Fertilizers

FERTILIZER MARKETING REPORT

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ONTARIO FARMERS' BEHAVIOR AND PREFERENCES IN PURCHASING FERTILIZERS

Thomas F. Funk and Marinus Van Dijk

School of Agricultural Economics
and
Extension Education

Ontario Agricultural College
University of Guelph

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Thomas F. Funk and Marinus Van Dijk

School of Agricultural Economics and Extension Education
Ontario Agricultural College

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FOREWORD

This is the third in a series of five dealing with fertilizer marketing in Ontario. The titles of all the reports in the series are:

(1) Farmer Attitudes Toward Fertilizer and Fertilizer Purchasing.

(2) Use of Fertilizer Products and Services by Ontario Farmers.

(3) Ontario Farmers' Behaviour and Preferences in Purchasing Fertilizers.

(4) Importance - Performance Analysis for Fertilizer Dealers.

(5) A Comparison of Fertilizer Purchasing and Use in Ontario and Indiana.

This report was made possible with the cooperation and assistance of many people and organizations. Major funding for the research was provided through the contract research funding of the Ontario Ministry of Agriculture and Food. In addition, generous contributions were received from the following Ontario fertilizer companies: C.I.L., Cyanamid Canada Inc., Genstar, W.G.Thompson and Sons, St.Clair Grain and Feed, Kent County Fertilizers, Burford Fertilizers, and King Grain Ltd.

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Thomas F. Funk.
Marinus Van Dijk.

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1.0 INTRODUCTION

Recent agricultural statistics estimate that Ontario farmers spend in excess of $150 million annually on fertilizers for various crops. In terms of total farm operating expenses, the expenditure on fertilizer is exceeded only by wages, machinery, and purchased feeds. Thus the fertilizer purchase represents a major cost component for most Ontario farmers, and, as a result, has supported the development of an important industry to supply fertilizer products and services to farmers.

The objective of the research reported in this paper, and others in the series, is to develop information to assist fertilizer manufacturers and dealers develop effective marketing programs to serve the farm market. The study, therefore, focuses on the fertilizer product/service needs, buying behaviour, attitudes, and preferences of farmers, and the manner in which this information can be used to develop product, price, promotion, and distribution policies for manufacturers and dealers. In addition, attention is given to identifying and evaluating segments in the fertilizer market, and variations in marketing programs for each segment.

1.1 Objectives and Scope

The objective of this report is to discuss the results of the study as they pertain to the behaviour and preferences of different target groups of farmers in purchasing and using fertilizer products and services. This involves a consideration of the following major topics: (1) shopping behaviour, (2) use and evaluation of information sources, (3) fertilizer pricing, (4) dealer patronage, (5) product line, (6) dealer services, and (7) basic farmer attitudes.

1.2 Research Design

The methodology used in this research is described in detail in the first report in this series. This section summarizes the important features of the research design.

The data for this study was obtained through a survey of Southwestern Ontario farmers. The field work was conducted in June of 1979 using a structured questionnaire administered by undergraduate agricultural students from the University of Guelph.

The sample consisted of 200 farmers from four Southwestern Ontario counties: Wellington, Kent, Oxford, and Huron. These counties were selected to represent the major types of agriculture in the Province. Within each county the population of interest was defined as all farmers who purchased some fertilizer and grew at least 100 acres of crops in 1979. These farmers were then stratified into acreage groups and names randomly selected for interviews. The acreage categories, and the percentage of farmers in each category are: 100 to 200 acres, 40 percent; 201 to 400 acres, 35 percent; and over 400 acres, 25 percent.

TABLE 1.1

SAMPLE PROFILE, ONTARIO, 1979

Characteristics	Percent of Farmers	Characteristics	Percent of Farmers
Size of Purchase[1]		Farm Type[2]	
Under 25 tons	30	Cash Crop	21
26-50 tons	38	Livestock	28
51-100 tons	17	Mixed	51
Over 100 tons	15		
Total Acres		Age	
100-200 acres	41	Under 35	32
200-400 acres	36	35-44	25
Over 400 acres	23	45-54	31
		Over 55	12
Gross Income		County	
Less than $50,000	17	Wellington	25
$50,000-$100,000	27	Kent	25
$100,000-$200,000	32	Oxford	25
Over $200,000	23	Huron	25

[1] All purchase quantities are reported in metric tons.

[2] Farmers were placed into farm type categories based on the percentage of gross income derived from different enterprises. Cash crop farmers were those who reported 100 percent of their gross income from the sale of various crops; livestock farmers were those who reported 100 percent of their gross income from the sale of livestock; mixed farmers were those who reported some income from the sale of crops and some from the sale of livestock.

1.3 Segmentation Analysis

One of the principal objectives of this research is to see how fertilizer purchasing behaviour and preferences vary from one target group of farmers to another. The segments used in the analysis were formed on the basis of size of purchase, farm size (acres and gross income), farm type, age of the farmer, and location (county). Table 1.1 shows the categories, and the percentages of farmers in each category, for the six segmentation variables.

2.0 SURVEY RESULTS

This section presents the survey results related to the behaviour and preferences of farmers in purchasing fertilizer products and services. Included is a discussion of (1) shopping activities, (2) information sources, (3) fertilizer pricing, (4) dealer patronage, (5) product line, (6) fertiliizer services, and (7) farmer attitudes. In addition to presenting the results for all farmers, this section also discusses differences in the above areas related to (1) size of purchase, (2) total acres, (3) gross income, (4) farm type, (5) age, and (6) county. The final section of the report summarizes the major findings and discusses their implications for the development of effective marketing programs for specific segments of the Ontario fertilizer market.

2.1 Shopping Activities

The first area of fertilizer purchasing behaviour explored was the use of shopping activities by Ontario farmers. In considering this area, the potential shopping activities were divided into four groups: those related to (1) discussing the fertilizer program with various influence groups, (2) attending fertilizer related events, (3) reading fertilizer related publications, and (4) contacting fertilizer dealers. Results as they apply to each of these types of activities are discussed below.

