MASS MEDIA EXPOSURE AND THE ADOPTION OF FARM PRACTICES: A STUDY OF PUERTO RICAN TOBACCO FARMERS

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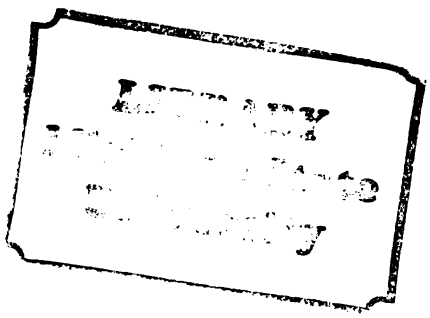

ABSTRACT

MASS MEDIA EXPOSURE AND THE ADOPTION OF FARM PRACTICES: A STUDY OF PUERTO RICAN TOBACCO FARMERS

by Rodrigo H. Rodríguez-Casañas

This study has to do with mass media habits of the tobacco farm population of the Agricultural Production Area of the Naranjito Trading Area. It was intended to determine specifically the relation between frequency of exposure to mass media channels and level of adoption of these farmers. That is, the research was designed to investigate:

(a) the relation between mass media exposure and the awareness stage of the adoption process

(b) the relation between mass media exposure and the interest stage of the adoption process

(c) the relation between mass media exposure and the adoption of farm practices

It was predicted that there is a positive correlation between the information the tobacco farmer get from the mass media and his application of modern farm practices.

The following three farm practices were selected to determine the relationship between the concept of adoption and the communication channel orientations of the tobacco farmer:

1. Use of hillside or contour ditches
2. Use of parathion insecticide on the tobacco plantations
3. Use of limestone on the soil of tobacco plantations

The degree of exposure during a given time period was obtained for the following channels:

1. radio
2. television
3. press

Media exposure was measured in two ways:

a) exposure to a particular channel

b) overall exposure to all channels

Eighty tobacco growers were interviewed by the researcher and other Extension personnel. Since the group was small it was possible to study the universe, thus eliminating any sampling error.

The personal interview and the questionnaire were chosen as methods to obtain the information desired. To analyze the relationship between mass media exposure and the awareness and interest stages in new ideas, simple correlation analysis (contingency coefficient) was used as the analytical tool. The same tool was also used to determine the relationship between channel orientation, socioeconomic traits, and adoption of farm practices. Other analyses used were frequencies and percentages, particularly to present over all adoption information and data about favorite radio stations, daytime periods most favorable for radio tuning and amount of time devoted to daily radio listening.

It was found that these farmers are well exposed to radio. It seems they rely heavily on this medium for information and entertainment. Apparently radio is the main source of information other than interpersonal relationships for most farmers.

The press does not reach many of these tobacco growers. The data suggest that the low schooling of tobacco farmers reduces their exposure to press information.

Tobacco growers appear to be considerably exposed to television.

The data show an important level of exposure to agricultural information presented via television.

A positive relationship between exposure to agents of change and adoption of all three farm practices was found. It seems that agents of change take part in the decision making process of these tobacco producers.

A positive but low relationship was found between exposure to radio, press and television, and adoption. Information published via mass media channels may predispose farmers to change their behavior in terms of adoption of new practices.

The study showed that age and scale of operations have a strong influence on tobacco farmers and adoption of innovations. Older farmers and those operators with the largest scale of operations were the highest adopters. Schooling did not show a high relationship to media exposure and adoption. The data showed also the extraordinary role played by mass media channels as sources of farm information during the awareness and interest stages of the diffusion process.

MASS MEDIA EXPOSURE AND THE ADOPTION OF FARM PRACTICES:

A Study of Puerto Rican Tobacco Farmers

by

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CHAPTER I

INTRODUCTION

THE AGRICULTURAL EXTENSION SERVICE IN A CHANGING SCENE

Press, radio and television are available to personnel of the Puerto Rico Agricultural Extension Service for simultaneously reaching a large clientele with relative little effort and cost. In the Island there are forty radio stations - 37 of them AM and 3 FM - with a potential coverage of over 500,000 homes. There are three Spanish language newspapers and one English language newspaper. Their daily circulation Monday through Friday is as follows: El Mundo, 69,925; El Imparcial, 53,062; El Día, 28,000; and The San Juan Star, 25,641.

Of the ten Spanish language television stations, eight are commercial stations operating on a network basis, and two operated by the Department of Education of Puerto Rico. These media are widely used by the Extension Service personnel to reach farmers, as detailed later on in this chapter.

To realize the importance and usefulness of these media to Extension personnel, it is necessary to understand the situation of the Agricultural Extension Service today as compared to that of 1934 when this educational institution was created in Puerto Rico.

Otis Oliver Padilla says:

> In 1934 when the service was created, its personnel worked with a defined, rural audience. Seventy-one per cent of the population was located in rural areas and depended on agriculture for a livelihood. Personal relations in the form of visits, meetings, and demonstrations were the common methods used by Extension agents for reaching their clientele. The lack of urbanization, a high rate of illiteracy and poor mass

> communication, and their range of influence was limited to the areas where they have physical access.[1]

In 1966, 32 years later, the situation had changed substantially. The Extension clientele is no more rural and static. Many of the rural inhabitants have been moving to cities to look for better paying jobs provided by the manufacturing industry, which is growing dramatically as the result of the industrial development program started by the government approximately 20 years ago. So the population, mostly rural in 1934, is now 50 per cent rural and 50 per cent urban.

Farm business itself is changing very fast in the Island. There is a trend toward larger farms through the consolidation of smaller ones -- with a high degree of specialization. New farmers are settling in the dairy industry business, many sugar cane producers are shifting to beef cattle and dairy business which flourish rapidly in Puerto Rico. In other words, there is a changing scene in the agriculture industry of the Island with a very dynamic population taking part in it.

On the other hand, there is an everyday growing urban population that looks to Extension for advice and information in such fields as home gardening, market information, youth orientation, home management, and other areas not so important as in the early days of the Puerto Rico Agricultural Extension Service.

Today, in contrast to 1934, the county agents count on adequate mass communication facilities to carry their message to the potential audiences. This is particularly true in the case of the Radio and TV media which continues to grow in number of stations and audience while the number of newspapers (Spanish language papers) has remained constant.

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[1]Otis Oliver Padilla, The Role of Television in the Diffusion of Extension Information, Thesis for the degree of M.A. Michigan State University, page 92.

The social and economic development taking place in the Island has brought new challenges to the scope and methods of work of the Extension Service. For instance, in order to reinforce classical teaching methods, Extension personnel are intensifying their use of mass media channels.

Mass Media Channels in the Diffusion of Extension Information

Commercial and educational Radio and TV, and the three dailies are receptive to the Extension personnel, especially to the communication specialists working on the state level. All these channels are outlets for farm information provided it is well written and produced and does not violate the standards of the commercial mass media.

Nevertheless, it is not enough for the Extension personnel to know the style and production techniques of mass media. They must know the mass media habits of their clientele. For example, the target audience predisposed to any one of these media channels in that particular area. How do media habits relate to Extension Service educational objectives?

The Problem

The Purposes of the Study

Accordingly, this study has to do with mass media habits of the tobacco farm population of the Agricultural Production Area of the Naranjito Trading Area. It was intended to determine specifically the relation between frequency of exposure to mass media channels and level of adoption of these farmers.

That is, the research was designed to investigate:

(a) the relation between mass media exposure and the awareness stage of the adoption process

(b) the relation between mass media exposure and the interest stage of the adoption process

(c) the relation between mass media exposure and the adoption of farm practices

It was predicted that there is a positive correlation between the information our tobacco farmer gets from the mass media and his application of modern farm practices.

This study considered the following questions:

1) Do these farmers listen to radio and tv?

2) Do they read newspapers?

3) What are their program references?

4) Is there a tendency to follow a regular mass media exposure pattern throughout the week?

5) Is there any relation between mass media habits and adoption of modern agricultural practices?

Description of the Area

The Agricultural Production Area within the Naranjito Trading Area comprises sections of six wards belonging to the following counties: Naranjito, Corozal, Barranquitas and Comerío. This Area is served by an Agricultural Extension Service office located at Cedro Arriba ward of Naranjito county.[2]

The Area lies over 2,000 feet above sea level (25 miles from San Juan, the capital city). It has average temperature of 72° F. and a mean annual rainfall of around 77 inches, well distributed during

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[2] Estudio de la Situación Agrícola en el Area de Desarrollo Rural de Naranjito, (Servicio de Extensión Agrícola, Universidad de Puerto Rico, 1963), pp. 3, 4, 5.

the year. The prevalent soil types in the region are the Catalina clay, Cialitos clay, and Mucara clay loams. These, if properly worked and with an adequate amount of limestone, are very productive.

Farm Description

There are 308 farms operated by 285 farmers in the Agricultural Area of the Naranjito Trading Area. They cover 8,024.99 acres of land. The average farm size is 26.06 acres. Ninety-two of 29.8 per cent of the farms are devoted mainly to tobacco. From the standpoint of agricultural value this crop ranks second in position among all crops cultivated in the region. The crop value was $127,659.38 for the 1963 season production. This amount represents 27.9 per cent of the overall agricultural production value of the Area. The total acreage devoted to this crop - 233.50 cuerdas (.97 of an acre) - yielded 3,569.65 tobacco hundredweights. The yield per acre was 15.28 hundredweights.

Land Tenancy

The great majority of these farms are operated by their owners. Only twenty-three of these farms, or 7.5 per cent, are worked under other tenancy types. Three-fourth of the farmers live on their farms. Only 76 of them live elsewhere.

Schooling

The formal schooling of the farmers living in the Area is very low. The average schooling is 3.2 years ofelementary school. Eighty-three farms operators (29 per cent) have never been in school. One hundred thirty-four (47 per cent) have completed from one to fours years of elementary school. These two groups of low or no schooling at all represent 76 per cent of the farmers of the Agricultural Production Area

of the Naranjito Trading Area. Forty-eight farmers (16.8 per cent) have completed from five to eight years of schooling.

Age

The average age of the farmers is 54.2 years. There are seven farm operators under 30 years of age and 37 of them are 30 to 39 years old. These groups of young farmers include only about 15 per cent of the total.

Agricultural Production Organization

The farmers of this Area derive three-fourths of their income from agriculture. They produce a wide variety of crops such as tanniers, yams, sweet potatoes, tobacco, banana, plantains, and other vegetable crops. However, in order of economic importance, plantains, tobacco, and tanniers are the three most profitable crops. These constitute 80 per cent of the agricultural income of the farmers.

The above description indicates some of the social and economic characteristics of the farmer in the Area under study. The extraordinary similarity of these farm operators as far as their educational and economic level, age, type of farming, and the size of their farm operation is quite clear. They are a compact group of small farmers dependings on a family farm for their living. Because of their geographic location, they are easily reached by mass media, especially radio and television. In addition, they have been exposed for a long time to the influence of the Agricultural Extension Service regarding the adoption of certain farm practices.

The Choice of a Tobacco Farm Population

This study is limited to tobacco because:

First, the social and economic traits of the tobacco growers are very similar to those of the rest of the farming population of the Agricultural Production Area, the 216 farm operators dealing mainly with the production of plantains, yams, tanniers, vegetables, and other starchy crops. Therefore, generalizations might be tentatively applied to the overall farming population of the Area, supported by the research findings obtained with the tobacco producers.

Second, the tobacco farmer population of this Area is part of a large nucleus of Puerto Rican tobacco farmers. The Island has more than 12,000 tobacco growers. As a matter of fact the tobacco crop represents the third largest agricultural industry in Puerto Rico. Some generalizations can be applied to the Puerto Rican tobacco farm population based on the results of this study.

Although much broader, there is a study similar to this research done with the dairy farmers of Puerto Rico. It is the Ph.D. thesis written by Dr. Otis Oliver Padilla, at Michigan State University in 1964 titled, The Role of Values and Channel Orientations in the Diffusion and Adoption of New Ideas and Practices: A Puerto Rican Dairy Farmer's Study. The results of both studies can be compared to determine similarities and differences between the dairy and the tobacco farmers of Puerto Rico as far as exposure to mass media channels and adoption of farm practices is concerned.

Finally, the Puerto Rico Agricultural Extension Service has devoted significant efforts to the teaching of new farm practices to tobacco farmers so they can raise yields. It is expected that any achievement of

this kind tend to improve their standard of living. As part of this educational program a tobacco specialist and 23 county agents are sharing the responsibility for reaching the Puerto Rican tobacco farmers with new and useful farm practices and methods. It is hoped this research will help determine the role of the mass media channels, press, radio, and television, in the diffusion and adoption of new practices.

It is also intended to investigate the role of the county agent and other government agents of change in the diffusion and adoption processes. It should be mentioned that the Puerto Rico Agricultural Extension Service operates a well-organized Educational Aids and Information Division to support its teaching program with the use of mass media and audiovisual aids.

These factors encouraged the researcher to study the tobacco farm population of the Agricultural Production Area of the Naranjito Trading Area.

Practicability of the Study

This research was aimed at gathering more information about the tobacco farmer of the Naranjito Trading Area. It was expected that the results and recommendations will furnish the Extension personnel with extra knowledge necessary to reach these farmers more effectively.

If the county agent knows more about farmers' media habits and other characteristics he will be better able to reach them with new ideas and farm practices. The Educational Aids and Information Division of the Extension Service will be able to intensively use those channels this research has indicated are more accessible to these farmers. Mass media specialists of the Extension Service may become more efficient in the

work of reinforcing the county agent's daily efforts to change the attitudes and work methods of the farmers.

The map on the next page shows the demarcations of the wards and the location of the Extension office in the Naranjito Trading Area.

AGRICULTURAL EXTENSION SERVICE
OF THE UNIVERSITY OF PUERTO RICO

NARANJITO TRADING AREA

Legend:

Naranjito Trading Area

Agricultural Production Area

Wholesale Agricultural Market

Agricultural Extension office of the Area

Township

CHAPTER II

DIFFUSION RESEARCH IN AGRICULTURE

This chapter presents some literature related to the diffusion of farm innovations. The diffusion theory, as stated by American investigators, is the primary focus. The categories of farmer innovativeness are also explained here. The results of some farm innovation studies are cited as done in United States, Australia, Netherlands, and Latin American countries.

The Extension Service as an Agency of Change

As an agency of change the main objective of the Puerto Rico Agricultural Extension Service is to disseminate information about new farm practices and methods of work. It is hoped that these new technological discoveries will help the farmers to produce more crops, better livestock and consequently raise their standard of living. Therefore, the Extension worker, as an agent of change, faces the problem of what channels utilize to effectively communicate these messages to his potential audience. There is no doubt that some knowledge about the diffusion process can help him a great deal. Agricultural diffusion research has worked for 20 years to provide change agents the tools necessary to implement their programs, as Oliver brings to our attention.[1]

But, how does the diffusion model work out? How does it assist the agent of change in his daily work of spreading new ideas and farm practices?

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[1]Otis Oliver-Padilla, The Role of Values and Channel Orientations in the Diffusion and Adoption of New Ideas and Practices, Thesis for the degree of Ph. D., Michigan State University, p. 16.

The Diffusion Theory

American researchers such as Lionberger and others support a postulated five-stage diffusion process.[2] For the Extension worker each one of them is very important. First, because they help him realize how a farmer adopts a new idea. Second, the stages tell us the position or role of mass media as far as the whole diffusion process is concerned.

These are the five stages of the adoption process:

Awareness -- the farmer gets first knowledge about a new idea, product or practice;

Interest -- he actively seeks extensive and detailed information about the idea ....

Evaluation -- he estimates its worth to him

Trial -- he decides to try the practice on a small scale

Adoption -- he accepts and puts the practice to work in his farm business.

