteristically work the market to purchase cherries as cheaply as possible will probably react adversely to central selling of processors--at least initially. Buyers opposed to the organization could reduce their utilization of tart cherries by substituting other fruits or other products. Buyer refusal to promote cherry products may also decrease the demand for cherries.

It is questionable whether or not large buyer users could or would elect to decrease their utilization of cherries. The large pie manufacturers in particular would be very hard pressed to cut back on cherries since cherry pies (the largest use for cherries) ranks second in consumer pie popularity. Development of user services and an aggressive program to convince buyers of the benefits of consolidated sales would serve to temper most buyers' hostility.

### 3. Large Financial and Managerial Commitments.--

Organization and operation of a large consolidated sales association involves large financial commitments. Successful operation of the organization would require skilled management and sales personnel. Legal assistance might also be necessary. The larger the organization and the greater the number of services provided the higher these costs become.

### 4. The "Free Rider" Problem.--

Like most other agricultural organizations, a consolidated sales association of processed tart cherry sellers could confront the "free rider" problem. Preventing all the benefits of the organization from accruing to non-participants would be improbable. Price stability and increases received by the organization's participants may be obtained by outsiders as well, unless a brand name has been developed or the organization has developed a favorable buyer image. Developing product identification and buyer support takes time and money. While participating members are paying to stabilize industry prices at an acceptable level and developing an image to attract buyers, non-participating members may obtain the price benefits without any payment. Non-participants may even cut prices slightly to capture the organization's markets. Thus the sales organization would, in effect, be holding prices up for non-participants. While they are working to keep prices at a reasonable level the free riders are working to steal their potential



markets. Buyers attempting to break the organization may accentuate the effect of the free rider problem by siding with non-participants, seeking out their services.

The existence of the "Free Rider" problem frequently destroys consolidated sales organizations. Weaker organizational members often become disenchanted with the free riders and elect to break away from the organization and sit under the umbrella along with the other free riders. As membership dwindles the organization becomes weaker and weaker. Operating costs to provide benefits become more costly as the organization must operate with fewer payers and more free riders. Eventually the organization may fold entirely.

Only a strong organization composed of a close-knit membership can overcome this problem. Careful attention must be given to obtaining a sufficient percentage of the market supplies to minimize the effect of the free rider problem.

5. Unreasonable Price Increases.--Consolidated sales management must keep cherry prices in line with demand--particularly in regard to buyer substitution decisions regarding alternative products. Although modest price increases seem justifiable on the basis of the increased stability provided, additional services rendered, and perhaps increased promotion, unrealistic power plays establishing unreasonable prices will be

detrimental to the entire industry. Large price increases could be accompanied by fewer cherry sales and dwindling processor (and grower) incomes. Careful attention must be given to the levels of cherry prices at which different kinds of buyers will significantly shift to alternative fruits or other ingredients.

Feasibility of a Tart Cherry  
Consolidated Sales  
Organization

The many potential benefits obtainable through consolidated sales of tart cherry sellers previously examined would appear to make an organization of this sort economically feasible. Creation of greater industry stability would benefit the entire industry. Stable prices at a fair level for both growers and processors, along with input procurement cost reduction for processing supplies would probably justify the cost of establishing and operating the organization, if a strong enough organization could be developed. Price stability and provision of customer services would also be of economic advantage by encouraging demand expansion which would contribute to industry growth.

For a better understanding of the economic impact of a consolidated sales organization, consider a large central selling organization controlling 100,000,000 pounds of frozen cherries. If this hypothetical organization were to increase the price of cherries \$.01 per

pound above the level that would be established without organization, gross returns to processors would increase by \$1,000,000.00. A smaller price increase of \$.005 would result in revenue increases of about \$500,000.00. Of course these gross revenue increases do not tell the whole story. Some of these returns might be returned to the grower or be used to pay the operational expenses of the marketing organization. Higher prices could also mean loss of sales which of course would also deflate these revenue figures.

Large quantity procurement of such input items as cans and sugar could provide processors with substantial cost savings. If for example, quantity procurement of cans were to result in a cost reduction of \$.01 per can, a total cost saving of about \$33,333.00 would be realized. Reduction of sugar prices by \$.005 per pound could, in total, save processors approximately \$83,333.00.