2.1.1 Discussions With Influence Groups

In the course of a year, farmers discuss their fertilizer program with a number of parties in order to obtain information and advice on various aspects of fertilizer use and dealer selection. Figure 2.1 lists the influence groups considered in this research and the extent to which they were consulted by farmers in 1979 for information and advice regarding fertilizers. The results in this figure clearly show that the local fertilizer dealer, other farmers, and members of the family are by far the most widely used influence groups. In each case, over 60 percent of the farmers responded that they discussed their fertilizer program at least once with these parties. Of considerably less importance were representatives of fertilizer manufacturers, and agricultural representatives and/or other extension personnel, and University scientists. Between ten and twenty percent of the farmers reported discussions with these groups in 1979. Finally, of very little overall importance were independent fertilizer custom applicators and independent agronomists. Only a few farmers reported discussions with these people in 1979.

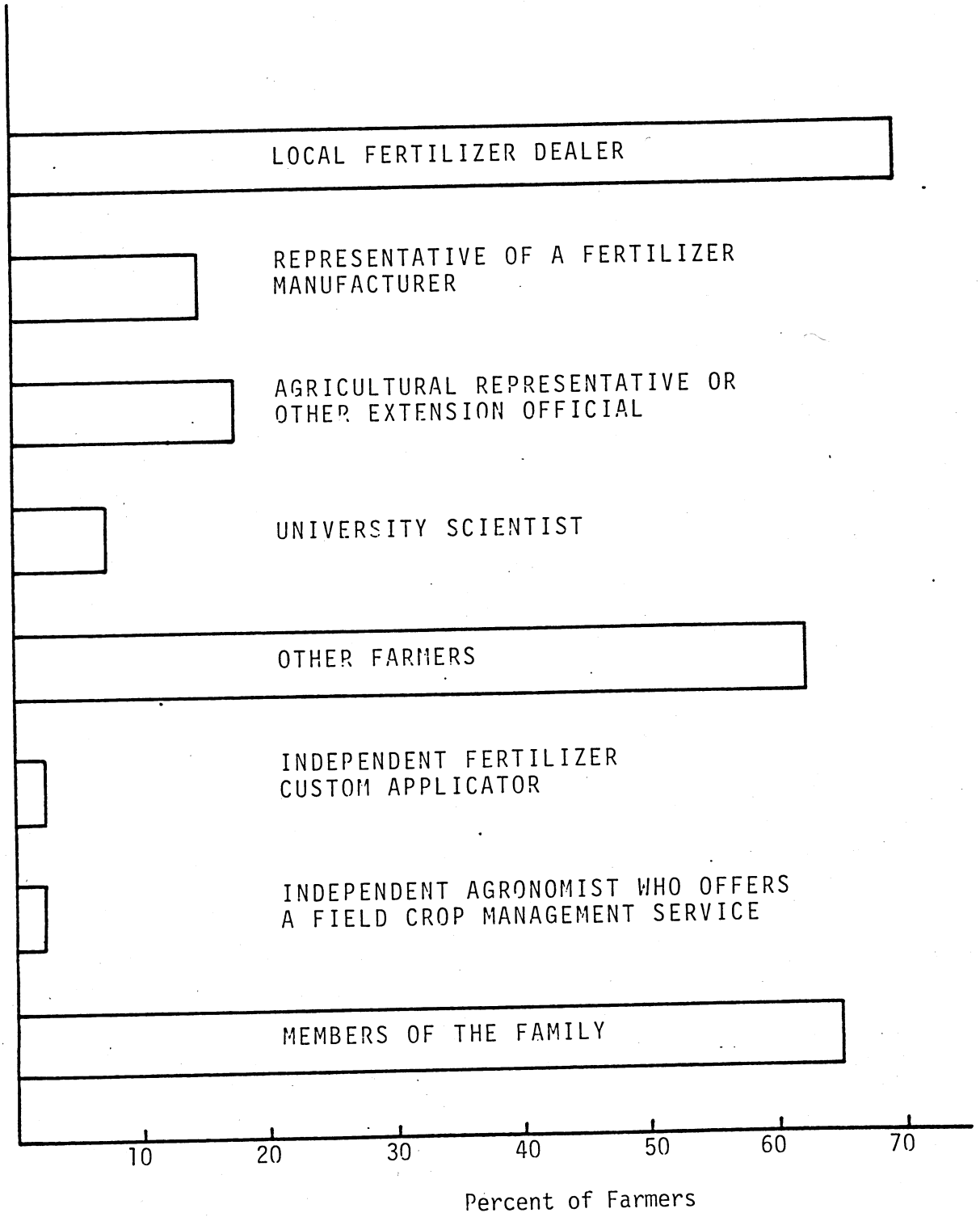

FIGURE 2.1

EXTENT TO WHICH FARMERS DISCUSS THEIR FERTILIZER PROGRAM, ONTARIO, 1979

TABLE 2.1

FARMER DIFFERENCES IN FERTILIZER DISCUSSIONS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Local Fertilizer Dealer	70%	** 26-50 51-100 Over 100		** 50-100 100-200 Over 200	* Cash Crop Livestock	* Under 34 35-44	*** Oxford
Representative of a Fertilizer Manufacturer	15%	*** 51-100 Over 100	*** Over 400	50-100** 100-200 Over 200			
Agricultural Representative or other Extension Official	18%		* 200-400 Over 400		* Cash Crop Mixed		
University Scientist	8%			* Over 200			
Other Farmers	62%				** Cash Crop		*** Kent Oxford
Independent Fertilizer Custom Applicators	1%						
Independent Agronomists who offer a Field Crop Management Service	1%						
Members of the Family	65%	* Over 100	* Over 400			** Under 34	** Kent Oxford

Table 2.1 shows the types of farmers likely to seek information and advice from the influence groups listed in Figure 2.1.[1] The important results in this table are: (1) all farmers except those who purchase very small amounts of fertilizer and those in the older age categories tend to discuss their fertilizer programs with local dealers; (2) farmers who purchase relatively large quantities of fertilizer and operate large farming units are the most likely to have contact with fertilizer company representatives; (3) high gross income farmers are the most likely to visit university scientists to discuss fertilizer programs; and (4) younger, large farmers tend to discuss fertilizer programs more with other family members than other types of farmers.