Information Source's Role in the Adoption Process

The important point here is: into which of these stages do mass media fit best. It has been found that media like newspapers, magazines, radio and television are more useful as sources of information in the awareness stage. At the interest stage, mass media, again, and other farmers, rate high as information sources but for somewhat different reasons than at the awareness stage. Nevertheless, this by no

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[2] Herbert F. Lionberger, Adoption of New Ideas and Practices, (Iowa: Iowa State University, 1960), pp. 22-23.

means infers that the media of mass communication cannot profitably be used in other stages of the adoption process. As Lionberger suggests, "the radio has performed a legitimizing or 'okaying' function important at the evaluation, trial and final adoption stages".[3]

But what about the personal communications influence in the diffusion process? In the literature consulted there are some instances that illustrate the impact of this influence on decision making exerted by opinion leaders. For instance, Katz and Lazarsfeld found that personal influence counts much more than mass media influence for the people who changed their vote intention during the course of the campaign in the 1940 presidential elections.[4] Rahudkar (1958) is quoted by Rogers as reporting the following results: "neighbor to neighbor communication was of greater importance in the diffusion of farm innovations than any other communication channel in his study of India's villagers".[5]

The role of opinion leaders in the diffusion of farm practices among dairy farmers was also studied by Wilkening and associates in Northern Victoria, Australia. They reported that farmers sought as information sources are influential in a specific type of problem only, whereas others are influential in several problems.[6]

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[3] Ibid, p. 3.

[4] Elihu Katz and Paul F. Lazarsfeld, Personal Influence, (Illinois: 1955), p. 41.

[5] Everett M. Rogers, Diffusion of Innovations, (New York: 1952), p. 218.

[6] E. A. Wilkening, John Tully, and Hartley Presser, "Communication and Acceptance of Recommended Farm Practices Among Dairy Farmers of Northern Victoria", Rural Sociology, (June 1962), Vol. XXVII, No. 2, pp. 116-117.

In a study attempting to analyze the process by which Dutch farmers get information about new farm practices A. W. Van den Ban (1961) reported mass media as the most important source of information in their awareness of innovations; 75 per cent of the farmers mentioned mass media as their major sources of information during this stage. The same percentage of farmers stated that in the decision making stage their main source was personal contact with other farmers and extension officers.[7]

Beal and Bohlen (1957) conducted a study in United States to determine which sources were the most common and how influential each was at a particular stage of the adoption process. Their findings suggest that the most common sources during the awareness stage were mass media; during the interest stage, again mass media, followed by government agencies; during the evaluation stage, neighbors and friends; and during the trial stage, in rank order, neighbors, friends, government agencies, mass media and salesmen.[8]

In Central and South America there is some research done on farm innovations diffusion. For instance, Deutschmann and Mc Nelly,[9] in 1962, studied two Latin American communities: Saucio, a small village located in the Colombian Andes, and another village in San José, Costa Rica. In both communities these researchers found a close association between

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[7] A. W. Van den Ban, The Communication of New Farm Practices in the Netherlands, (An English summary of the book, Van Gorcum, Assen, Netherlands, 1963).

[8] G. M. Beal and J. M. Bohlen, The Diffusion Process, (Agricultural Extension Service; Iowa State College, Iowa Jr. No. 18, March 1957), p. 6.

[9] P. J. Deutschmann and J. T. Mc Nelly, El Uso de los Medios de Comunicación Masiva en Dos Comunidades Latinoamericanas, (A Paper presented at the 13th National Congress of Sociology at Hermosillo, Sonora, Mexico, from November 12 to 16, 1962).

higher educational, income and occupational levels and the opportunity for exposure to mass communications channels. They found that a higher exposure to mass communications channels was associated with a higher predisposition towards the adoption of technological change. Both studies provided support to the hypothesis that exposure to mass communication channels affects the information levels, the attitudes and the behavior of individuals by making them more sensitive to technological change.

As far as the role of the information sources in the diffusion process Oliver summarizes the research findings saying:

> The bulk of research dealing with the role of information sources during the diffusion and adoption processes tends to support, with few exceptions, the principle or generalization that mass media are major sources of information during the awareness and interest stages, while friends and neighbors constitute the major sources of information during the evaluation, trial and adoption stages.[10]

The Five Stages: A Controversial Theory

There has been some discrepancy as to the validity of the five stages of the adoption process. While some research tends to support this postulate, other research does not. In defense of the five stages theory Rogers cites studies such as those of Beal and Rogers (1960) and Coop and others (1958) that tend to support its validity.[11]

In the first study cited by Rogers (1962), Beal and Rogers investigated the adoption of two farm innovations among farmers of an Iowa

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[10] Oliver, op. cit., p. 23.

[11] Rogers, op. cit., p. 95.

community.[12] Their findings suggest that most of the respondents went through a series of stages from awareness to adoption. However, the same evidence, as reported by Rogers, indicated that adopters do not always pass through a five-stage process before adoption. In the Beal and Rogers study, for instance, some farmers skipped one or more stages (20 out of 1,070), especially the trial stage.

In his study of Puerto Rican dairy farmers Oliver found that progressive oriented dairy farmers usually followed the stages, while traditional farmers tended to skip most of them. Also, the progressive dairy farmer apparently is predisposed to accept new technology, while the traditional farmer tends to reject or just adopt without question. The transitional or intermediate farmers, according to Oliver, were average as expected (i. e., they followed more stages than the traditional oriented dairy farmer and less than the progressive oriented).[13]

The above mentioned categories were used by Oliver to classify farmers according to their combined value and communication channel orientations. For example, the progressive farmer is the one who exhibits more orientation toward modernism. The intermediate category comprises farmers in a stage of transition, intermediate between modernism and traditionalism. Finally, the farmers rooted to traditions in their orientations toward innovations are classified as traditional farmers.[14]

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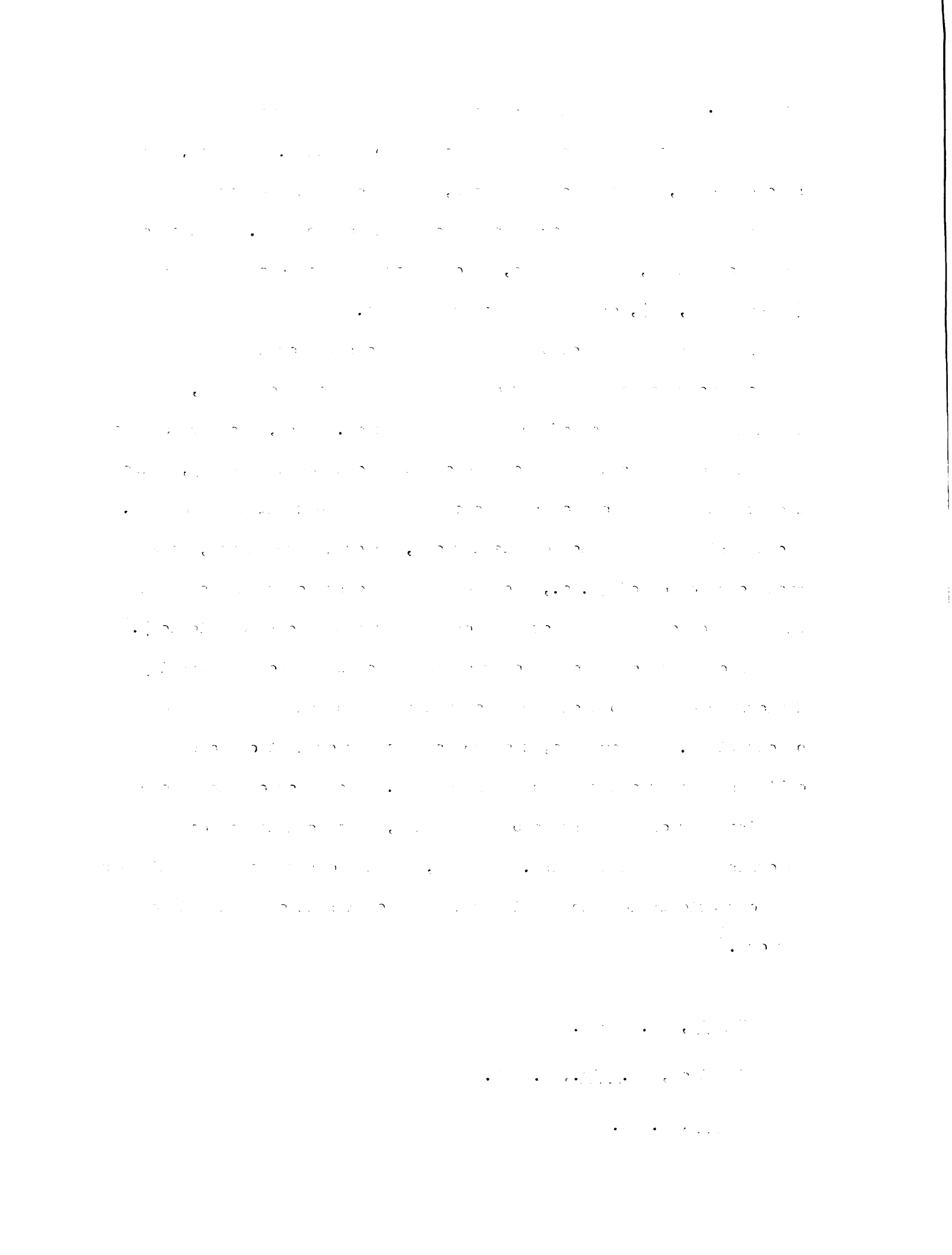
[12] Ibid, pp. 95-96.

[13] Oliver, op. cit., p. 192.

[14] Ibid, p. 11.



Apparently, research findings are sufficient to support the five stage adoption process. As Rogers puts it, "evidence from research studies indicates the conception of adoption stages is probably valid.[15]

This chapter could be judged incomplete without an explanation of the farmer categories from the innovativeness standpoint. Because of this reason and moreover, since this arbitrary classification completes the diffusion theory panorama, the social phenomenon is discussed in the next paragraphs.

Farmer Categories

Researchers have classified adopters into categories on the basis of the relative time at which they adopt an innovation or innovations. Now, this will show that not all adopters accept a new idea or practice at the same time. Like the process to produce aged rum, this is a time consuming phenomenon which requires the presence of certain conditions, to complete the cycle. In this chapter the classification done by Everett M. Rogers is cited both because of his acknowledged aythority in the field and the recency of his work.

Innovators - Venturesome is the main characteristic of the innovator. Besides he is used to cultivating cosmopolite social relationships. As Rogers defines it, cosmopoliteness is the degree to which an individual's orientation is external to a peculiar social system.[16] The innovator is eager to try new practices no matter their costs or results since he usually has plenty of money to absorb the financial loss in case of failure.

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[15] Rogers, op. cit., p. 119.

[16] Ibid, p. 183.

. Early adopters - Their peers show respect for them. This adopter category more than any other has the greatest degree of opinion leadership in most systems. Potential adopters look to them for advice and information about the innovation. Early adopters, I will add, are the most useful persons as far as the diffusion of farm practices is concerned. As the literature suggests they are in close contact with agents of change more than any other type of adopter, including the innovators.

Early majority - Their unique position between the very early and the relatively late to adopt makes them an important link in the process of legitimizing innovations.

Late majority - They adopt new ideas after the average member of a social system. Adoption may be both an economic necessity and the answer to increasing social pressures.

Laggards - These adopters are the most localite of all adopter categories, and many are near - isolates. They are traditional people and tend to be frankly suspicious of innovations, innovators and change agents.[17]

As stated before the early adopters can be advantageously used by the Extension personnel to accelerate the diffusion of new methods of work among the rural people. They should constitute the primary concern of the change agent to bridge the original sources of information and the potential adopters. The early adopter is the person with the necessary qualities to perform this connecting link in an efficient way. According to Rogers he has the necessary attributes to do a good job. He says,

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[17] Ibid, pp. 139-141.

"it is reasonable to expect that earlier adopters not only seek more impersonal, more cosmopolite, and more direct information sources, but that they seek a greater number of different information sources that later adopters".[18]

From the Extension standpoint the local adoption leaders are important links in the chain of communication. A study done by the Iowa Agricultural Extension Service shows that:

> they are not necessarily innovators or early adopters, but they do adopt ideas sooner than the majority who look to them for information. They have information contacts with agricultural agencies and other farmers outside the immediate localities who have tried the ideas. Studies show that these informal leaders are identified by the majority of farm people as neighbors and friends rather than as "leaders", because that's what they are to these people.[19]

In short, it can be safely say that both the early adopters - usually the larger and more commercial farmers in their areas - and the local adoption leaders are the most important farmers for the Extension Service as far as the diffusion of farm innovation is concerned.

At this point it should be mentioned that the potential adopters follow certain stages before accepting an idea on a permanent basis; moreover, that innovations are not accepted by all potential adopters at the same time. It is thus appropriate to examine the so-called two-step flow of information theory. This is basic to agents of change who continuously are using all kinds of mass media to "air" or print messages intended to influence a large audience in a positive manner.

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[18] Ibid, p. 182.

[19] Agricultural Extension Service, How Farm People Accept New Ideas, (Iowa: Iowa State College, Special Report No. 15, November 1955), pp. 9-10.

Two Step Flow of Information Theory

As stated by Katz and Lazarsfeld the information seems to flow from radio and print to opinion leaders and from them to the less active sections of the population. These authors suggest that "interpersonal relations are potential networks of communication and that an opinion leader can best be thought of as a group member playing a key communicator's role".[20]

This theory has been reviewed by Rogers. He found that the flow of information is a more complex phenomenon that the mere two-step idea. He argues:

> a reformulation of the two-step flow hypothesis suggests innovations spread from sources of new ideas via relevant channels to opinion leaders and from them by way of personal communication channels to their followers. It is likely that the first "step" from sources to opinion leaders is mainly a transfer of information while the second step from opinion leaders to their followers may also involve the spread of influence. Recent research evidence suggests a multiple step flow where opinion leaders may influence other opinion leaders and they in turn, influence their followers.[21]

I think that this multiple step flow of information tends to reinforce the acknowledged importance of the opinion leaders in the diffusion process. On the other hand, no matter how many steps the ideas demand to flow from original sources, the opinion leaders get, interpret, shape and spread the ideas among their followers according to their social background. In short, they spread new information, excerting at the same time strong influence over it.

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[20] Katz and Lazarsfeld, op. cit., p. 33.

[21] Rogers, op. cit., pp. 213-214.

Conclusion

An attempt has been made in this chapter to familiarize the reader with basic literature on the diffusion of farm innovations. Moreover, the author thinks this background literature and research findings will help the reader to understand and interpret the results of the present study. Now, the reader is about to start an imaginary trip to another setting where these diffusion concepts are tested once again under a different culture. This refers to the Puerto Rican tobacco growers' exposure to the media of mass communication and its relation to their predisposition to adopt new ideas and farm practices.

CHAPTER III

METHODOLOGY

The method adopted in this research to investigate the relation between frequency of exposure to mass media channels and level of adoption of tobacco farmers of the Agricultural Production Area within the Naranjito Trading Area will be described now.

The following three farm practices were selected to determine the relationship between the concept of adoption and the communication channel orientations of the tobacco farmer:

1. Use of hillside or contour ditches
2. Use of parathion insecticide on the tobacco plantations
3. Use of limestone on the soil of tobacco plantations

Indexes Used to Measure Media Exposure

The degree of exposure during a given time period was obtained for the following channels:

1. radio
2. television
3. press

Media exposure was measured in two ways:

a) exposure to a particular channel

b) overall exposure to all channels

1- Radio - Three sources were used for the investigation of the listening habits of tobacco farmers.

1) "Actualidad Agrícola": number of days listened to during a week, 2) other radio farm programs: number of days listened to any of them during a week, 3) radio farm releases: number of days listened to radio farm releases during a week.

General Exposure Index to Radio = Total number of days listened to the three (3) radio sources last week.

2- Television - Two sources were used, as frame of reference to test tobacco farmer's frequency of exposure to television - Panorama Agrícola: a TV weekly farm news program produced and telecast by the researcher, and exposure to any kind of information related to agriculture presented during a week on television.

General Exposure Index to Television = Number of times the farmer used two (2) TV sources.

3- Press - Two newspaper sources were used to measure frequency of exposure to this medium. Any kind of farm information read in El Imparcial during a week; any kind of information dealing with farm topics read in El Mundo during a week.