Although the net impact of prospective input cost savings and revenue increases would be impossible to accurately determine at this time, the scale of these figures suggests organization has significant economic potential.

The economic potential combined with the close geographical proximity of processors (65% to 70% of all cherries packed in the United States are concentrated in the western coastal area of Michigan's lower peninsula)

makes organization of central selling appear feasible.  
The entire industry could benefit from its development.

## CHAPTER VI

### SUMMARY AND CONCLUSION

The current marketing structure for processed tart cherries has not provided an efficient marketing mechanism. There is much instability and risk in the system. In addition returns to cherry processors and growers are quite low relative to other economic sectors.

The marketing structure in which small fragmented processed cherry sellers are matched against powerful buyer-user firms has encouraged a high degree of price cutting. This leads to severe price instability and a generally unhealthy tart cherry industry. In addition to pricing problems the small fragmented independent processors are not able to provide large buyer users with sufficient services.

The competitive imbalance between the large buying firms and tart cherry processors has created a depressed marketing situation for processed tart cherries. In addition to the number and relative market strength of these processor sellers, their financial resources and cash-flow practices frequently lead to market weakness.

Processors buying cherries from growers for cash at harvest time frequently encounter liquidity problems. This heavy inventory investment by processors is usually financed by short-term bank loans and places them in a very uneasy position if processed cherry sales lag. Financial pressure to avoid starting the next processing season with unsold inventory is overwhelming.

Buyers are very much aware of these financial pressures. Their competitively favorable position is enhanced by their ability to wait on purchases more easily than processor sellers can wait for sales. Thus buyers can wait until the weaker or more nervous processors are forced to sell--often at prices that are below those warranted by supply and demand relationships. The buying practices of large buyer users who often play one processor against another in an effort to lower prices and the tendency of brokers' actions to aid the larger buyers are significant market depressing factors (particularly in large or normal crop years).

The widespread price instability (both within a season and from year to year) which are characteristic of past marketing practices has discouraged growth and development of a healthy tart cherry industry. Growers, processors, and buyers are all adversely affected by these price fluctuations. Grower and processor innovational activities involving modernization, operational

efficiencies, and product development are hampered because of the market uncertainty. They operate in constant fear of a severely depressed market. Buyers are affected by price instability in a different manner. Development of markets for cherries is severely restricted because of the widely fluctuating prices (both seasonal and yearly). Consequently industry market growth suffers. There is strong evidence that the behavior of brokers serves to accentuate yearly price fluctuations. The brokers desire to become a part of the deal forces him to operate in favor of the buyer during large and normal size crop seasons (severely depressing prices), and to favor the processors when supplies are very short (forcing prices upward substantially).

Fragmented independent processors have not in the past adequately fulfilled the needs of large buyer users. Better grading and a lack of uniform high quality have persistently been an industry problem. Small independent processing firms experience difficulty supplying buyers with a large volume of the type and quality of pack they desire. Buyers also desire such services as: (1) technical customer assistance with tart cherry utilization, (2) promotional assistance, and (3) frequent circulation of information concerning the present industry situation with respect to such things as crop size, carry-over stocks, product quality, product price, and demand expectations.

Inadequate buyers' services combined with widely fluctuating prices for tart cherries has led to wasteful marketing practices. Buyer users attempting to obtain a large volume of designated quality of product at a competitive price discover they must comb the entire state of Michigan or the Great Lakes cherry industry for their needed supplies. Large sums of money and a great deal of time is wasted searching the various processing firms for the desired volume and quality of product at the lowest possible price. Primarily in response to price instability processors also waste much time and effort strategizing marketing activities involving substantial risk.

The current marketing and economic situation for processors looks even more bleak if future developments are taken into account. The anticipated growth of on-farm processing and passage of a comprehensive grower cooperative marketing bill (such as the Sisk Bill) could significantly weaken the profit position of tart cherry processors. Without any other marketing structural changes for processed tart cherries, growth of on-farm processing and passage of proposed farmer bargaining legislation would probably magnify price instability, further depress processor profits, and create further stagnation of industry growth and development.

Analysis of the economics of on-farm processing (Chapter IV) leads to the conclusion that this new



processing system is likely to be profitable and suggests that future growth of this system is highly probable. If no traditional processors exit from the industry this would mean a larger number of weak sellers competing for processed tart cherry markets. On-farm processors offering a small volume of a single commodity would be in a particularly weak market position. Depressed market prices would result.