2.1.2 Attending Events and Reading Publications

In addition to seeking information and advice from other parties, farmers also can attend fertilizer related events and read fertilizer related publications. The results in Figure 2.2 show that attending farmer meetings and visiting fertilizer company or dealer displays at farm shows and fairs are popular activities for many farmers. Attending demonstrations or demonstration plots sponsored by fertilizer companies or dealers, government research stations, or universities are much less popular activities. With regard to reading publications, the results show that 70 percent of the sample farmers read Publication 296 (Field Crop Recommendations) prior to making their fertilizer use decision in 1979.

Table 2.2 shows important differences among farmers in the extent to which they attend meetings or demonstrations and read publications. The important results in this table are: (1) larger gross income farmers have a greater tendency to attend farmer meetings than other farmers; (2) farmers who purchase large quantities of fertilizer and operate large farming units are most likely to attend fertilizer company or dealer demonstrations; (3) large, cash crop farmers are the most likely to attend demonstrations or demonstration plots at

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[1] Table 2.1 and others like it in the remainder of this report are set up to summarize a substantial amount of information in a small amount of space. Each of these tables list the variables of interest in the left hand column and the segmentation variables in the top row. The second column headed "all farmers" gives the level of the variable for the total sample. The remaining columns show the type of farmer for which the level of the variable is significantly higher. The level of significance is given by the asterisks in each cell. One asterisk indicates a ten percent level of significance; two asterisks a five percent level of significance; and three asterisks a one percent level of significance. To illustrate the interpretation of these tables, consider the first row in Table 2.1. The information in this row shows that 70 percent of all farmers in the sample discussed their fertilizer program in 1979 with a fertilizer dealer. Higher percentages of farmers in the medium and large size of purchase categories, medium and large gross income categories, cash crop and livestock groups, younger age categories, and farmers in Oxford county, discussed their fertilizer program with a dealer in 1979. By implication, lower percentages of farmers in the small size of purchase and gross income categories, mixed farming group, older age categories, and farmers in Kent, Oxford, and Huron counties discussed their fertilizer program with a dealer in 1979. There were no significant differences among acreage categories in the proportion of farmers discussing their fertilizer program with dealers.

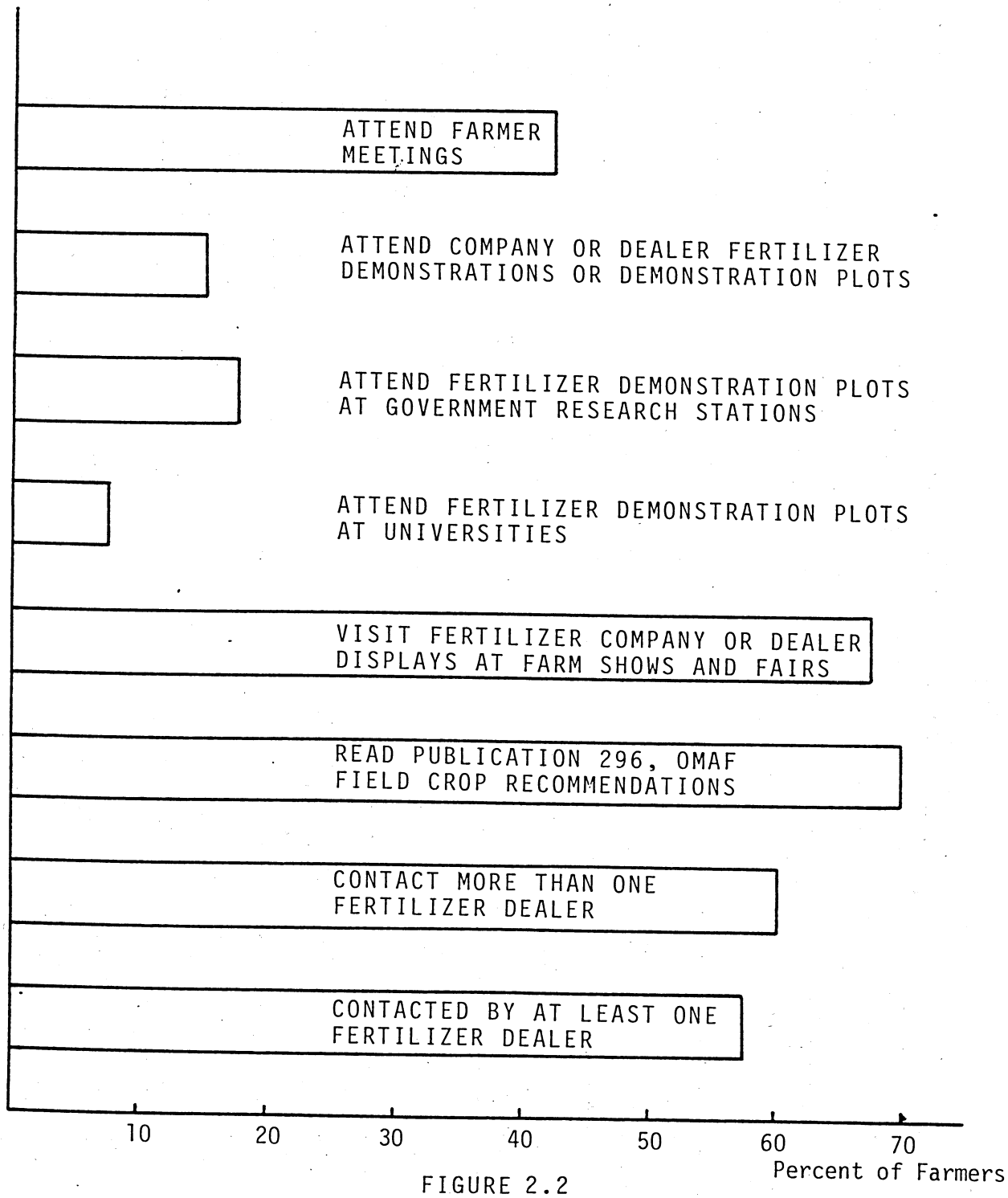

FIGURE 2.2

EXTENT TO WHICH FARMERS ATTEND FERTILIZER RELATED EVENTS, READ PUBLICATIONS, AND CONTACT DEALERS, ONTARIO, 1979

TABLE 2.2

FARMER DIFFERENCES IN ATTENDING FERTILIZER RELATED EVENTS, READING PUBLICATIONS, AND CONTRACTING DEALERS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Attend Farmer Meetings	42%			** Over 200			*** Oxford
Attend company or dealer fertilizer demonstrations or demonstration plots	15%	* Over 100		* Over 200			
Attend fertilizer demonstration plots at government research stations	18%			* 50-100 100-200	*** Cash crop		** Kent Huron
Attend fertilizer demonstration plots at Universities	8%						** Wellington
Visit fertilizer displays at farm shows and fairs	68%		* Over 400				* Huron
Read Publication 296, OMAF Field Crop Recommendations	70%			** 50-100 100-200 over 200	** Cash crop	Under 35 35-44 45-54	** Wellington
Number of dealers farmer contacted prior to purchase	2.1 DEALERS	** Over 100	* Over 400	* Over 200		** Under 35	
Number of dealers contacting farmer prior to purchase	1.2 DEALERS	*** Over 100	*** Over 400	*** Over 200	* Livestock mixed	** Under 35	