General Press Exposure Index = Number of issues read on two (2) newspaper sources.

To collect the data, questions like the following were constructed:

1. Did you listen to _____ during the last week?

___ YES ___ NO

2. Would you tell me which of the _____ you listened to?

___ MONDAY ___ WEDNESDAY ___ FRIDAY

___ TUESDAY ___ THURSDAY

3. Did you read during _____ ?

Questions like the preceding were used to find out the frequency of exposure to each one of the media channels investigated. To measure the overall exposure to mass media, scores for each one of the channels studied were added. By this procedure the researcher was in a position to get information about overall exposure.

General Media Exposure Index = Scores on radio + TV + newspapers

The Universe as our Sample

The population of tobacco farmers of the Agricultural Production Area of the Naranjito Trading Area was studied under this research. That is, eighty tobacco growers were interviewed by the researcher and other Extension personnel. Since the group was small it was possible to study the universe, thus eliminating any sampling error.

Methods of Collecting Data

A. Personal Interview

The next step was to select the methods for securing the information desired. In deciding the best methods we recalled the C. W. Allport saying, "If we want to know how people feel, what they experience and what they remember, what their emotions and motives are like, and the reasons for acting as they do - why not ask them?"

Considering the daily application of this thought and the conditions under which this study was done the combination of the personal interview and the questionnaire was chosen as the method to obtain the information desired.

The following are five reasons for the use of the personal

interviews as one of the methods for collecting the data:

1. The interviewer was able to explain the purpose of the study of the farmer.
2. The interviewer was able "to create a friendly atmosphere and to put the respondent at his ease", as Selltiz suggests.[1]
3. The interviewer entered the data in the questionnaire in an efficient manner and without bias, considering that he was dealing with farmers having little or no education.
4. To conduct the interviews the researcher was assisted by professional personnel. They were trained by the investigator as explained later on in this chapter.
5. It was extremely difficult to reach these tobacco farmers either via the mail or by telephone, since they live in an isolated countryside.

B. The Questionnaire

The questionnaire allowed the researcher to register the information gathered during the interview in a systematic manner. It was designed so that it enabled the author to tabulate and analyze the data in a rapid and efficient way.

The questionnaire designed and used for this study included items constructed to get the information sought by the investigator.

Under Block E of the questionnaire - adoption - questions were provided to determine sources of information at the awareness and interest stages of diffusion. Question number 21 was aimed at determining when the respondent became aware of each practice. (How did you get for first

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[1] Claire Selltiz, et al., Research Methods in Social Relations, (Holt, Rinehart, and Winston, New York, April 1964), p. 575.

time information about the practice?) Questions 26 and 27 were constructed in order to obtain information about the interest stage and the sources of information used by the respondent at this stage.

Two principles were considered in the construction of the questionnaire. To begin with, the questions were written considering the best psychological sequence from the standpoint of the respondent, instead of an apparent logical sequence, as Selltiz suggests.[2]

In addition, the investigator included extra questions in order to check the reliability of responses. Examples of this technique are included on Appendix A or the English version of the questionnaire.

C. Interviewing Procedure

The art of interviewing as explained by Selltiz, et al. in the book, Research Methods in Social Relations (revised), was applied by the researcher and the Extension personnel in charge of the interviewers. Briefly, these were some of the concepts that the interviewers were aware of:

1. The interviewer's manner should be friendly, courteous, conversational and unbiased.
2. He must understand that even a slight rewording of the question can so change the stimulus as to provoke answers in a different frame of reference, or bias the response.
3. He must be aware that any impromptu explanation of questions is prohibited.
4. If any respondent gives evidence of failing to understand a particular question, he can only repeat it slowly and with proper emphasis.

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[2] Ibid, p. 549.

5. The interviewer must be extremely careful not to suggest a possible reply.
6. He must inspect each interview, immediately after its completion, before he goes on to another respondent, to make sure that it has been filled in accurately and completely.

Field Work

A meeting with the Extension Director and his aides was held. The research project was discussed and its value for the Agricultural Extension Service was explained. As a result of this meeting three Extension agents were assigned to do the field work. To avoid contamination of the data, the agents from the Naranjito Trading Area did not participate in the interviewing job. Agents from other places were assigned to this Area during the interviewing period. The three members of the interviewing team were trained for a week.

The first training session was devoted to explaining the purpose of the study and discussing the questionnaire. The discussion had to do with the best ways to approach the farmers and expectations of the job to be done.

The second and third training sessions were devoted to training specifically for the job. The principles of the art of interviewing were widely discussed. Each member of the team conducted a practice interview in front of the group. In one case he acted as interviewer and the researcher as the farmer; in the next case the roles were reversed. Then each member of the team was asked to perform a interview of a farmer in a real situation under the supervision of the researcher. The last training meeting was devoted to preparing the interviewing schedule and to assigning the cases.

The pre-testing to improve the instrument was carried out in Puerto Rico with a sample of ten tobacco growers in Cidra county. The tobacco farmers of that county are similar in characteristics to those who were interviewed in the present study. An Extension agent and the researcher conducted the interviews at this stage in order to record problems related to length of the questionnaire, clarity of the questions, reactions of the farmers, etc.

After the pre-testing procedure the questionnaire was modified following the suggestions of the thesis chairman, the farmers interviewed and the county agents. The next step was the interviewing procedure of the farm population selected for the investigation.

The collection of the data took about four weeks. The county agents and the investigator worked on this phase of the study.

Statistical Analysis

The codification of the data was done by the researcher as soon as the field work was finished. The statistical analysis was done by the Electronic Computer Center of the Agricultural Experiment Station of the University of Puerto Rico at Río Piedras.

The analysis of the data was simplified in a significant manner by studying the universe or population. To analyze the relationship between mass media exposure and the awareness and interest stages in new ideas, simple correlation analysis (contingency coefficient) was used as the analytical tool. The same analytical tool was also used to determine the relationship between channel orientation, socioeconomic traits, and adoption of farm practices. Other analyses used were frequencies and percentages, particularly to present over-all adoption information and

data about favorite radio stations, daytime periods most favorable for radio tuning and amount of time devoted to daily radio listening.

The last two statistics were used, "to reduce a mass of data to an understandable form which can be quickly grasped", as Alder and Roessler suggest.[3]

In order to determine a number of associations between discrete variables, the contingency coefficient C, a nonparametric test, was used to process the data in this study. It was mainly applied to establish the relation between exposure to mass media channels and degree and awareness, interest and adoption of farm practices by the universe of operators studied. The same statistical analysis was applied to determine exposure to agents of change and level of awareness, interest and adoption and three farm practices. In other words, the contingency coefficient C was a useful statistic for analysis of the nominal data obtained; that is, to determine associations between exposure to mass media and agents of change and the awareness, interest and adoption stages of the diffusion process. As Siegel says, "the contingency coefficient C may be used when the information about the attributes consists of an unordered series of frequencies".[4]

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[3]Henry L. Alder and Edward B. Roessler, Introduction to Probability and Statistics, (W. H. Freeman and Co., San Francisco and London, third edition, 1964), p. 26.

[4]Sidney Siegel, Non Parametric Statistics for the Behavioral Sciences, (Mc Graw - Hill Book Co., Inc., 1956), p. 196.

CHAPTER IV

RESULTS

Part A -- Mass Media Habits

One of the main objectives of this research was to determine the mass media habits of the tobacco farm population of the Agricultural Production Area of the Naranjito Trading Area. Radio, press and television media were mainly considered to establish their habits to mass communication channels. For better understanding of the findings the media are discussed separately.

Radio

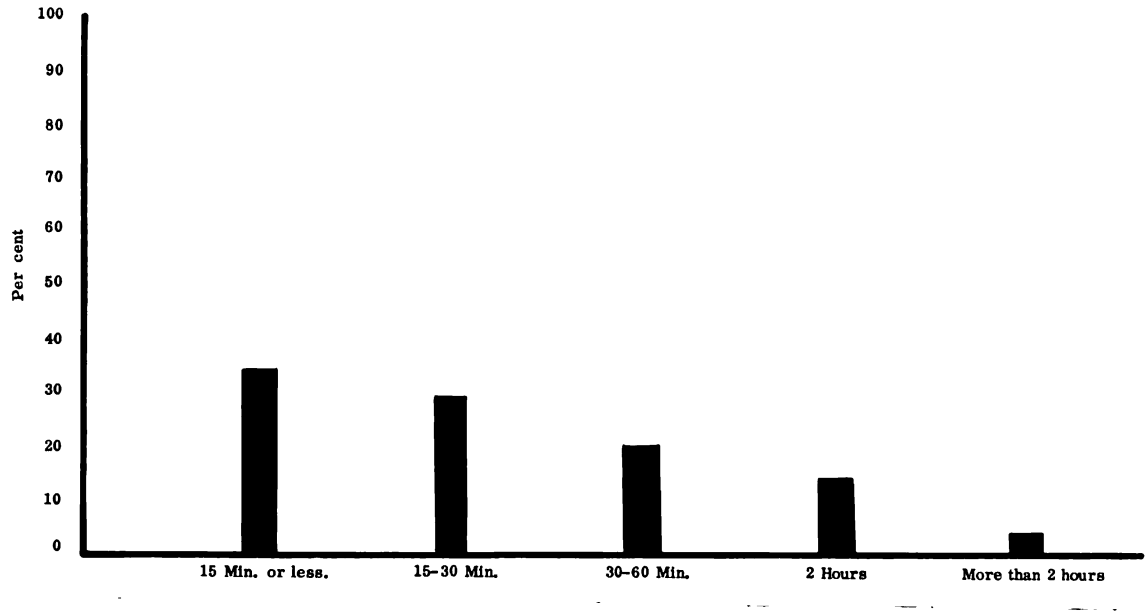
It was found that these farmers are well exposed to radio. Ninety nine per cent of them listened to radio regularly. Generally speaking, they are extremely well exposed to radio station programming and to direct agricultural programming as well.

According to the figures, approximately seventy-one per cent of the farmers said they listen to radio following a more or less uniform pattern during weekdays. However, this tendency showed a sharp decline on Saturdays and Sundays. There are some social factors that might explain their radio listening habits in this respect. During weekdays they stay on their farm doing all kinds of chores related to crops and livestock. But, on Saturdays they regularly go shopping, attend agricultural cooperative meetings and activities related to the church. On Sundays most of them attend mass, Sunday school, cock fights or visit friends and relatives. Hence, they are unable to listen to radio during the weekend.

But, how much time do they devote to radio listening? As shown by

Figure 1 they seem to listen to this medium for short periods of time rather than for long ones.

Figure 1. Time Devoted Each Time to Radio Listening by Farmers on Weekdays.

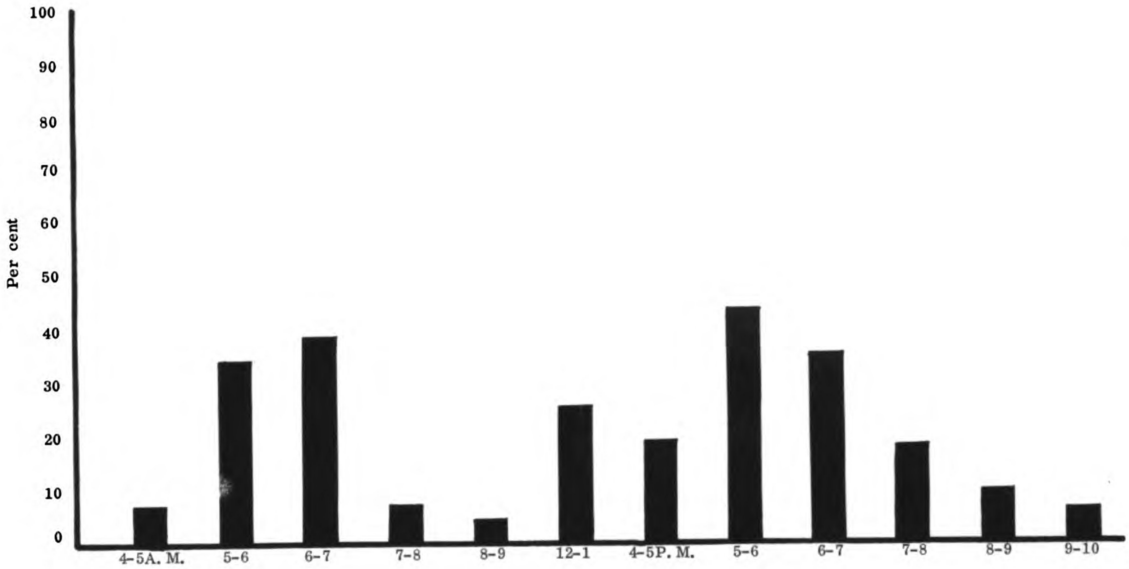


Thus far it is observed that tobacco growers of the Naranjito Trading Area are frequently exposed to radio, but for short periods.

At least thirty-four per cent of them listened to their radio sets for fifteen minute periods. Thirty per cent of the farmers tuned their radio sets for 15 to 30 minute-long segments. Figure one shows that this farm population is exposed to radio for short periods only, especially during weekends.

The most favorable daytime period for radio was also determined by this investigation. As demonstrated by Figure 2 there are three time segments or periods which are the most frequently tuned in by this farm population.

Figure 2. Daytime Periods Most Appropriate for Radio Listening.



These are time periods from five to seven o'clock in the morning, five to seven in the afternoon and at noon. It seems that in Puerto Rico the midday period is attracting listeners among farm operators.

It seems, however, that the five to six o'clock segment, in the afternoon, is the most favorable daytime period for radio listening among the tobacco farmers. Fifty per cent of the farmers prefer that time segment to listen to their radio sets. That figure shows also a slight tendency among these farm operators to be exposed to this medium during the evening, especially after seven o'clock.

As far as the morning is concerned the six to seven o'clock period seems more appropriate for radio listening among the tobacco farmers. Forty per cent of them tuned their radio sets at that time. Figure two suggests that the five to six o'clock segment in the morning is another favorable period for radio listening, since thirty-five farm operators apparently do so during the weekdays. The remaining morning periods do

not appear favorable for radio listening among the farmers considered in this study.

The data collected also pin-pointed the favorite radio stations of these farmers.

Figure 3. Radio Stations Listened to by Tobacco Growers of the Naranjito Trading Area.

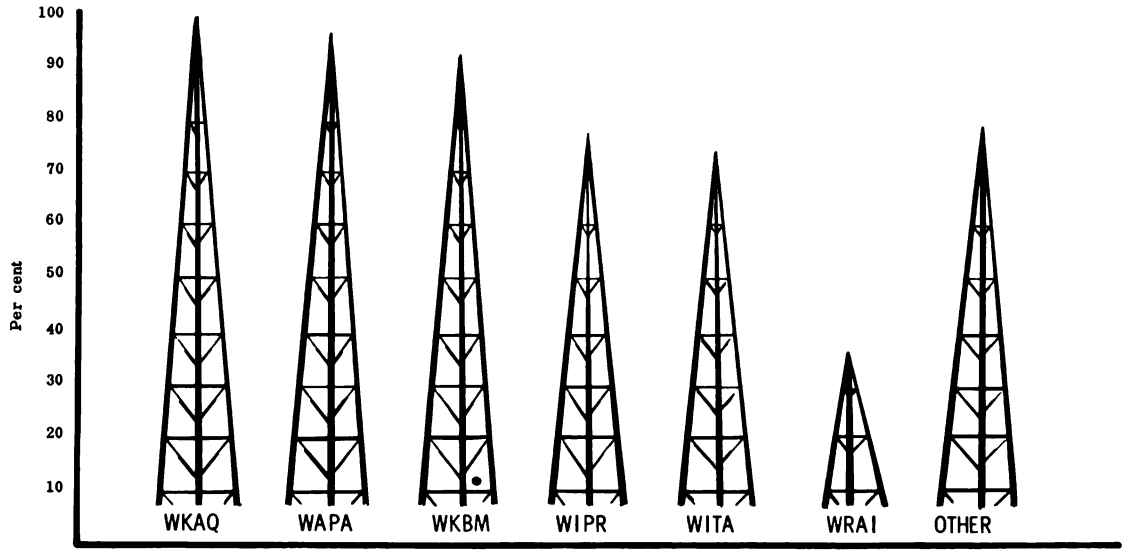


Figure three features WKAQ as the favorite radio station of the tobacco growers of the Naranjito Trading Area. Ninety-four per cent of the subjects regularly tune in on that station. WAPA and WKBM radio stations are listened to by ninety per cent of the farmers interviewed. The radio station of the Puerto Rico Department of Education, WIPR was ranked fourth by these farmers. It is interesting to point out that other radio stations are often heard in the studied area. Apparently, the geographical location of the region, 2,000 feet above sea level, permits these people to tune in to distant stations on the northern and southern coastal regions of the Island. As a matter of fact, some farmers reported they can easily tune in such radio stations as WMIA,

located at Arecibo - (northern coast) and WPRP at Ponce - (southern coast). The latter fact supports the statement that this farm population is well exposed to radio.