Passage of proposed farmer bargaining legislation would likely strengthen the efforts of grower bargaining effort for higher raw product prices. This legislation would be very appealing to cherry growers desiring to bargain at the raw product level. Utilization of the exclusive bargaining agent provision in the legislation could establish a very strong grower bargaining group which processors would be forced to recognize and bargain with in good faith. Failure to make any marked structural adjustments would place the processor in a very unfavorable competitive position. A strong grower organization would demand high prices for their raw products while buyers would force processors to sell their product at low prices. Hence processor profits would be squeezed from both ends of the market.

Considering the severity of the present marketing problems confronting cherry processors and the bleak outlook for the future, there appears to be a strong

need for some structural marketing changes. If independent cherry processors fail to adopt a more coordinative marketing program, many will go out of business or become incorporated with either growers, buyers, or other processors. Independent processors who wish to continue processing tart cherries and make a profit doing so may discover that it will be necessary to organize with other processors and to coordinate and strengthen their marketing position.

A number of alternative approaches to restructuring to strengthen processed tart cherry sales were explored and analyzed in this study. The advantages and disadvantages of each of these alternatives were analyzed both regarding potential economic gains and industry acceptance.

Realistic marketing alternatives for processors of tart cherries must take into consideration the financial position of many independent processors, their desire to remain independent producers, and their reluctance to surrender their marketing influence within the industry. Hence alternatives requiring large financial commitments, processor loss of identity or industry influence would be unlikely to receive sufficient processor support. Considering these restrictions, successful horizontal merger among processors or vertical

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processor integration into the dessert manufacturing industry through ownership do not seem to provide superior marketing alternatives. Likewise grower-oriented programs that do not contain significant provisions for processor participation and involvement in marketing activities probably would be difficult to successfully organize.

A consolidated marketing program that does not threaten independent processor identity or significantly reduce their influence within the market, provides the most feasible marketing alternative in regard to processor acceptance. Consolidated sales by placing the ownership or sales control of the processed product into fewer hands would strengthen the pricing mechanism. A strong organization could stabilize prices. Thus buyers would have less opportunity to depress the market by waiting until the weaker sellers are forced to put their product on the market at relatively low prices. Buyer power plays pitting one processor against another to depress market prices would also be curtailed. The basic affect of consolidated sales would be to create seller strength in the market for processed tart cherries. By accomplishing this processors would have addressed their attention to a key part of their problems. In addition to its market strengthening influence, consolidated sales would enable processors to provide buyers many services that individually they cannot.

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Recent passage of the federal marketing order (developed to stabilize supply fluctuations from one season to the next) in combination with a consolidated sales organization could create much greater tart cherry price stability. Fair and reasonable prices for both growers and processors and stable prices to buyers would encourage the growth and development of a healthy cherry industry. Innovation and market development (based upon steady prices) would be greatly encouraged.

A joint grower-processor cooperative appears to be the most suitable organizational structure to accomplish economic gains such as through greater market strength for processed tart cherries sellers and to meet widespread industry acceptance. A joint grower cooperative would provide substantial legal protection from anti-trust legal action and encourage a cooperative working relationship between growers and processors. Consolidation of cherry sales within this legal structure could create a powerful bargaining force. Concentration would also permit development of customer services and market development efforts. Development of a market coordination program including processors would be dangerous without the participation of growers for two reasons:

1. Legal development of a consolidated sales organization of the magnitude needed for tart

cherries would be nearly impossible without the special anti-trust legislation afforded grower cooperatives.

2. Looking into the future, if proposed farmer bargaining legislation is passed, processors will be forced to deal with a monopolistic grower organization. Development of a program including growers would reduce tension at a later date at the raw product level. Another possibility is that should processors elect to bypass growers in their restructuring organizational plans, growers may elect to develop their own processing facilities leaving traditional processors without a source of raw product.

A joint grower-processor organization in which there is substantial processor participation in development and operation would be necessary to enlist the support of processors. In other words, although such an organization could be organized under the laws governing grower cooperatives, processors or their elected representatives could participate in the operation of the organization (either as board members helping to make pricing and operational decisions or as brokers selling the furnished product for a commission on the sales or in both roles). A successful cooperative organization will probably need to utilize the sales expertise of

strong processor sellers. This will be necessary because: (1) strong processor sellers will be reluctant to join an organization requiring them to surrender their marketing skills, and (2) employment by the organization of the superior salesmen would be an asset to the operation.