government research stations; and (4) medium to large cash crop farmers, and farmers in the young to middle age categories tend to read Publication 296 more than farmers with other characteristics.

2.1.3 Dealer Contacts

The final shopping activity considered is contacting fertilizer dealers prior to purchase. The distribution in Figure 2.3 shows that over 90 percent of the farmers contacted one or more dealers prior to placing a fertilizer order in 1979. Of those farmers who did contact dealers in 1979, over 30 percent contacted only one dealer while forty percent contacted two or three dealers and slightly over 10 percent contacted four or more dealers.

The number of dealers contacted varied considerably by farm and farmer characteristics as shown in Figure 2.4. The results here reveal that farmers who purchase larger quantities of fertilizer, operate larger farming units, and fall into the younger age categories contact significantly more dealers than other types of farmers.

The information in Figure 2.4 supports the fact that most dealer contacts are initiated by farmers and not fertilizer dealers. This information shows that over 40 percent of the farmers were not contacted by any dealer in 1979, while 40 percent were contacted by one or two dealers, and approximately 20 percent by three or more dealers. As in the case of farmers contacting dealers, the data in Figure 2.6 reveals even a more pronounced tendency for larger and younger farmers to receive dealer calls.

2.2 Information Sources

The previous section presented resutls showing the extent to which farmers obtain advice and information from various sources. This section discusses farmers' evaulation of the importance of these sources in providing information regarding fertilizer application, the proper type of fertilizer application, the proper type of fertilizer for specific areas and soil types, technical problems in using fertilizers, and dealer selection. The two broad types of information sources considered are commercial and non-commercial sources.

Table 2.3 lists the commercial and non-commercial sources used and the percentages of farmers rating each source as "most important" and "important" for the four types of information. For ease of interpretation, the most frequently cited sources for each type of information are shown graphically in Figure 2.7.

The most striking feature of Figure 2.7 is the importance attached to the fertilizer dealer in providing all types of information to farmers. In all four areas, the fertilizer dealer ranks as one of the more important information sources; and in the case of providing information to solve technical problems, the fertilizer dealer is by far the most important source. Other sources were found to be important for providing specific types of information. For instance,