So far exposure to general radio programming has been described. Now, the farmers degree of exposure to direct agricultural sources of information via this medium will be discussed. It was found that 31 per cent of the farm operators listen to "Actualidad Agrícola". The data show that farmers listen to "Actualidad Agrícola" irregularly during weekdays.

The data show also that eighteen farmers (22.50 per cent) of this universe listen to other agricultural radio programs such as ECA Noticias (broadcast on Sundays mornings under the sponsorship of the Agricultural Stabilization and Conservation Service, USDA) and La Voz de Extensión, (produced by the Extension office at Caguas county), aired on Tuesdays mornings.

As far as radio releases are concerned, twenty-three of the farm operators (28.75 per cent) say they listen agricultural news via this medium. It should be pointed out that WKAQ, WAPA and other radio stations broadcast daily agricultural releases early in the morning to reach the rural area of the Island. These are agricultural news bulletins produced by the Puerto Rico Department of Agriculture and the Extension Service.

Press

Only twelve farmers (15 per cent) of the universe studied read the newspaper regularly. This is a low level of exposure to press. What reasons might lie behind this fact? Two facts apparently explain the low level of exposure of this group to the press.

First of all, it might be speculated that an illiteracy factor is

probably influencing the low frequency of exposure to press of this farm population. As pointed out in Chapter I, seventy-six per cent of the farmers in the Agricultural Production Area of the Naranjito Trading Area have not more than four years of schooling. Therefore, it might be said that many of them became functional illiterates after leaving school.

As a second reason the circulation of the main newspapers in Puerto Rico, EL MUNDO and EL IMPARCIAL, reach their peak at 69,925 and 53,062 copies respectively during weekdays. Those papers circulate primarily among the people living in urban zones of the Island. Very few copies circulate in the rural areas. In short, farm people do not have a significant access to these newspapers.

The fifteen per cent of these rural people that regularly read the papers did not show any particular pattern of exposure to the medium any day during the week.

Ten of them regularly read agricultural items, either in El Mundo or El Imparcial newspapers.

Television

"Panorama Agrícola", a 15 minute weekly TV news program, is telecast through a TV commercial network. The show is one of the main sources of farm information in Puerto Rico. Twenty-eight (35 per cent) of these farm operators regularly see this show telecast at 4:15 p.m. on Saturdays and rebroadcast at 4:45 p.m. on Sundays.

Eight farmers (10 per cent) see agricultural TV news during the week. Many factors might account for these habits.

First, it may happen that the broadcasting time of the most important commercial TV news programs is not appropriate for these

farmers. The WKAQ and WAPA TV channels feature news programs (15 minutes long) at seven o'clock and at ten o'clock in the evening. Longer TV news programs offer a good opportunity to broadcast news about agriculture. WIPR-TV airs a news show at six-thirty in the evening. These broadcasters put emphasis on international, national and local news about the Vietnam war, politics, sports, industries, government, rather than agricultural items.

Prior to 1963 the Extension Service TV news films were featured by the local channels. Since that date the films are shown at the Panorama Agrícola program, almost exclusively. This is a farm show with a fenced audience.

It might be stated that this farm population is selecting Panorama Agrícola as their prime source of agricultural information.

The reported findings in this chapter answer the set of questions considered in this study. For instance, do these farmers listen to radio and TV? Yes, they do. Do they read newspapers? Yes, but they are exposed to this medium at an insignificant level as compared with radio and TV. As far as agricultural programs are concerned, they show familiarity with radio and TV farm shows sponsored by the Puerto Rico Agricultural Extension Service, especially at the State level. Apparently, farmers do not follow a particular or definite mass media exposure pattern throughout the week. They just seem to be exposed to media channels whenever they have the time during the week. It should be emphasized that farmers do not listen as much to radio or TV on Saturdays and Sundays compared with weekdays.

Part B -- General Pattern of Adoption

The general trend or pattern of adoption for all farm practices is reported in table number 1 shown below.

Table 1 -- Pattern of adoption of farm practices by tobacco growers

Practice	N	Frequency of Adoption	Percentage of Adoption
Contour Ditching	80	41	51
Limestone	80	49	61
Parathion	80	56	70

As shown by table number 1 the individual frequencies of adoption were as follows: 41 farmers adopted contour ditching, 49 adopted limestone and 56 adopted parathion insecticide.

Irrespective of results reported in table 1, it was found that 41 tobacco growers (51.25%) adopted all three farm practices (contour ditching, limestone, and parathion), 27 of them, (33.75%) adopted only two of the three practices, while only 12 operators (15%) adopted just one practice.

A high degree of adoption within these tobacco farmers is observed.

Part C -- Exposure to Change Agents and Adoption

The next paragraphs report the results of simple correlation analyses to determine the relation between:

a) exposure to change agents and adoption

b) exposure to mass media and adoption

The data of table number 2 shown below present the relation between exposure to agents of change and adoption of individual practices.

Table 2 -- Relation between exposure to agents of change and adoption

Practice	X^2	C
Contour Ditching	10.41	.4218
Limestone	5.03	.2208
Parathion	8.61	.3871

A positive relationship between exposure to agents of change and adoption of all three farm practices was found.

The implementation of these farm practices demands knowledge and skill. In other words the tobacco producer cannot adopt the unless he recruits the assistance of an Extension agent, the Soil Conservation specialist or any other agricultural technician. These practices particularly contour ditching, have received predominant attention in the agricultural programs in this area where steep lands are the main feature in farming. Through face to face teaching, agents of change have been enforcing the adoption of contour ditching for the last twenty years. In addition, farmers received an incentive to carry out this practice. So the length of exposure to agents of change apparently accounts for the high degree of relation between the two variables.

It seems, that personal technical advice is also needed to put into work in the farm on-going operation the limestone and parathion practices. It can be taken for granted that county agents utilize the method demonstration and other teaching techniques to disseminate the know-how about the application of farm practices.

Apparently this farm population regards county agents as opinion leaders from whom they can seek advice and information. From the flow

of information standpoint it might be said that agricultural officials act as opinion leaders for these tobacco growers. That is, they get the information from the mass media and pass it on to them.

They seem to take part in the decision making process of these tobacco producers as to the adoption of practices is concerned. The agricultural officials have the ability, not only to transfer information to these farm operators but to influence their behavior as well.

Part D -- Exposure to Mass Media and Adoption

Now, what about the relation between radio, press and TV frequency of exposure and adoption of farm practices?

The data of table number 3 shown below present the relation between exposure to mass media and adoption of individual practices.

Table 3 -- Relation between exposure to radio, press, and tv and adoption

Practice	X^2	C
Contour Ditching	4.31	.2421
Limestone	0.57	.0873
Parathion	0.01	.0112

As illustrated by table 3, these media channels show a positive but low relationship to adoption. It is expected that the main function of media channels is to diffuse the information in a rapid, one way, and efficient manner. That is, to create awareness of innovations, instead of affecting the decision making process of the people.

In any case, the information published via mass media channels may predispose these farmers to change their behavior in terms of adoption of

new practices. As was pointed out before these tobacco producers are well exposed to radio.

Part E -- Socio economic Traits and Adoption

An attempt was also made to relate socio economic traits to adoption. The social traits considered were as follows: scale of operations (tobacco production), age and schooling.

Scale of operations and adoption

First, the level of adoption of all three farm practices as related to the group's scale of operations (tobacco production) is presented in the table number 4 shown below.

Table 4 -- Adoption of all three farm practices as related to scale of operations

Tobacco Production in Hundredweights	N	Frequency of Adoption	Per cent of Adoption
1 - 20	30	16	53
21 - 40	26	17	65
41 +	24	18	75

Two main findings are obtained from table number 4. A good level of adoption is apparently evident in each farmer's category as far as their scale of operations is concerned. Moreover, the data reflect a high degree of adoption among these tobacco producers with large scale of operations. It seems that the most heavy adopters of this farm population are found among actual commercial tobacco producers.

Table number 5 reports the results of simple correlation analyses

to determine the relation between scale of operations and adoption of farm practices.

Table 5 -- Relation between scale of operations and adoption

Practice	X^2	C
Contour Ditching	16.09	.4092
Limestone	17.74	.4260
Parathion	.32	.0636

There is a positive relationship between the scale of operations and adoption of contour ditching and limestone practices. A low positive relationship is also observed between this social trait and adoption of parathion. Parathion is a relatively cheap insecticide and it can be easily applied. Apparently, its use on tobacco plantations has no relation with the scale of operations of the farmer.

However, the operator who produces tobacco on a commercial scale is aware of the importance and use of contour ditching and limestone to boost crop production. The use of limestone has been acknowledged as a limiting factor in tobacco production in Puerto Rico. On the other hand contour ditching is associated with soil conservation and fertility and consequently with tobacco production per acre.

Age and adoption

The level of adoption of contour ditching, limestone and parathion insecticide as related to the group's age is presented in table number 6.

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Age and adoption

The level of adoption of contour ditching, limestone and parathion insecticide as related to the group's age is presented in table number 6.

Table 6 -- Adoption of all three farm practices as related to age

Age by years	N	Frequency of Adoption	Per cent of Adoption
20 - 39	10	5	50
40 - 59	38	24	63
60 - 79	32	13	41

Apparently, the middle age represents the peak in relation to adoption of agricultural practices. After 60 years of age these farm operators seem to start loosing interest in new agricultural technology.

Correlation analyses show a positive relationship between age and adoption of contour ditching and use of limestone.

Results of correlation analyses shown on table number 7 present a positive relationship between age and all farm practices.

Table 7 -- Relation between age and adoption

Practice	X^2	C
Contour Ditching	14.65	.3934
Limestone	8.01	.3017
Parathion	.18	.0476

However, a low positive relationship was found between age and adoption of parathion insecticide. Factors of other nature, such as the time of exposure to the practice and sources of information, might

account for the adoption of parathion.

Schooling and adoption

Finally adoption of all three farm practices as related to schooling is reported here.

Table 8 -- Adoption of all three farm practices as related to schooling

Years of schooling	N	Frequency of Adoption	Per cent of Adoption
0 - 3	43	23	53
4 - 7	33	14	42
8 - 12 *	4	3	75

* Only one farmer has completed twelve years of schooling.

The above data do not show a higher degree of adoption among the most "educated" tobacco producers of this farm population. The highest level of adoption is observed within farmers of the 0 - 3 years of schooling bracket.

According to simple correlation analyses, schooling shows a positive relationship with adoption of contour ditching and limestone. The results are reported in table number 9.

Table 9 -- Relation between schooling and adoption

Practice	x^2	C
Contour Ditching	3.21	.1790
Limestone	5.83	.2830
Parathion	.14	.0463

Confidence level .01%

Apparently, the adoption of parathion insecticide does not depend on these socio economic traits, since all of them have a positive but low relation with adoption of that practice. The adoption of the practice may depend on contacts with media channels and agents of change, incentives, weather conditions, etc.

Part G -- Media Channels and Diffusion Stages

A brief analysis of additional data shows the extraordinary role played by mass media channels as sources of farm information during the awareness and interest stages of the diffusion process.

The tendency was discovered through correlation analyses. The results are shown in table 10.

Table 10 -- Relation between exposure to mass media and awareness stage

Practice	X^2	C
Contour Ditching	4.3732	.6788
Limestone	3.2373	.6547
Parathion	3.4831	.6796

As shown by table 11 mass media are also important as sources of information during the interest stage, although the relationship between the two variables is lower.

It is possible that these tobacco growers start using other vehicles of information at the interest stage. For instance, agents of change, friends, field supervisors of cooperatives, neighbors, and other farmers.

Table 11 -- Relation between exposure to mass media and interest stage

Practice	X^2	C
Contour Ditching	2.7791	.5871
Limestone	2.5990	.5242
Parathion	3.4391	.6301

This finding shows that cosmopolite sources of information are important for these farmers during the awareness and interest stages of the diffusion process. Cosmopolite information about new ideas comes from outside the social system.

Press, radio and television have been effective in calling various decision alternatives to the initial attention of this farm population. In short, mass media have created awareness of these farm practices among the tobacco growers studied.

The bulk of facts and speculations that might explain the results of this study are presented as part of Chapter V. The interpretations, recommendations and implications of this research are also discussed in the next chapter.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

As reported in the previous chapter the media habits of the tobacco farmers of the Agricultural Production Area of the Naranjito Trading Area were determined by this research. Radio, press and television habits were determined to establish their media channel orientation. Conclusions and recommendations to reaching these people via these channels are discussed below.

Part A -- Mass Media Habits

Radio

According to this study these farmers are well exposed to radio. It seems they rely heavily on this medium for information and entertainment. Apparently, radio is the only source of information other than interpersonal relation for most farmers. An explanation of this trend might be that they have little access to the press and a low level of schooling.

In the light of these facts it is concluded that these tobacco farmers can be reached through radio. So the first recommendation is that Extension workers should emphasize the use of this medium to orient this farm population.

In so doing, however, it is suggested that the findings of this study are helpful in indicating the most favorable radio stations and daytime periods for radio tuning by these tobacco growers. For example, it is recommended that farm messages should be broadcast late in the afternoon and early in the morning, in that order. As a third choice they might be put on the air at noon time. Messages should be short,

since these farmers listen to the radio for short periods each time. In the case of radio programs they should be fifteen minutes long at the most. Extension agents dealing with this farm population should make arrangements with radio station programming directors to get favorable time to reach these farmers rapidly, economically and with a minimun of effort. Arrangements can be made to include news about agriculture on regular radio news programs.

The radio stations of greatest value for this audience are WKAQ (especially its daily news program Radio Reloj broadcast from six to eight in the morning), WAPA and WKBM.

In summary, radio is apparently the best impersonal channel for the diffision of Extension information among the tobacco growers considered in this study.

Press

As shown by the results the press does not open a wide information door to these tobacco growers. The data suggest that the low schooling of tobacco farmers reduces their exposure to press information. Nevertheless, press should be used as a supplementary channel for the diffusion of Extension information among these farmers.

Why? Because the medium offers fine information opportunities to the young tobacco farmers and the coming generation. Moreover, it reinforces the impact of messages delivered via other media such as radio and television.

Many weeks after the interviewing of these farm operators the Puerto Rico Farm Bureau (Asociación de Agricultores de Puerto Rico) started printing a newspaper with a circulation of 20,000 farm people, including these tobacco producers. This newspaper will be read by the

young members of the family who may pass the information to their parents.

Television

Tobacco growers appear to be considerably exposed to television. The data show an important level of exposure to agricultural information presented via television.

It is recommended that the telecasting of "Panorama Agrícola" be continued. But an attempt should be made to get time during weekdays to broadcast this and other farm shows through television in order to increase the Extension coverage.

Another recommendation is to emphasize the use of TV by the Extension personnel. They can produce film coverage news and other messages for the audience. In this way TV will complement radio and press in the Extension information program.

Part B -- Adoption of Agricultural Practices

These tobacco producers have been exposed to the studied practices for different periods of time. For instance, they have been exposed to contour ditching for the last twenty years and have been in contact with parathion during eleven years and to limestone during seven years. So the length of exposure to the practices might be one of the factors that account for their high level of adoption.