Although processors of tart cherries are interested in establishing a consolidated sales organization, a key to its development lies with the growers. Since an important legal avenue of this type of consolidative organization is through a cooperative, grower organization appears essential. Any strong cooperative sales organization would require substantial participation of grower tonnage. Organization of enough growers would not be easy. Some growers are satisfied with the present situation in which they are paid cash for their product. Many growers, although not satisfied with the present situation, have very little faith in cooperative organizations primarily because of the destructive "free rider" problem and some unfavorable past experiences.

Realistic hopes for the establishment of a comprehensive coordinative marketing organization for processed tart cherries may be strongly influenced by the fate of the present proposed former bargaining legislation. This legislation with its exclusive bargaining agent provision could provide the stimulus necessary to

organize growers. Development of a joint grower-processor cooperative under these monopolistic conditions would create enormous market strength and encourage the necessary improved market coordination.

The current marketing situation for processed tart cherries involves a number of problems. The weaknesses involved in selling processed cherries has serious undesirable economic impact on both processors and cherry growers. The analysis of the economics of on-farm processing indicates that the trend toward this type of processing system will continue. The increased number of small sellers of processed cherries will add to the problems of tart cherry marketing by further weakening the sales position of frozen processed cherries. As a result of these factors, analysis of this study thoroughly indicates a need for some major marketing restructuring changes. A number of alternative approaches to this restructuring were explored and analyzed. Based upon this analysis, it appears that the alternative of consolidated sales through a joint grower-processor cooperative provides the greatest potential for accomplishment of improvement objectives both from the point of view of potential economic gains and industry acceptance.

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## APPENDIX

### SURVEY QUESTIONNAIRE

## APPENDIX

### SURVEY QUESTIONNAIRE

1. In your opinion are there problems concerning the manner in which the red tart cherry industry is currently marketing processed cherries?
2. Would a form of central selling improve the marketing situation?
3. What types of cherry pack should a central selling organization include? (frozen, cans, or both)
4. What kinds of firms do you think would be interested in a joint sales arrangement?
5. What structural form do you think a central sales organization should take? (i.e., a selling corp. or a coop., etc.)
6. What benefits would you expect to gain by joining a central sales organization?
7. What kinds of firms or people should be encouraged to participate?
8. What volume of the cherry pack do you think a central sales organization would need to control in order to make an improvement over the present situation?
9. How large must the organization become before you would be willing to participate?
10. What percentage of your pack would you be willing to sell through a consolidated sales agency?
11. What types of your pack would you be willing to sell through a central sales organization?

12. Do you think that there are enough processed cherry sellers willing to participate in a central sales organization to make such a venture successful?
13. Do you foresee some form of central selling emerging in the near future?
14. Who should organize a central sales organization?
15. What functions do you feel a central sales agency should pursue?
  - (a) promotional
  - (b) product development
  - (c) quality control
  - (d) research and technical assistance to producers and/or users of red tart cherries
  - (e) other
16. Do you have any ideas concerning the general marketing approach a central sales organization should pursue to become most effective? (i.e., pricing strength, customer service, top quality, etc.)
17. How much power or authority would you be willing to delegate to a central sales organization?
18. How much power (control over members) must a central sales organization possess in order for it to be successful?
19. Do you think buyers of processed red tart cherries would react favorably or adversely to a central sales organization? Why?
20. Do you think the trend toward on-farm processing of red tart cherries will increase or decrease in the near future? Why?
21. Does on the farm processing produce a higher quality product?
22. What do you think are the advantages of on-farm processing?
23. What do you think are the disadvantages of on-farm processing?
24. Would central selling increase the on-farm processing trend?

25. What particular pollution problems is your firm currently facing?
- (a) If no problems now exist, do you foresee any future problems?
  - (b) If current problems exist, what steps are you taking to correct them?
26. Do you think that large costs necessary to meet pollution control standards will force some of the current processors out of business?
- (a) If so, do you have any idea how many?
27. Are on-farm processors better able to handle the pollution problem?
- (a) If so, do you think this will be a factor increasing the trend toward on-farm processing?

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