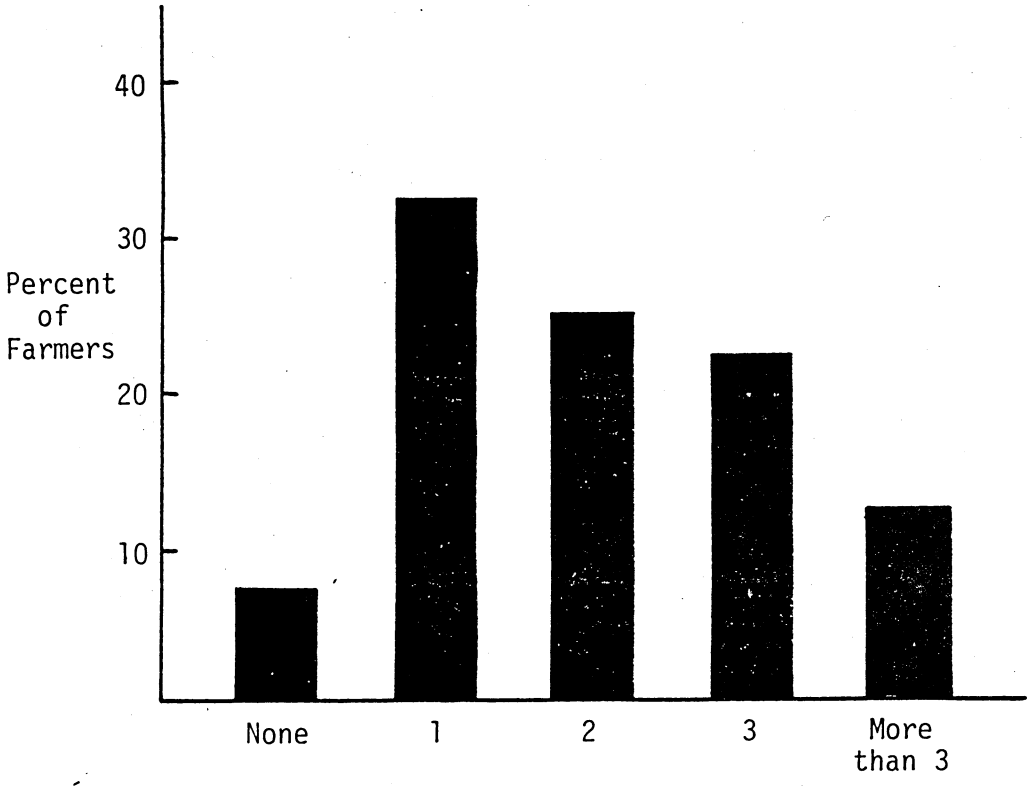

FIGURE 2.3

NUMBER OF DEALERS FARMER CONTACTED
PRIOR TO PURCHASE,ONTARIO,1979

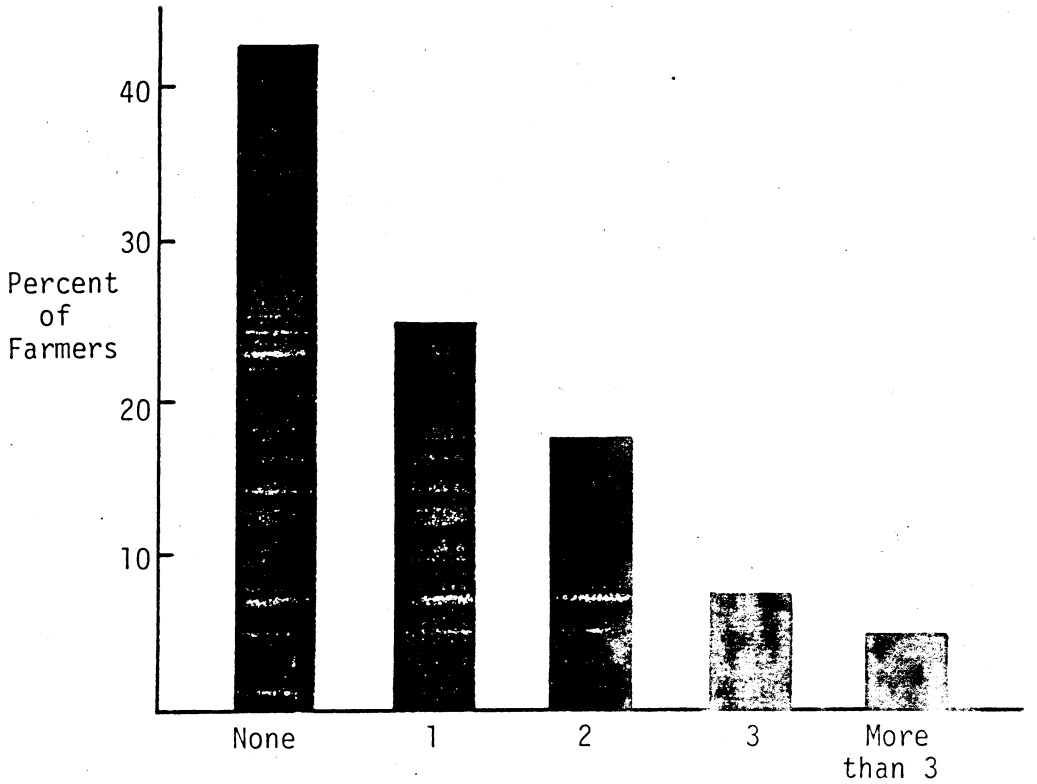

FIGURE 2.4

NUMBER OF DEALERS CONTACTING FARMERS
PRIOR TO PURCHASE, ONTARIO, 1979

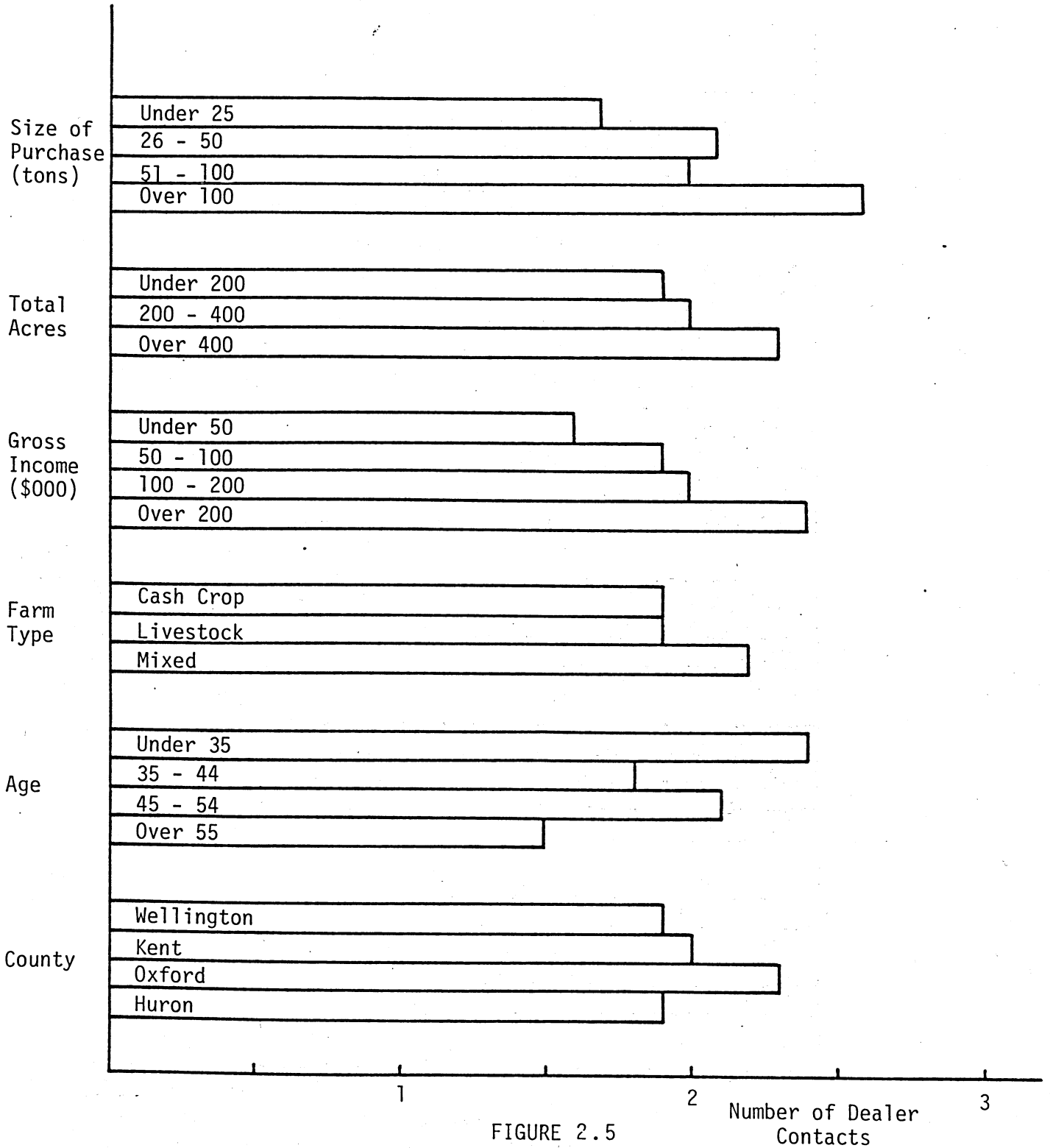

FIGURE 2.5

NUMBER OF DEALERS FARMERS CONTACTED PRIOR TO PURCHASE, BY FARM CHARACTERISTICS

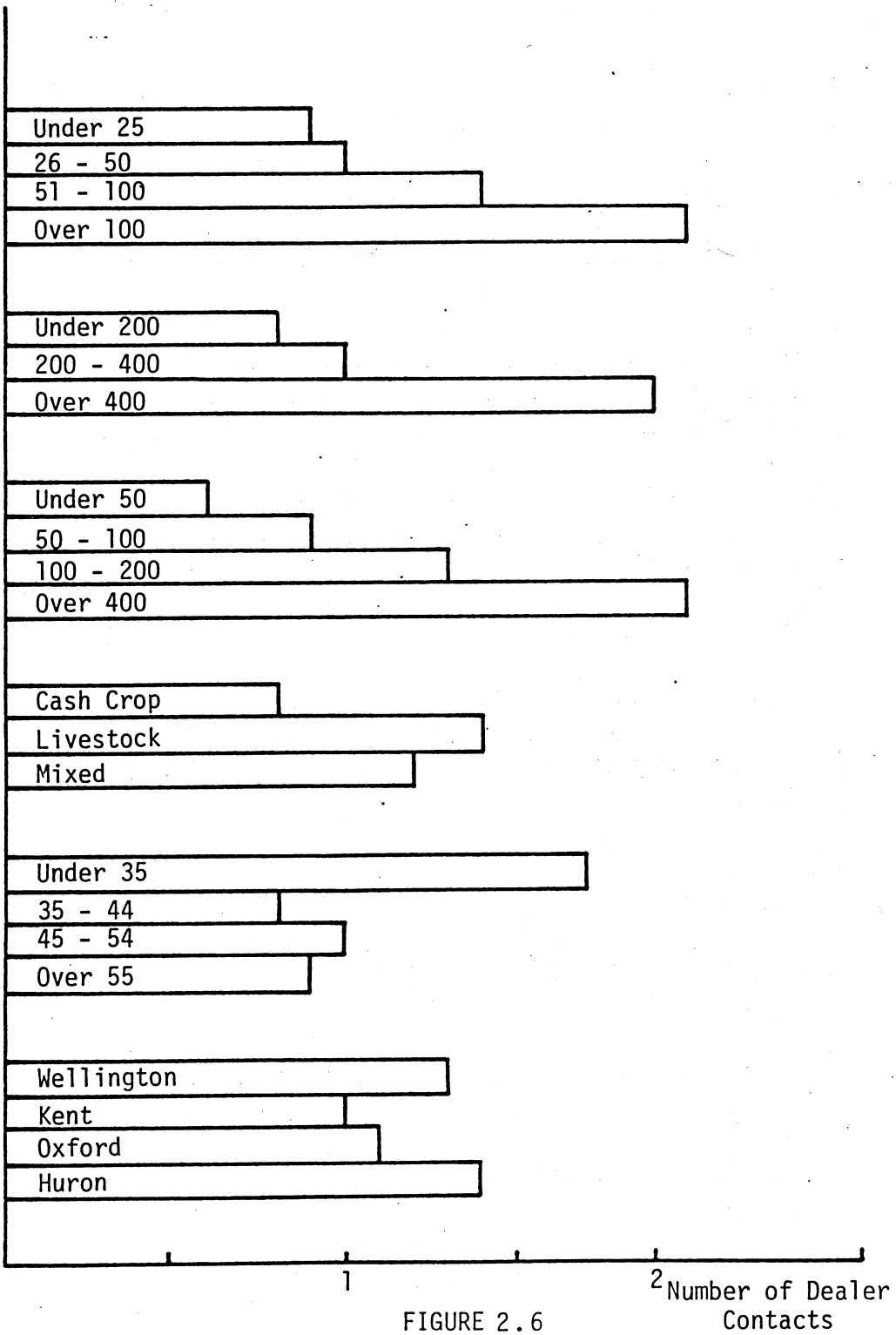

FIGURE 2.6

NUMBER OF DEALERS CONTACTING FARMERS PRIOR TO PURCHASE BY FARM CHARACTERISTICS, ONTARIO, 1979

TABLE 2.3

FARMER EVALUATION OF INFORMATION SOURCES, ONTARIO, 1979

Information Source	Percentage of Farmers Citing Use of Source for Obtaining Information on							
	Fertilizer Application		Proper Fertilizer		Technical Problems		Selecting Dealer	
	Most Important	Total Mention	Most Important	Total Mention	Most Important	Total Mention	Most Important	Total Mention
Commercial Sources								
Fertilizer Company Representatives	3	9	2	5	7	13	5	9
Fertilizer Dealer	18	44	14	30	69	76	25	33
Farmer Meetings	4	18	2	7	--	1	2	8
Farm Magazine Ads	1	8	2	3	--	--	4	7
Company Information	2	6	--	3	1	2	2	3
Demonstrations	2	8	1	5	--	--	--	--
Farm Shows	2	9	1	2	2	3	1	3
	32		22		79		39	
Non-Commercial Sources								
Other Farmers	11	41	9	22	1	3	49	57
Extension Agents	3	11	3	7	8	13	4	5
Farm Magazine Articles	5	24	2	7	--	--	2	4
Government/University Research Stations	6	27	3	12	6	10	--	2
Government/University Publications	13	44	14	23	2	3	--	1
Soil Tests	28	49	48	61	2	3	2	3
Independent Agronomists	--	--	--	2	2	4	2	3
Custom Applicators	1	2	--	1	--	--	--	--
	68		78		21		61	