Other conditions such as the necessity of these practices to produce high yields and consequently obtain a higher income, the low cost of these practices, the incentive offered (in the case of contour ditching) and the land tenure, since most of them are owners, might also account for the high degree of adoption of contour ditching, limestone

and parathion.

However, the previous chapter showed that frequency of exposure to media channels and particularly the contact with change agents apparently influence adoption. Socio economic traits of farmers also impinge on their pattern of adoption.

The following paragraphs present the author's conclusions and recommendations to this respect.

Part C -- Exposure to Change Agents and Adoption

It can be concluded that contacts with change agents are important for the adoption of all three farm practices. Apparently these farmers need the assistance from the technician to accept every practice in their on-going farm operation.

Besides the change agents it seems there are other personal communication channels influencing this farm population. As mentioned before, the field supervisors of cooperatives apparently are strong sources of information during awareness, interest and adoption stages of the diffusion process. It would be a sound idea to study these supervisors' roles as sources of information not only for tobacco growers but for other farm operators such as starchy vegetable producers.

It can be concluded that personal communications influence the adoption of agricultural practices among these farmers. Further research with other farm populations should be accomplished using a considerable number of practices to determine the extent of influence of change agents over adoption.

Part D -- Exposure to Mass Media and Adoption

As shown by results an unexpected finding was obtained bu this investigation. Mass communication channels (radio, press, and TV) seem to play an important role in the adoption of farm practices. In this respect this finding diverges from the theory that presents the change agents, neighbors and friends as main influencing forces in the adoption process. For example, Rahudkar (1958) is quoted by Rogers as reporting that the "neighbor to neighbor communication was of greater importance in the diffusion of farm innovations than any other commercial channel in his study of India's villagers".

There are some conclusions, that might be made in interpreting the importance of media channels during adoption. Apparently, there is support for the hypothesis that there is a positive relationship between the information the tobacco grower gets from mass media channels and the modern practices he is using in his farm. Moreover, the findings suggest that adoption level is higher when frequency of exposure to media channels is high.

It seems also that these farmers are fully exposed to mass communication during adoption. It was stated that this farm population is easily reached by eight or nine radio stations because of their geographical location. This fact might account for a 'legitimizing or okaying' function during adoption accomplished by these impersonal communication media, especially radio, as Lionberger proposes.[1] As the findings suggest, almost all of them own and use their own radio sets to get information about agriculture.

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[1] Lionberger, op. cit., p. 3.

Generally speaking the Puerto Rican people, tobacco farmers included, apparently ascribe great credibility to mass media. On the other hand, mass communication channels have a well-defined set of characteristics that are attractive to people. For instance, they have been serving our people for many years, especially radio and press. Besides, these information vehicles reach thousands of people rapidly, simultaneously and with glamour and sophistication. For these reasons a reciprocal relationship is established between the importance of mass communication channels to these people and their frequency of exposure during adoption.

What agricultural information has been published by the Agricultural Extension Service that might serve as legitimizing force during adoption of the three farm practices studied? The year 1965 offers a good example of the informational efforts of this agency.

During that year the Extension agents broadcast 1,053 radio programs. At the State level, 612 radio farm showswere presented to the rural population. In addition, 700 radio farm news programs were produced by the State radio specialist.

During the year 1965, 260 TV shows were telecast island-wide through a commercial tv network. One hundred twenty-three news films were shown over three TV commercial and educational networks.

In the press field, 828 releases and 375 illustrated articles were published by local newspapers. They were produced at the State level.

During 1965 more than 600,000 copies of Extension publications were distributed among the rural people of Puerto Rico.

The aforementioned data describe the Puerto Rican Extension worker

as a mass media man. He is continuously publishing and airing information to orient farm people. That effort, in turn, might be influencing the tobacco farmers during adoption of farm practices. Additional research with other farm populations such as sugar cane and coffee growers, is needed to further determine the role of media channels during the adoption process.

Part E -- Mass Media and Diffusion Stages

The findings of this research confirm the role of the mass communication channels as sources of information during the awareness and interest stages of the diffusion process. This fact proves that a significant exposure to mass media channels may relate to a high degree of adoption of agricultural practices.

This reality has a practical meaning for Extension personnel. They must use media channels as much as they can to start the diffusion of new practices among these tobacco farmers. Moreover, they may use media communication channels all the way along the diffusion process, including the adoption stage. Further research is suggested to determine the role of mass media as sources of information throughout the diffusion process using other farm populations of a higher level of education and income.

In conclusion mass media channels are of paramount importance as sources of farm information during the awareness and interest stages of the diffusion process. A similar conclusion was made by Oliver in studying the Puerto Rican dairy farmers. He says that, "dairy farmers oriented toward a modern view of the world rely on mass media and

outside sources for information about dairy practices".[2]

Apparently the adoption of modern farm practices by these tobacco producers has a close relationship with their frequency of exposure to media channels. It can be argued also that this farm population has institutionalized media channels as vehicles of information about agricultural innovations.

Part F -- Socio economic Traits and Adoption

Age and scale of operations

As suggested by the data age and scale of operations have a strong influence on tobacco farmers and adoption of innovations. Older farmers and those operators with the largest scale of operations were the highest adopters of farm innovations.

The research findings appear to have relevant importance for the Extension worker. For instance, he should start the diffusion of new ideas and farm practices among middle-aged tobacco growers with large amounts of tobacco quotas. Further research is needed to discover the commercial and community adoption leaders among these farmers. They might be used by the Extensionist to accelerate the adoption of other methods of work within this farm population. In short, this study has suggested that age and scale of operations are essential socio-economic traits to be considered when attempting to encourage new practices in this farm population.

Schooling

Schooling did not show a high relationship to media exposure and

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[2] Oliver, Op. cit. p. 138

adoption. As shown by the results a high degree of adoption is observed among these farm operators despite their differences in schooling.

Lionberger assesses the importance of education in the diffusion process saying:

> education may merely create a supposedly favorable mental atmosphere for the acceptance of new practices. Since favorable orientations may be gained outside the schoolroom, correlation between years completed and adoption of farm practices is not always high.[3]

Apparently Lionberger's statement has direct application to the farmers considered in this research.

It might be concluded that age and scale of operations (tobacco production) overshadow schooling as far as influencing adoption among these tobacco growers.

Implications of the Study

This investigation has supported several principles of the diffusion and adoption processes under a new context: the Puerto Rican tobacco producers of the Agricultural Product on Area of the Naranjito Trading Area.

This farm population is part of the large rural clientele of the Puerto Rico Agricultural Extension Service. Hundreds of messages are continuously sent to them by the Extension personnel in an effort to modernize their agricultural business. Therefore, this investigation must be repeated with coffee farmers, starchy vegetable producers and sugar cane growers.

As the Extension worker learns more about the behavior of his

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[3] Lionberger, op. cit. p. 22

clientele he might be in a better position to communicate with them in an efficient manner. That is, "to affect them with intent" as David K. Berlo, says.[4] The extent to which the Extension worker might influence his audience is the real measure of the impact of his messages.

To study other Puerto Rican farmer populations the procedures used here must be refined and broadened in its scope. For example, it might be desirable to determine how farmers should be classified from the adoption standpoint. Are they innovators, early adopters, laggards? It is a good idea to study their time of adoption. Their media habits must be discovered so they can be oriented rapidly and effectively about new farm practices, products, and methods of work. Do they follow the diffusion stages or they tend to skip them? Are they oriented toward personal communication channels? How do socio economic traits affect their exposure to media channels and adoption of technical innovations? These are several of the questions that should be answered by similar studies of other Puerto Rican farm populations characterized by different social traits and living under a different setting.

The effort would very likely be repaid many times over in increased communication efficiency on the part of the Extension worker.

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[4] David K. Berlo, The Process of Communication, An Introduction to Theory and Practice. (Holt, Rinehart and Winston, New York - London), p. 12.

APPENDIX A

QUESTIONNAIRE - ENGLISH VERSION

INSTRUCTIONS TO THE INTERVIEWER:

Please read the following instructions carefully before starting your interviewing.

1. Read the introduction of the questionnaire to the respondent.
2. Don't let the respondent get an idea of your mass media habits or your opinion of his.
3. Don't give any further explanation of the question to the respondent unless absolutely necessary. If respondent requires explanation have interviewer make a note of it.
4. Always carry at least two medium-soft pencils and an eraser.
5. Carry at least an extra schedule with you in case a page is missing or part of the one you are using is illegible.
6. If, for any reason, you decide to start over on a fresh schedule, mark the old one with a large " X ".
7. We appreciate very much your effort and enthusiasm in doing this work.
8. Please return all completed questionnaires to us as soon as possible.

-------- 0 --------

INSTRUCTIONS OR INFORMATION TO THE RESPONDENT:

Your cooperation in answering the questions included in this questionnaire will allow the Puerto Rico Agricultural Extension Service to reach you effectively. The information will be confidential.

-------- 0 --------

QUESTIONS OF BLOCK A - RADIO

(SECTION A - QUESTIONS ONE THROUGH TEN)

1. Do you consider yourself a radio listener?

_____ YES _____ NO

IF ANSWER IS "NO" ANSWER THE FOLLOWING QUESTION AND GO ON TO BLOCK B.

_____ NO RADIO

_____ RADIO OUT OF ORDER

_____ WORK INTERFERS WITH LISTENING

_____ I DON'T LIKE RADIO

_____ I GET NEWS FROM NEWSPAPERS

_____ I GET NEWS FROM TV

_____ OTHER (PLEASE EXPLAIN) _____

2. When do you listen to the radio mostly?

_____ MONDAY _____ THURSDAY _____ SUNDAY

_____ TUESDAY _____ FRIDAY

_____ WEDNESDAY _____ SATURDAY

3. Which of the following time periods do you normally listen to the radio?

_____ 4:00 to 5:00 A.M. _____ 4:00 to 5:00 P.M.

_____ 5:00 to 6:00 A.M. _____ 5:00 to 6:00 P.M.

_____ 6:00 to 7:00 A.M. _____ 6:00 to 7:00 P.M.

_____ 7:00 to 8:00 A.M. _____ 7:00 to 8:00 P.M.

_____ 8:00 to 9:00 A.M. _____ 8:00 to 9:00 P.M.

_____ 12:00 to 1:00 P.M. _____ 9:00 to 10:00 P.M.

4. How much daily time would you guess that you spend listening to the radio?

_____ ABOUT FIFTEEN MINUTES OR LESS DAILY

_____ ABOUT THIRTY MINUTES OR LESS DAILY

_____ ABOUT ONE HOUR OR LESS DAILY

_____ MORE THAN TWO HOURS (IF MORE THAN TWO HOURS) How much time?

_____

5. To which of the following stations do you use to listen to?

(PUT A CHECK MARK IN THE CORRECT ANSWER)

1) W K A Q

a. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

2) W A P A

b. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

3) W I T A

c. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

4) W I P R

d. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

5) W R A I

e. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

6) W R S J

f. (____) MORE THAN ANY OTHER STATION

(____) OCCASIONALLY

(____) NEVER LISTEN TO THE STATION

(____) REGULARLY

(____) ON RARE OCCASIONS

7) OTHER (_____)

g. (_____) MORE THAN ANY OTHER STATION

(_____) OCCASIONALLY

(_____) NEVER LISTEN TO THE STATION

(_____) REGULARLY

(_____) ON RARE OCCASIONS

6. Have you happened to listen to the Extension Service radio program "Actualidad Agrícola" any time during the last week?

_____ YES _____ NO

INTERVIEWER: IF THE ANSWER TO QUESTION SIX WAS "YES" GO ON TO QUESTION SEVEN. IF THE ANSWER WAS "NO" GO ON TO QUESTION EIGHT.

---

7. According to your answer you listened to the program "Actualidad Agrícola" during the last week. Now, would you tell which of the following days did you listen to this farm program?

____ MONDAY ____ TUESDAY ____WEDNESDAY

____ THURSDAY ____ FRIDAY

8. Besides this radio farm program, did you listen to any other radio program during the last week in which farm information was offered?

_____ YES _____ NO

IF THE ANSWER TO QUESTION EIGHT WAS "NO" GO ON TO QUESTION TEN. IF THE ANSWER WAS "YES" GO ON TO QUESTION NINE.

---

9. According to your answer you listened to other farm radio program during the last week. Can you tell me the name of the program or programs and the weekdays you listened to them?

NAME OF PROGRAM	MON	TUE	WED	THU	FRI
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

10. Besides "Actualidad Agrícola" and those other radio programs that you just mentioned, did you remember any farm news that you heard in any other program?

_____ YES _____ NO

QUESTIONS OF BLOCK B - PRESS

(SECTION B - QUESTIONS ELEVEN THROUGH FOURTEEN)

11. Have you read the farm section (one page) published by "El Imparcial" newspaper any time during the last four weeks?

_____ YES _____ NO

IF THE ANSWER TO THE ELEVENTH QUESTION WAS "YES" GO ON TO QUESTION TWELVE. IF THE ANSWER WAS "NO" GO ON TO QUESTION THIRTEEN.

---

12. According to your answer you read at least once the farm section of "El Imparcial" newspaper during the last four weeks. Which of the following issues did you read?

_____ LAST SATURDAY _____ THREE SATURDAYS AGO

_____ TWO SATURDAYS AGO _____ FOUR SATURDAYS AGO

BESIDES THE WEEKLY FARM SECTION OF "EL IMPARCIAL" NOW I WOULD LIKE TO THINK ABOUT THE DAILY ISSUES OF BOTH "EL MUNDO" AND "EL IMPARCIAL".

13. Did you read any farm news in any one of the daily issues of these papers during the last week?

____ YES ____ NO

IF THE ANSWER TO QUESTION THIRTEEN WAS "YES" GO ON TO QUESTION FOURTEEN. IF THE ANSWER WAS "NO" PROCEED WITH QUESTION FIFTEEN - TELEVISION.

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14. According to your answer, there are some farm news that you read about in any one of these newspapers. Would you mind to tell me specifically in which one of them and the date of the last week that you read the farm information.

EL MUNDO	___MON	___TUE	___WED	___THU	___FRI
EL IMPARCIAL	___MON	___TUE	___WED	___THU	___FRI

QUESTIONS OF BLOCK C - TELEVISION

(SECTION C - QUESTIONS FIFTEEN THROUGH SEVENTEEN)

15. Did you watch the Extension tv weekly news farm program in channel 2 any time during the last four weeks?

____ YES ____ NO

IF THE ANSWER TO THE QUESTION WAS "YES" GO ON TO QUESTION SIXTEEN. IF THE ANSWER WAS "NO" GO ON TO QUESTION SEVENTEEN.

---

16. Which one of the following presentations of this program did you watch to?

___ LAST SATURDAY ___ TWO SATURDAYS AGO

___ THREE SATURDAYS AGO

17. Did you watch any tv farm news in any other program during the last week?

a. ____ YES ____ NO

IF THE ANSWER TO THE QUESTION WAS "NO" GO ON TO QUESTION EIGHTEEN. - EXPOSURE TO AGRICULTURAL OFFICERS.

---

b. Can you tell me in which of the following weekdays did you heard any farm news in television?

____ MONDAY ____ TUESDAY ____ WEDNESDAY

____ THURSDAY ____ FRIDAY

QUESTIONS OF BLOCK D - EXPOSURE TO AGRICULTURAL OFFICERS

(SECTION D - QUESTIONS EIGHTEEN AND NINETEEN)

18. Can you tell me if you have had any contact with agricultural officers during the last four weeks?

a. ____ YES ____ NO

IF THE ANSWER TO THE QUESTION WAS "YES" GO ON TO THE OTHER QUESTIONS OF THIS BLOCK. IF THE ANSWER WAS "NO" GO ON TO THE QUESTIONS OF BLOCK E.