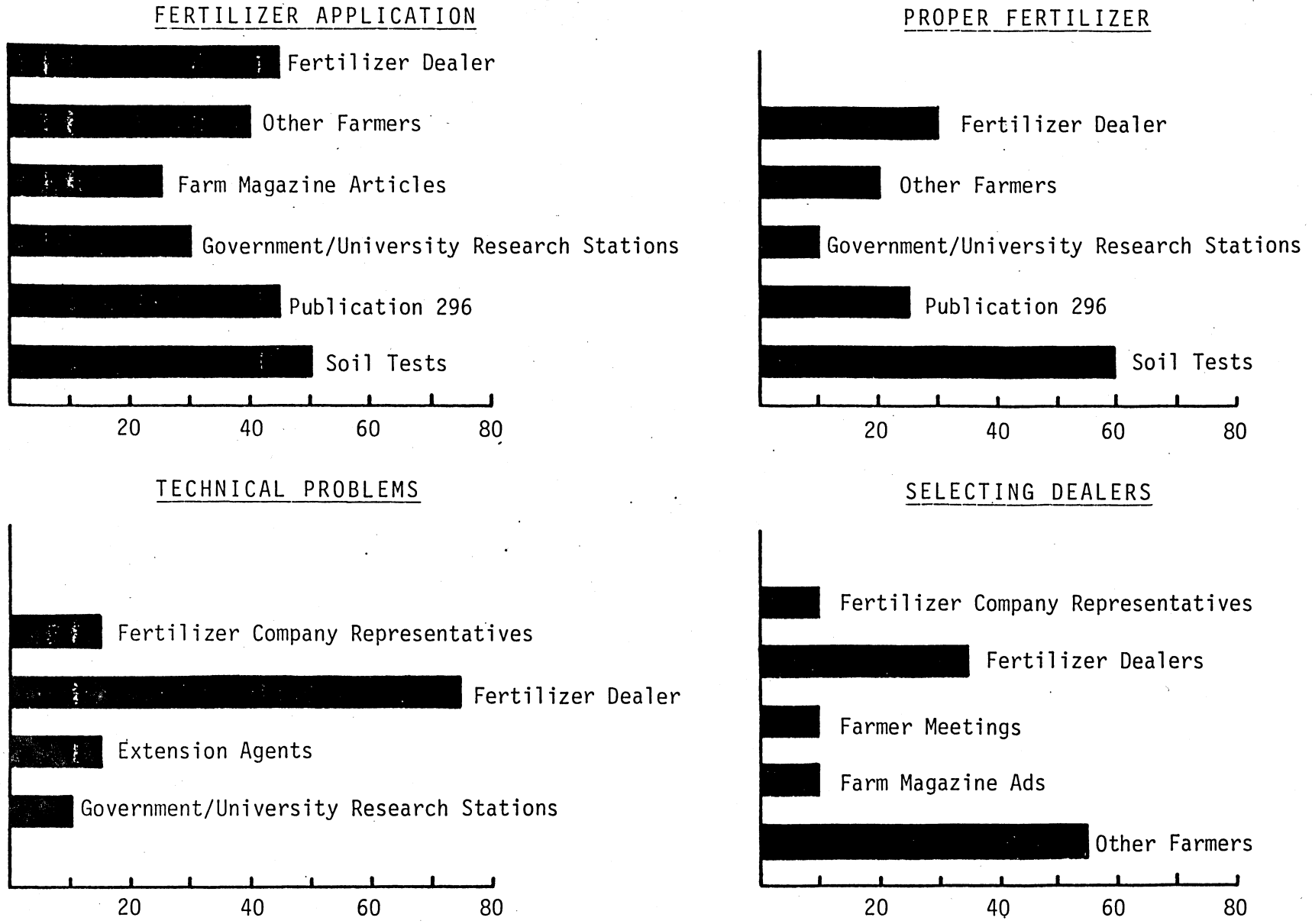

FIGURE 2.7

FARMER EVALUATION OF INFORMATION SOURCES, ONTARIO, 1979

TABLE 2.4
FARMER DIFFERENCES IN THE EVALUATION OF
INFORMATION SOURCES, ONTARIO, 1979

INFORMATION SOURCE	SIZE OF PURCHASE (TONS)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
FERTILIZER APPLICATION						
Other Farmers		Under 200 over 400				
Ferilizer Dealer		200-400 over 400				
Publication 296		200-400 over 400				Huron
Soil Tests		Under 200				All others
PROPER FERTILIZER						
Other Farmers	Under 25 over 100					
Fertilizer Dealer	Over 100					
Publication 296	51-100 over 100					Huron
Soil Tests	25-50 51-100					All others
TECHNICAL PROBLEMS						
Company Rep				Livestock	Under 35	
Fertilizer Dealer					over 35	All others
Extension Agents						Huron
Government/Univ						
SELECTING DEALER						
Company Rep	Over 100	Over 400	Over 200	Livestock		
Other Farmers	Under 25 26-50	Under 200 200-400	Under 50 50-100			Huron
Fertilizer Dealer	Over 100		100-200	Cash Crop		All others
Farmer meetings	51-100		Over 200			
Farm Mag Ads	51-100		Over 200			

in the case of fertilizer application, other farmers, Publication 296, and soil tests were judged to be of considerable importance while soil tests were by far the most important for providing information on the proper fertilizer to use for specific areas, and other farmers were found to be the most important for providing information to aid in dealer selection. It is interesting to note that fertilizer company representatives were considered important sources of information by only a small proportion of farmers and particularly in the area of solving technical problems. It is also interesting to observe that in the dealer selection area, all of the important information sources are under the control of fertilizer dealers or suppliers except the word-of-mouth communications among farmers.

Table 2.4 presents the summary results concerning farmer differences in the evaluation of information sources in the four areas. The important results in this table are: (1) fertilizer dealers are considered to be a more important source by large farmers than by small farmers; (1) other farmers are judged to be important information sources by the very small and very large farmers, but not so much by the farmers in the middle; (3) Publication 296 is considered more important by the larger farmers than the smaller farmers; (4) fertilizer company representatives, although not widely used, are considered more important by larger farmers, livestock farmers, and younger farmers; (5) soil tests are felt to be most important by the small acreage farmers and farmers who purchase medium quantities of fertilizer; and (6) farmer meetings and farm magazine advertisements are evaluated most favourably by high gross income farmers and farmers who purchase medium quantities of fertilizer.

2.3 Fertilizer Pricing

An important area in any analysis of fertilizer purchasing behaviour is the area of fertilizer pricing. Two aspects of this topic were explored in this research and will be discussed in this section. These were the methods used by farmers in arriving at a price with a fertilizer dealer and the attitudes of farmers regarding the importance of price in dealer selection.

2.3.1 Pricing Methods

To determine how farmers arrive at prices with fertilizer dealers, each farmer was shown a list of nine possible methods and asked to indicate the one method which best described his behaviour. The nine methods included in the list were obtained from a series of unstructured farmer interviews carried out prior to the structured survey reported in this paper.