---

19. Have you been in contact with any agricultural officer during the last week?

a. ____ YES ____ NO

INTERVIEWER: IF THE ANSWER TO THE QUESTION WAS "YES" ASK HIM THOSE AGRICULTURAL OFFICERS. IF THE ANSWER WAS "NO" GO ON TO QUESTION C.

---

b. With whom of the following officers have you been in contact during last week?

Agric. Officer of:	Total No. of Contacts
1. Extension Service	
2. Farmers Home Adm.	
3. Soil Conservation	
Total No. of Contacts during last week	

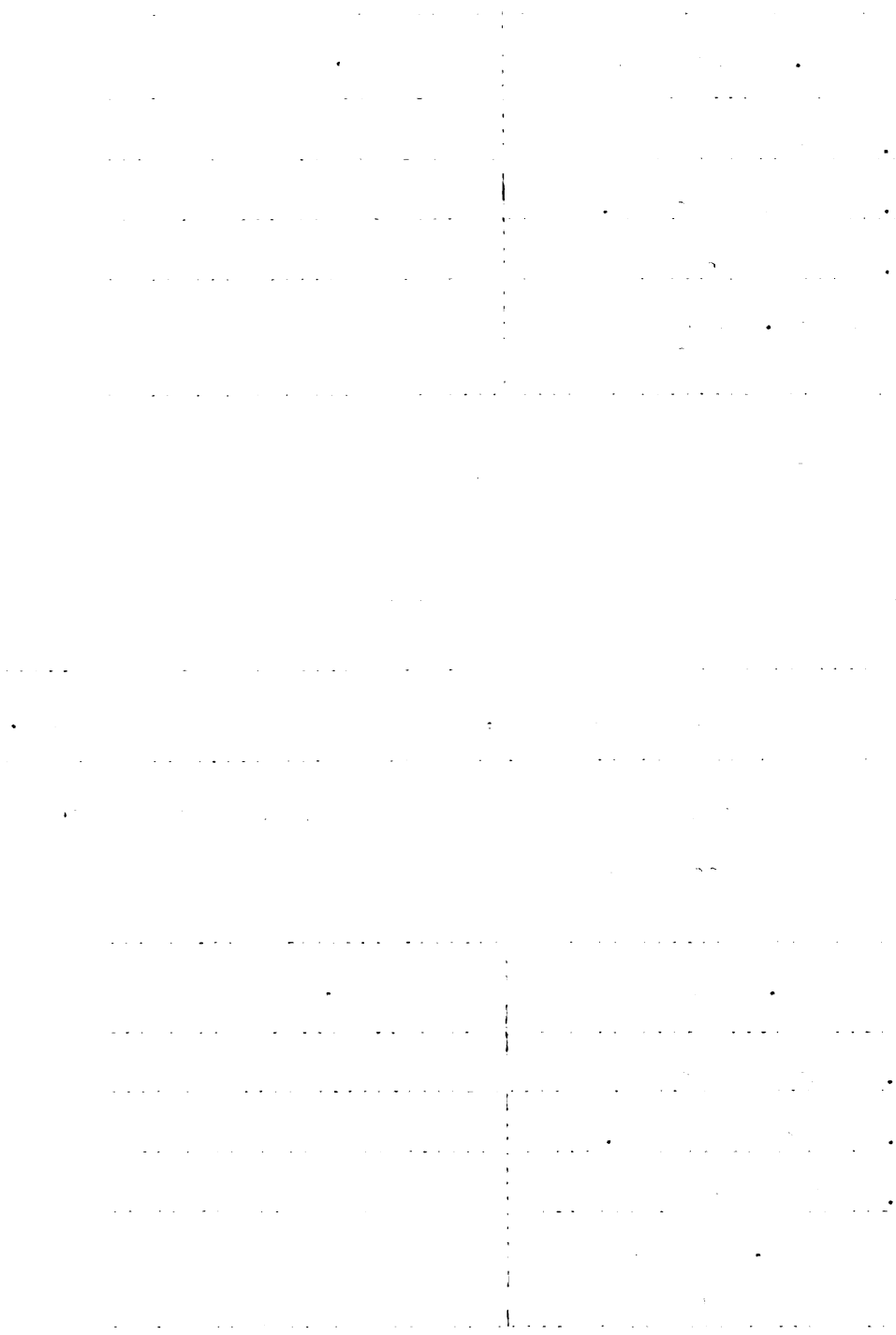
c. Have you been in contact with any agricultural officer two weeks ago?

____ YES ____ NO

IF THE ANSWER TO THE QUESTION WAS "YES", ASK HIM THE FOLLOWING QUESTION.

d. With whom of the following agricultural officers have you been in contact two weeks ago?

Agric. Officer of:	Total No. of Contacts
1. Extension Service	
2. Farmers Home Adm.	
3. Soil Conservation	
Total No. of Contacts Two Weeks Ago	



e. Have you been in contact with any agricultural officer three weeks ago?

____ YES ____ NO

IF THE ANSWER TO THE QUESTION WAS "YES" GO ON TO QUESTION F. IF THE ANSWER WAS "NO" GO ON TO QUESTION G.

---

f. With whom of the following agricultural officer have you been in contact three weeks ago?

Agric. Officer of:	Total No. of Contacts
1. Extension Service	
2. Farmers Home Adm.	
3. Soil Conservation	
Total No. of Contacts Three Weeks Ago	

g. Have you been in contact with any agricultural officer four weeks ago?

IF THE ANSWER TO THE QUESTION WAS "YES" GO ON TO QUESTION H. IF THE ANSWER WAS "NO" GO ON TO QUESTIONS OF BLOCK E.

---

h. With whom of the following officers have you been in contact four weeks ago?

Agric. Officer of:	Total No, of Contacts
1. Extension Service	
2. Farmers Home Adm.	
3. Soil Conservation	
Total No. of Contacts Four Weeks Ago	

QUESTIONS OF BLOCK E - ADOPTION

(SECTION E - QUESTIONS TWENTY THROUGH TWENTY EIGHT)

PRACTICE NO. 1 HILLSIDE DITCHES

20. Have you ever seen, read or heard about hillside ditches?

____ YES ____ NO

21. How did you get for first time information about the practice?

____ TV ____ RADIO ____ PRESS

____ TECHNICAL BULLETIN ____ COUNTY AGENT ____ FARMER

____ OTHER

22. Have you ever used hillside ditches?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" CONTINUE WITH QUESTION TWENTY THREE.

IF ANSWER IS "NO" CONTINUE WITH NEXT PRACTICE.

---

23. Have you continued using the practice?

____ YES ____ NO

IF THE ANSWER TO QUESTION TWENTY THREE IS "YES" GO ON WITH QUESTIONS TWENTY FOUR. IF ANSWER IS "NO" GO ON TO NEXT PRACTICE.

---

24. To what extent did the Government Agricultural Officers influence your decision to adopt the practice?

___ ¿MUCH? ____ ¿SOME? ____ ¿ A LITTLE? ___ ¿NOTHING?

25. Who influence mostly your decision to use the practice?

____ AGRICULTURAL OFFICER ____ FARMER ____ SALESMAN

____ PRESS ____ RADIO ____ TV

26. After first being aware of the practice, did you adopt it without seeking for additional information?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" GO ON TO NEXT PRACTICE. IF THE ANSWER IS "NO" GO ON TO QUESTION TWENTY SEVEN.

---

27. Would you please name the sources you use to seek for additional information?

____ AGRICULTURAL OFFICER ____ PRESS, RADIO OR TV

____ FARMER ____ OTHER

28. After getting additional information, did you adopt the practice?

____ YES ____ NO

PRACTICE NO. 2 - USE OF LIMESTONE ON TOBACCO PLANTATIONS

(SECTION E - PRACTICE TWO - QUESTIONS TWENTY NINE THROUGH THIRTY SEVEN)

29. Have you ever seen, read or heard about the use of limestone on tobacco plantations?

____ YES ____ NO

30. How did you get for first time information about the practice?

____ TV ____ COUNTY AGENT

____ TECHNICAL BULLETIN ____ PRESS

____ RADIO ____ FARMER

____ OTHER

31. Have you ever used limestone on tobacco?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" CONTINUE WITH QUESTION QUESTION THIRTY TWO. IF ANSWER IS "NO" CONTINUE WITH NEXT PRACTICE.

---

32. Have you continued using the practice?

____ YES ____ NO

IF THE ANSWER TO THE QUESTION IS "YES" GO ON WITH QUESTION THIRTY THREE. IF ANSWER IS "NO" GO ON TO THE NEXT PRACTICE.

---

33. To what extent did the Government Agricultural Officers influence your decision to adopt the practice?

___¿MUCH? ___¿SOME? ___¿A LITTLE? ___¿NOTHING?

34. Who influence mostly your decision to use the practice?

___ AGRICULTURAL OFFICER ___ RADIO

___ PRESS ___ SALESMAN

___ FARMER ___ TELEVISION

35. After first being aware of the practice, did you adopt it without seeking for additional information?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" GO ON TO NEXT PRACTICE. IF THE ANSWER IS "NO" GO ON TO QUESTION THIRTY SIX.

---

36. Would you please name the sources you use to seek for additional information?

____ AGRICULTURAL OFFICER ____ PRESS, RADIO OR TV

____ FARMER ____ OTHER

37. After getting additional information, did you adopt the practice?

____ YES ____ NO

PRACTICE NO. 3 - USE OF PARATHION INSECTICIDE

(SECTION E - PRACTICE THREE (QUESTIONS THIRTY EIGHT THROUGH FORTY SIX)

38. Have you ever seen, read or heard about the use of insecticides on tobacco plantations?

____ YES ____ NO

39. How did you get for first time information about the practice?

____ TELEVISION ____ COUNTY AGENT

____ TECHNICAL BULLETIN ____ PRESS

____ RADIO ____ FARMER

40. Have you ever used insecticide on tobacco plantations?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" CONTINUE WITH QUESTION FORTY ONE. IF ANSWER IS "NO" FINISH THIS PART OF THE INTERVIEW AND PROCEED WITH BLOCK F.

---

41. Have you continued using the practice?

____ YES ____ NO

IF ANSWER TO THE QUESTION IS "YES" GO ON WITH QUESTION FORTY TWO. IF ANSWER IS "NO" PROCEED WITH BLOCK F.

---

42. To what extent did the Government Agricultural Officers influence your decision to adopt the practice?

___¿MUCH? ___¿SOME? ___¿A LITTLE? ___¿NOTHING?

43. Who influence mostly your decision to use the practice?

___ AGRICULTURAL OFFICER ___ RADIO

___ PRESS ___ SALESMAN

___ FARMER ___ TELEVISION

44. After first being aware of the practice, did you adopt it without seeking for additional information?

___ YES ___ NO

IF ANSWER TO THE QUESTION IS "YES" GO ON TO NEXT PRACTICE. IF THE ANSWER IS "NO" GO ON TO QUESTION FORTY FIVE.

---

45. Would you please name the sources you use to seek for additional information?

___ AGRICULTURAL OFFICER ___ FARMER

___ PRESS, RADIO OR TV ___ OTHER

46. After getting additional information, did you adopt the practice?

___ YES ___ NO

QUESTIONS OF BLOCK F - FARMER'S PERSONAL CHARACTERISTICS

(SECTION F - QUESTIONS FORTY SEVEN THROUGH FIFTY NINE)

47. Total number of persons living in household.

___ 3	___ 8	___ 13	___ 18 or more
___ 4	___ 9	___ 14	
___ 5	___ 10	___ 15	
___ 6	___ 11	___ 16	
___ 7	___ 12	___ 17	

48. How old are you?

(_____) AGE IN YEARS

49. What is your marital status?

____ MARRIED	____ WIDOW
____ SINGLE	____ OTHER

50. Have you attended school at all?

____ YES ____ NO

IF THE ANSWER WAS "YES" GO ON WITH QUESTION FIFTY ONE. IF THE ANSWER WAS "NO" GO ON WITH QUESTION FIFTY TWO.

---

51. How many years of education?

ELEMENTARY SCHOOL	1	2	3	4	5	6	7	8
HIGH SCHOOL	1	2	3	4				
COLLEGE	1	2	3	4				

52. Total number of acres owned or rented for operation of farm business.

(_____)

53. Amount of tobacco quota.

(_____)

54. Do you derive your total income from your tobacco business?

____ YES ____ NO

55. Total number of acres devoted to the tobacco crop.

(_____)

56. Total hundredweights of tobacco produce per year.

(_____)

57. Name of entity or person who market your crop.

_____

58. Let us see now your experience in farming. That is, how many years have you been involved in tobacco farming? (CHECK ONLY ONE CATEGORY)

a. ____ LESS THAN FIVE YEARS

b. ____ COMPLETED FIVE YEARS

c. ____ OVER FIVE YEARS BUT LESS THAN TEN

d. ____ COMPLETED TEN YEARS

e. ____ OVER TEN YEARS BUT LESS THAN FIFTEEN

f. ____ FIFTEEN YEARS

g. ____ TWENTY YEARS OR OVER (IF MORE THAN 20 YEARS, PLEASE SPECIFY HOW MANY (_____)

59. What do you usually do after you get some information from mass media? (I REFER TO PRESS, RADIO AND TELEVISION)

INTERVIEWER: PLEASE, CHECK ONE OR MORE CATEGORIES.

---

a. ____ CONSULT ANOTHER FARMER OR NEIGHBOR ABOUT IT

b. ____ CONSULT THE COUNTY AGENT

c. ____ CONSULT AN EXTENSION PUBLICATION

d. ____ WRITE FOR MORE INFORMATION

e. ____ OTHERS (PLEASE SPECIFY)

_____

_____

APPENDIX B

QUESTIONNAIRE - SPANISH VERSION

Instrucciones al Entrevistador:

Por favor, lea y aplique cuidadosamente las instrucciones siguientes antes de comenzar a realizar las entrevistas.

1. Lea la introducción del cuestionario al agricultor.
2. No permita que el entrevistado obtenga una idea de su orientación hacia los canales de comunicación para las masas ni su parecer u opinión sobre los del entrevistado.
3. No dé una explicación adicional a las preguntas a menos que sea absolutamente necesario. Si el entrevistado exige una explicación adicional, anótelo en el revés de la página.
4. Siempre lleve consigo, por lo menos, dos lápices (medium-soft) y un borrador.
5. Lleve consigo un cuestionario adicional para sustituir aquel al cual le falte una página o que alguna de sus partes no pueda leerse con facilidad.
6. Si por alguna razón, usted decide comenzar con un nuevo cuestionario, marque con una "X" en que ha desechado.
7. Agradecemos de veras su esfuerzo y entusiasmo al realizar este trabajo.
8. Por favor, devuelva todos los cuestionarios completados tan pronto como le sea posible.

Instrucciones o Información al Entrevistado:

La información que usted brinde a través de este cuestionario permitirá al Servicio de Extensión Agrícola llevarle más información. Bajo ninguna circunstancia su nombre será mencionado en este estudio.

PREGUNTAS DEL BLOQUE A - RADIO

(SECCION A - PREGUNTAS DE LA UNO A LA OCHO)

1. ¿Escucha usted la radio?

____ SI ____ NO

NOTA AL ENTREVISTADOR: SI LA CONTESTACION A LA PASADA PREGUNTA ES (SI) PROCEDA CON LA PREGUNTA NUMERO (2). SI LA CONTESTACION ES (NO)...¿POR QUE NO? MARQUE UNA DE LAS RAZONES SIGUIENTES Y PASE AL BLOQUE B.

____ RADIO DAÑADO

____ EL TRABAJO CONFLIGE CON EL USO DEL MEDIO

____ NO ME GUSTA ESCUCHAR LA RADIO

____ USO LA PRENSA COMO MEDIO DE INFORMACION

____ USO LA TELEVISION COMO MEDIO DE INFORMACION

____ OTRA RAZON (POR FAVOR EXPLIQUE) _____

2. ¿Cuando escucha usted la radio mayormente?

____ LUNES ____ MARTES ____ MIERCOLES

____ JUEVES ____ VIERNES ____ SABADO

____ DOMINGO ____ CUALQUIER DIA DE LA SEMANA

3. ¿Durante cuál de los siguientes períodos escucha la radio normalmente?

____ 4:00 a 5:00 A.M. ____ 4:00 a 5:00 P.M.

____ 5:00 a 6:00 A.M. ____ 5:00 a 6:00 P.M.

____ 6:00 a 7:00 A.M. ____ 6:00 a 7:00 P.M.

____ 7:00 a 8:00 A.M. ____ 7:00 a 8:00 P.M.

____ 8:00 a 9:00 A.M. ____ 8:00 a 9:00 P.M.

____12:00 a 1:00 P.M. ____ 9:00 a 10:00 P.M.

4. ¿Cuánto tiempo cree usted que dedica a escuchar la radio diariamente?

____ ALREDEDOR DE QUINCE MINUTOS O MENOS

____ ALREDEDOR DE TREINTA MINUTOS O MENOS

____ ALREDEDOR DE UNA HORA O MENOS

____ ALREDEDOR DE DOS HORAS O MENOS

____ MAS DE DOS HORAS (SI ESCUCHA MAS DE DOS HORAS DIARIAS, INDIQUE CUANTO TIEMPO.) _____

5. ¿Cuál de las siguientes estaciones de radio escucha usted?

1) W K A Q

a. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

2) W A P A

b. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

3) W I T A

c. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

4) W I P R

d. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

5) W R A I

e. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

6) W K B M

f. (____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

7) OTRAS _____

(____) MAS QUE CUALQUIER OTRA ESTACION

(____) OCASIONALMENTE

(____) NUNCA ESCUCHO ESTA ESTACION

(____) REGULARMENTE

(____) EN RARAS OCASIONES

6. ¿Escuchó usted durante la pasada semana alguna transmisión del programa de radio de Extensión Agrícola, "Actualidad Agrícola", que se presenta por las mañanas?

____ SI ____ NO

ENTREVISTADOR: SI LA CONTESTACION A LA PASADA PREGUNTA ES (SI) PROCEDA CON LA PREGUNTA NUMERO (7)... SI LA CONTESTACION ES (NO)... PASE A LA PREGUNTA NUMERO (8).

---

7. Usted me dijo que escuchó el programa de radio "Actualidad Agrícola" durante la pasada semana,... pues bien, ¿podría decirme cuál de los siguientes días de la semana pasada escuchó dicho programa?

____ LUNES ____ MARTES ____ MIERCOLES

____ JUEVES ____ VIERNES

8. Además del programa de radio "Actualidad Agrícola",...¿escuchó usted durante la semana pasada algún otro programa de radio sobre temas agrícolas?

____ SI ____ NO

ENTREVISTADOR: SI LA CONTESTACION ES (NO)..PASE A LA PREGUNTA (10).

---

9. Usted me dijo que escuchó otros programas de radio sobre temas agrícolas la semana pasada. ¿Podría decirme el nombre del programa o programas que escuchó y los días de la pasada semana en que los escuchó?

NOMBRE DEL PROGRAMA	LUNES	MAR.	MIER.	JUEV.	VIERNES
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

10. Además de "Actualidad Agrícola" y de los otros programas de radio sobre temas agrícolas mencionados por usted...¿recuerda usted haber escuchado algunas noticias agrícolas en algún noticiero o programa de alguna estación o estaciones de radio durante la semana pasada?

____ SI ____ NO

ENTREVISTADOR: ESTA ES TODA LA INFORMACION QUE INTERESAMOS EN RELACION CON EL USO DE LA RADIO...AHORA PASAREMOS A PREGUNTARLE SOBRE EL USO DE LA PRENSA COMO FUENTE DE INFORMACION.

PREGUNTAS DEL BLOQUE B - PRENSA

(SECCION B -- PREGUNTAS ONCE Y DOCE)

11. ¿Leyó usted alguna noticia agrícola ya sea en EL IMPARCIAL o EL MUNDO durante la semana pasada?

____ SI ____ NO

12. Me dice que leyó alguna información agrícola en los periódicos durante la pasada semana...pues bien,...¿podría decirme en que periódico y qué días de la semana pasada leyó usted alguna información sobre agricultura?

EL MUNDO	___LUN	___MAR	___MIER	___JUEV	___VIER
EL IMPARCIAL	___LUN	___MAR	___MIER	___JUEV	___VIER

ENTREVISTADOR: AHORA NOS INTERESAMOS EN LA TELEVISION COMO FUENTE DE INFORMACION PARA LOS AGRICULTORES. NUESTRA PRIMERA PREGUNTA ES ....

PREGUNTAS DEL BLOQUE C - TELEVISION

(SECCION C - PREGUNTAS TRECE A LA QUINCE)

13. ¿Ha visto usted el programa televisado que presenta todos los sábados a las 4:15 de la tarde el Servicio de Extensión Agrícola por WKAQ (Panorama Agrícola) por lo menos una vez durante las últimas cuatro semanas?

____ SI ____ NO

SI LA CONTESTACION ES (NO) ... PASE A LA PREGUNTA QUINCE.

14. ¿Cuál o cuáles de las siguientes tele-audiciones de este programa usted vió?

___ LA DEL SABADO PASADO ___ LA DE HACE TRES SABADOS

___ LA DEL SABADO ANTEPASADO ___ LA DE HACE CUATRO SABADOS

ENTREVISTADOR: HABLANDO AHORA DE TODAS LAS ESTACIONES DE TELEVISION Y DE TODOS LOS PROGRAMAS DE NOTICIAS Y REPORTAJES FILMICOS QUE SE PRESENTAN POR LAS ESTACIONES...

15. ¿Vió usted por televisión alguna información o noticia sobre agricultura durante la última semana? (ENTIENDASE LA SEMANA PASADA)

a. ____ SI ____ NO

b. ¿Podría decirme cuáles de los siguientes días de la semana fue que usted vió información o noticias agrícolas por televisión?

____ LUNES ____ MARTES ____ MIER

____ JUEVES ____ VIERNES

ENTREVISTADOR: COMO USTED SABE DON _____ EN PUERTO RICO HAY VARIAS AGENCIAS AGRICOLAS PRESTANDO AYUDA A LOS AGRICULTORES TABACALEROS, NOSOTROS ESTAMOS INTERESADOS EN OBTENER INFORMACION SOBRE EL USO QUE NUESTROS AGRICULTORES HACEN DE LOS SERVICIOS OFRECIDOS POR DICHAS AGENCIAS....

PREGUNTAS DEL BLOQUE D - EXPOSICION A OFICIALES AGRICOLAS

(SECCION D - PREGUNTAS DIECISEIS Y DIECISIETE)

16. Don _____, ¿podría decirme si durante las últimas cuatro semanas ha estado usted en contacto con algún empleado agrícola?

_____ SI _____ NO

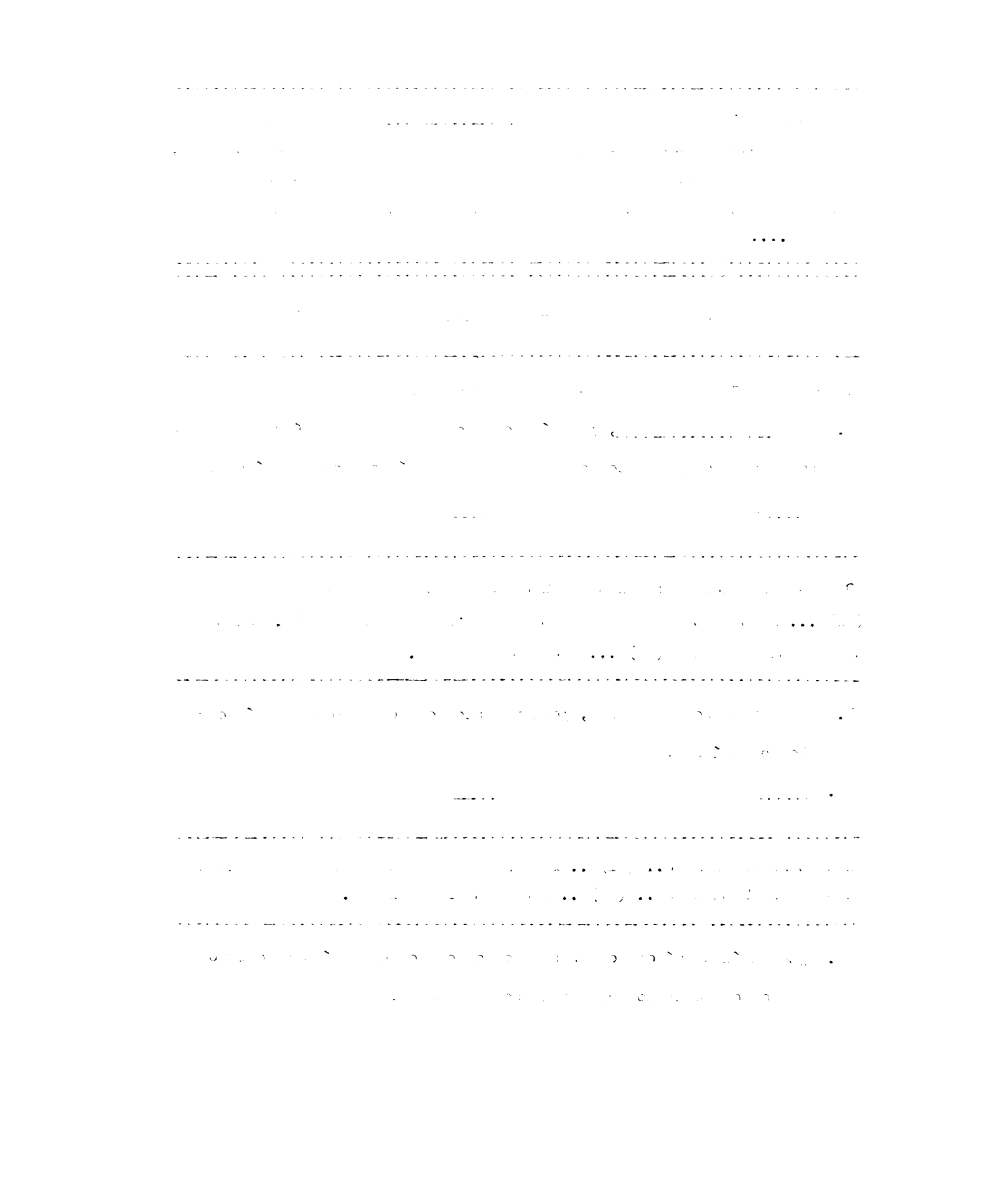
NOTA AL ENTREVISTADOR: SI LA CONTESTACION A LA PASADA PREGUNTA HA SIDO (SI) ... PROCEDA CON EL RESTO DE LAS PREGUNTAS DE ESTE BLOQUE. SI LA CONTESTACION HA SIDO (NO) ... PASE AL BLOQUE E.

17. Durante la semana pasada, ¿estuvo usted en contacto con algún empleado agrícola?

a. _____ SI _____ NO

SI LA CONTESTACION ES.. (SI) .. PREGUNTELE SOBRE LOS EMPLEADOS AGRICOLAS
SI LA CONTESTACION ES .. (NO) .. PASE A LA PREGUNTA C.

b. ¿Con cuál o cuáles de los siguientes empleados agrícolas estuvo usted en contacto durante la semana pasada?



Empleado Agrícola de:	Núm. Total de Contactos
1. Extensión Agrícola	
2. Administración Hogares de Agricultores (Fancy)	
3. Conservación de Suelos	
Número Total de Contactos Durante la Semana Pasada	

c. ¿Ha estado usted en contacto durante la semana antepasada con algún empleado agrícola?

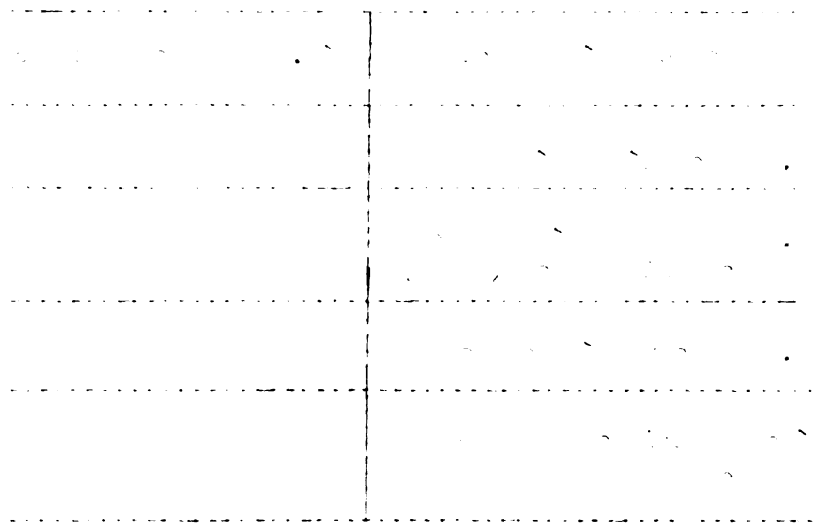
____ SI ____ NO

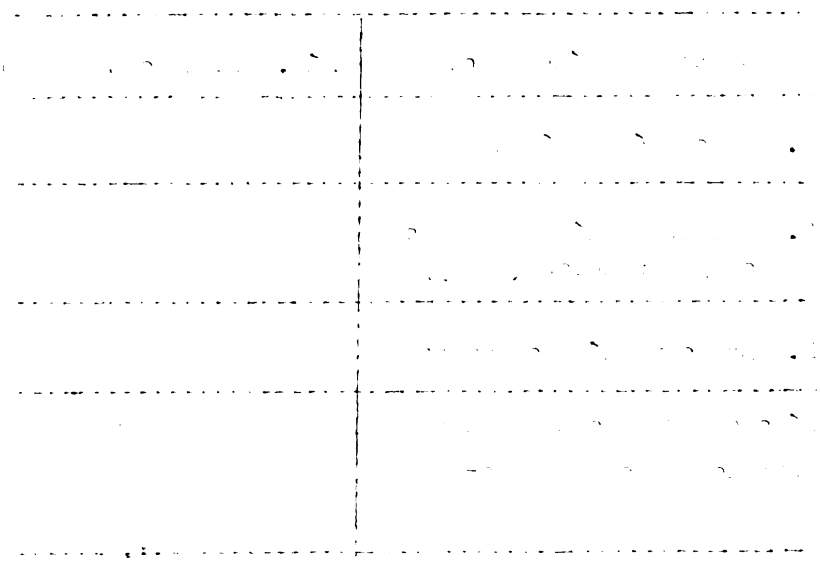
SI LA CONTESTACION ES ..... (SI) ..... PREGUNTELE ...

---

d. ¿Con quién o quienes de los siguientes empleados agrícolas estuvo usted en contacto durante la semana antepasada?

Empleado Agrícola de:	Núm. Total de Contactos
1. Extensión Agrícola	
2. Administración de Hogares de Agricultores (Fancy)	
3. Conservación de Suelos	
Número Total de Contactos Durante la Semana Ante-pasada	





e. Dígame Don _____, ¿estuvo usted en contacto con algún empleado agrícola hace tres semanas?

____ SI ____ NO

SI LA CONTESTACION ES ... (NO) ... PASE A LA PREGUNTA ... (G)

---

f. ¿Con quién o quienes de los siguientes empleados agrícolas estuvo usted en contacto hace tres semanas?

Empleado Agrícola de:	Núm. Total de Contactos
1. Extensión Agrícola	
2. Administración de Hogares de Agricultores (Fancy)	
3. Conservación de Suelos	
Número Total de Contactos Ultimas Tres Semanas	

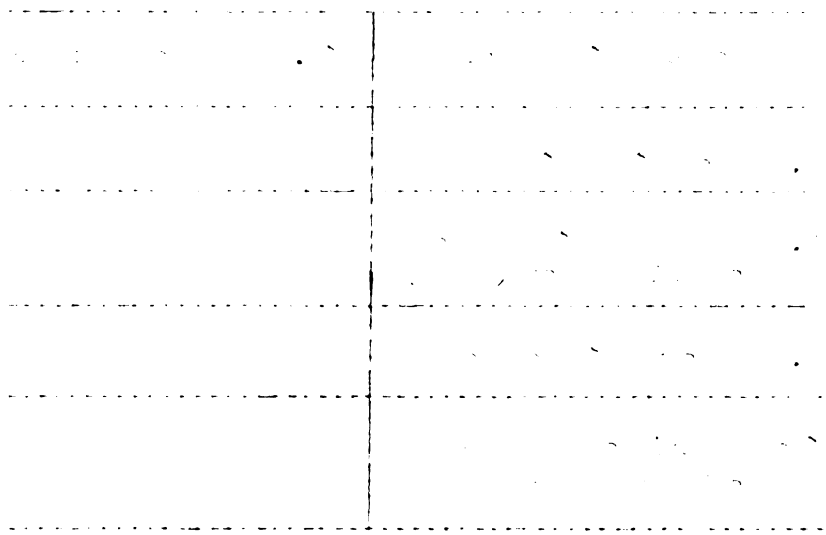
g. ¿Estuvo usted en contacto con algún empleado agrícola hace cuatro semanas?

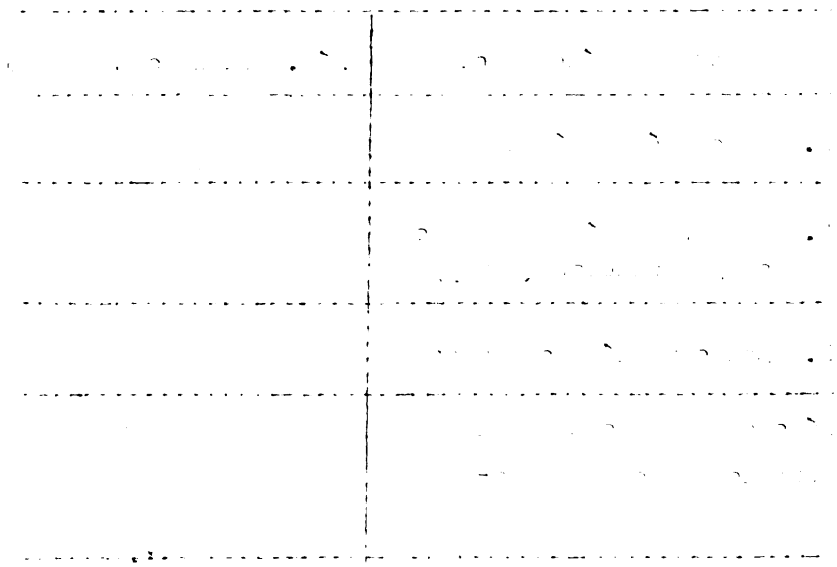
____ SI ____ NO

SI ..... (NO) ..... PASE AL BLOQUE E .....

---

h. ¿Con quién o quienes de los siguientes empleados agrícolas estuvo usted en contacto hace cuatro semanas?





e. Dígame Don _____, ¿estuvo usted en contacto con algún empleado agrícola hace tres semanas?

____ SI ____ NO

SI LA CONTESTACION ES ... (NO) ... PASE A LA PREGUNTA ... (G)

---

f. ¿Con quién o quienes de los siguientes empleados agrícolas estuvo usted en contacto hace tres semanas?

Empleado Agrícola de:	Núm. Total de Contactos
1. Extensión Agrícola	
2. Administración de Hogares de Agricultores (Fancy)	
3. Conservación de Suelos	
Número Total de Contactos Ultimas Tres Semanas	

g. ¿Estuvo usted en contacto con algún empleado agrícola hace cuatro semanas?

____ SI ____ NO

SI ..... (NO) ..... PASE AL BLOQUE E .....

---

h. ¿Con quién o quienes de los siguientes empleados agrícolas estuvo usted en contacto hace cuatro semanas?

Empleado Agrícola de:	Núm. Total de Contactos
1. Extensión Agrícola	
2. Administración de Hogares de Agricultores	
3. Conservación de Suelos	
Número Total de Contactos Durante las Ultimas Cuatro Semanas	

PREGUNTAS DEL BLOQUE E - ADOPCION

(SECCION E - PRACTICA UNA - PREGUNTAS DIECIOCHO A LA VEINTISEIS)

PRACTICA NUMERO - 1 ZANJAS AL CONTORNO O DE LADERA

18. ¿Ha visto, leído o escuchado usted alguna información sobre zanjas al contorno o de ladera?

____ SI ____ NO

19. ¿Cómo supo usted o cómo obtuvo información por primera vez sobre las zanjas al contorno?

___ TELEVISION ___ RADIO ___ PUBLICACION TECNICA

___ AGENTE AGRICOLA ___ AGRICULTOR ___ REVISTA AGRICOLA

___ PRENSA ___ OTRAS

20. ¿Ha hecho o usado usted alguna vez zanjas al contorno?

____ SI ____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA NUMERO (21). SI ES (NO) CONTINUE CON LA PRACTICA SIGUIENTE.

---

21. ¿Desde entonces, ha continuado usted usando esta práctica en su finca?

____ SI ____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA (22). SI ES (NO) CONTINUE CON LA PRACTICA SIGUIENTE.

---

22. ¿Hasta dónde la orientación de los empleados agrícolas influyó su decisión de usar las zanjas al contorno en su finca?

____ ¿MUCHO? ____ ¿ALGO?

____ ¿UN POCO? ____ ¿NADA?

23. ¿Quiénes son o han sido aquellas personas o medios de información que más han influído en usted para comenzar a usar zanjas al contorno en su finca?

____ EMPLEADO AGRICOLA ___ AGRICULTOR ____ VENDEDOR

____ PRENSA ___ TELEVISION ____ RADIO

___ OTROS

24. Después que usted tuvo conocimiento <u>por primera vez</u> sobre zanjas al contorno, ¿adoptó usted la práctica sin tomarse la molestia de buscar información adicional?

____ SI ____ NO

SI LA CONTESTACION ES (SI) PASE A LA PRACTICA SIGUIENTE. SI LA CONTESTACION ES (NO) PASE A LA PREGUNTA (25).

---

25. ¿Cuáles fueron las fuentes de información usadas por usted para buscar u obtener información adicional sobre las zanjas al contorno?

____ OTROS AGRICULTORES ____ EMPLEADOS AGRICOLAS

____ PRENSA, RADIO O TV ____ OTRAS

26. Después de obtener la información adicional que buscaba, ¿decidió usted adoptar las zanjas al contorno en su finca?

____ SI ____ NO

PRACTICA NUMERO - 2 USO DE CARBONATO CALIZO EN PLANTACION DE TABACO

(SECCION E - PRACTICA DOS - PREGUNTAS VEINTISIETE A LA TREINTA Y CINCO)

27. ¿Ha visto, leído o escuchado usted alguna información sobre el uso de carbonato calizo o cal en la plantación de tabaco?

____ SI ____ NO

28. ¿Cómo supo usted o cómo obtuvo información por primera vez sobre el uso de carbonato calizo o cal en la plantación de tabaco?

____ TELEVISION ____ REVISTA AGRICOLA

____ AGENTE AGRICOLA ____ RADIO

____ PUBLICACION TECNICA ____ AGRICULTOR

____ PRENSA ____ OTRAS

29. ¿Ha usado usted alguna vez carbonato calizo en la plantación de tabaco?

____ SI ____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA NUMERO (30). SI ES (NO) CONTINUE CON LA PRACTICA SIGUIENTE.

---

30. ¿Desde entonces, ha continuado usted usando esta práctica en su

____ SI ____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA (31). SI LA CONTESTACION ES (NO) PASE A LA PROXIMA PRACTICA.

---

31. ¿Hasta dónde la orientación de los empleados agrícolas influyó su decisión de usar carbonato calizo o cal en la plantación de tabaco?

____¿MUCHO? ____¿ALGO?

____¿UN POCO? ____¿NADA?

32. ¿Quiénes son o han sido aquellas personas o medios de información que más han influído en usted para comenzar a usar carbonato calizo en la plantación de tabaco?

_____ EMPLEADO AGRICOLA _____ TELEVISION

_____ AGRICULTOR _____ RADIO

_____ VENDEDOR _____ PRENSA

_____ OTROS

33. Después que usted tuvo conocimiento por primera vez sobre el uso de carbonato calizo o cal, ¿adoptó usted la práctica sin tomarse la molestia de buscar información adicional?

____ SI ____ NO

SI LA CONTESTACION ES (SI) PASE A LA PRACTICA SIGUIENTE. SI LA CONTESTACION ES (NO) PASE A LA PREGUNTA NUMERO (34).

---

34. ¿Cuáles fueron las fuentes de información usadas por usted para buscar u obtener información adicional sobre el uso de carbonato calizo en la plantación de tabaco?

____ OTROS AGRICULTORES
____ EMPLEADOS AGRICOLAS
____ PRENSA, RADIO O TV
____ OTRAS

35. Después de obtener la información adicional que buscaba, ¿decidió usted adoptar el uso de carbonato calizo o cal en la producción de tabaco en su finca?

____ SI
____ NO

PRACTICA NUMERO - 3 USO DEL INSECTICIDA PARACION O VAPOPHOS EN LA PLANTACION DE TABACO

(SECCION E - PRACTICA TRES - PREGUNTAS TREINTA Y SEIS A LA CUARENTA Y CUATRO)

36. ¿Ha visto, leído o escuchado usted alguna información sobre el uso del insecticida Vapophos en la plantación de tabaco?

____ SI
____ NO

37. ¿Cómo supo usted o cómo obtuvo información por primera vez sobre el uso del insecticida Vapophos en la plantación de tabaco?

____ TELEVISION
____ RADIO
____ PUBLICACION TECNICA
____ AGENTE AGRICOLA
____ AGRICULTOR
____ REVISTA AGRICOLA
____ PRENSA
____ OTRAS

38. ¿Ha usado alguna vez el insecticida Vapophos en la plantación de tabaco?

_____ SI
_____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA NUMERO (39). SI ES (NO) CONTINUE CON LAS PREGUNTAS DEL BLOQUE F.

---

39. Desde entonces, ¿ha continuado usted usando esta práctica en su finca?

____ SI ____ NO

SI LA CONTESTACION A LA PREGUNTA ES (SI) PASE A LA PREGUNTA (40). SI LA CONTESTACION ES (NO) CONTINUE CON LAS PREGUNTAS DEL BLOQUE F.

---

40. ¿Hasta dónde la orientación de los empleados agrícolas influyó su decisión de comenzar a usar el insecticida Vapophos en la plantación de tabaco?

____ ¿MUCHO? ____ ¿ALGO?

____ ¿UN POCO? ____ ¿NADA?

41. ¿Quiénes son o han sido aquellas personas o medios de información que más han influído en usted para comenzar a usar insecticida Vapophos en la plantación de tabaco?

____ EMPLEADO AGRICOLA ____ TELEVISION

____ AGRICULTOR ____ RADIO

____ VENDEDOR ____ OTROS

____ PRENSA

42. ¿Después que usted tuvo conocimiento <u>por primera vez</u> sobre el uso del insecticida Vapophos en la plantación de tabaco, adoptó usted la práctica sin tomarse la molestia de buscar información adicional?

____ SI ____ NO

SI LA CONTESTACION ES (SI) PASE A LAS PREGUNTAS DEL BLOQUE F. SI LA CONTESTACION ES (NO) PASE A LA PREGUNTA NUMERO (43).

---

43. ¿Cuáles fueron las fuentes de información usadas por usted para buscar u obtener información adicional sobre el uso del insecticida Vapophos en la plantación de tabaco?

____ OTROS AGRICULTORES ____ PRENSA, RADIO Y TV

____ EMPLEADOS AGRICOLAS ____ OTRAS

44. ¿Después de obtener la información adicional que buscaba, decidió usted adoptar el uso del insecticida Vapophos en la plantación de tabaco en su finca?

____ SI ____ NO

FECHA DE LA ENTREVISTA

NOMBRE DEL ENTREVISTADOR

NUMERO

MUNICIPALIDAD DONDE VIVE

NUMERO DEL AGRICULTOR

BARRIO DONDE VIVE

SEXO ( ) M ( ) F

PREGUNTAS DEL BLOQUE F - CARACTERISTICAS DEL AGRICULTOR

(SECCION F - PREGUNTAS CUARENTA Y CINCO A LA CINCUENTA Y SIETE)

ENTREVISTADOR: AHORA PASAMOS A LA ULTIMA PARTE DE NUESTRA ENTREVISTA PUES QUEREMOS SABER ALGO DE SU PERSONA.

45. ¿Cuál es el tamaño actual de su familia...incluyéndolo a usted, su esposa, hijos que vivan con usted o cualquier otro familiar que viva en su casa actualmente?

NUMERO TOTAL DE PERSONAS VIVIENDO EN LA CASA

___ 3	___ 7	___11	___15
___ 4	___ 8	___12	___16
___ 5	___ 9	___13	___17
___ 6	___10	___14	___18 ó más

46. ¿Cuántos años tiene usted?

(____) EDAD EN AÑOS

47. ¿Cuál es su estado marital actual?

( ) CASADO ( ) SOLTERO ( ) VIUDO ( ) OTRO

48. ¿Tiene usted alguna preparación escolar? (o sea...) ¿Ha asistido usted a la escuela alguna vez?

____ SI ____ NO

ENTREVISTADOR: SI NO HA ASISTIDO A LA ESCUELA NUNCA...PASE POR ALTO LA PREGUNTA (49) Y PROCEDA CON LA PREGUNTA NUMERO (50).

---

49. ¿Hasta qué grado estuvo usted en la escuela?

(HAGA UN CIRCULO EN EL NUMERO CORRESPONDIENTE SEGUN LA RESPUESTA) DEL AGRICULTOR ENTREVISTADO)

a. ESCUELA ELEMENTAL	1	2	3	4	5	6	7	8
b. ESCUELA SUPERIOR	1	2	3	4				
c. AÑOS DE COLEGIO O UNIVERSIDAD	1	2	3	4				

50. ¿Cuántas cuerdas de terreno está usando en la actualidad para la explotación agrícola?

(_____) (INCLUYA TANTO EL TERRENO PROPIEDAD COMO EL ARRENDADO)

51. ¿Cuál es el monto de su cuota de tabaco? (QUINTALES)

(_____)

52. ¿Obtiene usted todos sus ingresos económicos del tabaco únicamente?

____ SI ____ NO

53. ¿Cuántas cuerdas dedica a la producción de tabaco únicamente?

(_____)

54. ¿Cuántos quintales de tabaco produce anualmente?

(_____)

55. ¿Qué persona o entidad le compra su cosecha de tabaco?

(_____)

56. Queremos saber ahora su experiencia como agricultor. Esto es, ¿cuántos años lleva usted produciendo tabaco?

(MARQUE UNA SOLA CONTESTACION)

a. ___ MENOS DE CINCO AÑOS

b. ___ CINCO AÑOS COMPLETOS

c. ___ MAS DE CINCO AÑOS PERO MENOS DE 10 AÑOS

d. ___ DIEZ AÑOS COMPLETOS

e. ___ MAS DE DIEZ AÑOS PERO MENOS DE QUINCE AÑOS

f. ___ ALREDEDOR DE QUINCE AÑOS

g. ___ ALREDEDOR DE VEINTE AÑOS

h. ___ MAS DE VEINTE AÑOS ___ (SI MAS DE 20 AÑOS, INDIQUE CUANTOS)

(LA SIGUIENTE ES LA ULTIMA PREGUNTA DE NUESTRA ENTREVISTA)

57. ¿Qué hace usted cuando obtiene alguna información de la radio, televisión o prensa?

a. ___ CONSULTO CON OTRO AGRICULTOR O VECINO SOBRE ESTA INFORMACION

b. ___ CONSULTO CON EL AGENTE AGRICOLA

c. ___ CONSULTO UNA PUBLICACION DE EXTENSION

d. ___ ESCRIBO PIDIENDO INFORMACION ADICIONAL

e. ___ OTRAS (POR FAVOR EXPLIQUE)

_____

_____

_____

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