The methods considered and the percentages of farmers using each are presented in Table 2.5. This information shows that three methods are most frequently used by Ontario farmers. These are (1) to contact a number of fertilizer dealers, get price quotes, and buy from the dealer with the lowest price; (2) to make up a list of fertilizer requirements and then contact a fertilizer dealer to place an order; and (3) to obtain prices from a few dealers before trying to make a deal with a preferred dealer. A fourth method, which

is used by ten percent of the farmers in the sample, is to wait until a fertilizer dealer makes a contact and then place an order with that dealer.

In examining the three most important pricing methods it is interesting to note that they cover a very broad range of behaviour. The first and the third methods are similar in the sense that they involve a substantial amount of effort on the part of the farmer to get several price quotes. They are different, however, in the sense that the willingness of the farmer to select the lowest priced dealer in the first method represents a fairly low degree of dealer loyalty, whereas the desire to purchase from a preferred dealer in the third method represents a much higher level of dealer loyalty. The second method, which simply involves contacting a dealer and placing an order, represents a lack of shopping and a high degree of dealer loyalty.

Table 2.6 presents the farmer differences related to methods of pricing. The results here show that the large purchase farmers in the middle age category tend to use the first method involving obtaining a number of price quotes and purchasing from the dealer with the lowest price; the medium purchase farmers in the younger age categories tend to use the third method involving obtaining a number of price quotes, but purchasing from a preferred dealer; while the small purchase farmers in the old age category tend to use the second method whereby they simply contact a dealer and place an order.

2.3.2 Pricing Attitudes

In addition to investigating the methods farmers use in establishing price with a fertilizer dealer, the research also looked at a number of important farmer attitudes related to fertilizer prices. These attitudes were measured by having the farmers respond to a series of attitude statements on a six-point scale ranging from (1) strongly disagree to (6) strongly agree. Table 2.7 lists the statements used and the farmer responses, while Table 2.8 illustrates farmer differences in these responses.

The first statements were designed to measure farmers' price sensitivity in purchasing fertilizer. The responses to these statements indicate that about half the farmers agree and the other half disagree with the ideas that price is the most important consideration in purchasing fertilizer, they usually buy from the lowest priced dealer in the area, they would change fertilizer dealers without question for a price difference of five percent, and establishing a good long term relationship with one fertilizer dealer is more important than any price savings which might be possible by changing dealers frequently. The information in Table 2.8 shows that there are very few systematic farmer differences in the responses to these statements. The only difference of any consequence is the strong agreement to the first two statements expressed by farmers in the 45 to 54 age bracket. As a result, it appears that there are differences among farmers in their price sensitivity, but that these differences are not associated with the segmentation variables used in this study.

TABLE 2.5

PRICING METHODS USED BY ONTARIO FARMERS, 1979

Method of Pricing	Percentage of Farmers
I contact a number of fertilizer dealers, get price quotes, and buy from the dealer with the lowest price.	26
I make up a list of the fertilizer requirements I want, contact the fertilizer dealer and place an order.	25
I talk to other farmers about fertilizer prices they've been quoted before I make a deal with a fertilizer dealer.	4
I get a price quote from one dealer and then I go to another and ask him if he can do better.	2
I get a price quote from a fertilizer dealer and then try to get him to include certain services at that particular price.	3
I don't contact any fertilizer dealers, they contact me and I'll accept the best deal.	2
My fertilizer dealer contacts me, we talk about fertilizer requirements, and then I place an order.	10
I get a price quote from a fertilizer dealer, determine what I'm willing to pay, and then try to reach some agreement.	3
I obtain prices from a few dealers before trying to make a deal with a preferred dealer.	24

TABLE 2.6

FARMER DIFFERENCES IN METHODS OF PRICING, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (TONS)	TON ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Contact number of dealers, get price quotas, buy from the lowest price dealer	26%	** over 100			* 45-54		
Make a list of requirements, contact a dealer and place an order	25%	** under 25			* over 55		
Fertilizer dealer contacts me and then I place an order	10%	** 51-100					
I obtain prices from a few dealers before making deal with preferred dealer	24%	** 26-50 51-100			* Under 35 35-44		

TABLE 2.7

RESPONSES TO PRICING ATTITUDE STATEMENTS, ONTARIO, 1979

Attitude Statement	Strongly Disagree Percent of Farmers	Disagree Percent of Farmers	Agree Percent of Farmers	Strongly Agree Percent of Farmers
1. Price is the most important consideration in choosing a fertilizer dealer.	12	42	38	7
2. I usually buy my fertilizer from the dealer with the lowest price in my area.	9	33	40	15
3. I would change fertilizer dealers without question for a price difference of five percent.	19	33	28	18
4. Establishing a good long term relationship with one fertilizer dealer is more important than any price savings which might be possible by changing dealers frequently.	12	31	31	14
5. There are substantial price differences among fertilizer dealers.	3	32	42	22
6. Price is a more important consideration when purchasing fertilizer in the Winter than it is when purchasing in the Spring.	11	20	35	23
7. The price of fertilizer is unreasonably high.	2	20	54	25
8. Certain types of fertilizer are much better values than other types.	2	12	57	29
9. Fertilizer containing micronutrients is not worth a premium price.	8	43	36	10

TABLE 2.8

FARMER DIFFERENCES IN RESPONSES TO PRICING ATTITUDE STATEMENTS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL[1] FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Price is the most important consideration in choosing a fertilizer dealer	3.3					*** 45-54	** Wellington
Usually buy from the dealer with the lowest price in my area	3.8		* over 400			*** 45-54	
Change fertilizer dealers for price difference of five percent	3.4						
Establishing long term relationship is more important than price savings	3.6		* over 400	* over 200			
There are substantial price differences among fertilizer dealers.	4.2	** over 100					

TABLE 2.8 (CONTINUED)

FARMER DIFFERENCES IN RESPONSES TO PRICING ATTITUDE STATEMENTS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Price is more important in Winter than in Spring	4.2	* Under 25					
The price of fertilizer is unreasonably high	4.4		** Under 200	*** Under 50 50-100	* Cash crop		** Kent Huron
Certain types of fertilizer are better values than others	4.8				** Cash crop		
Fertilizer containing micronutrients is not worth a premium price	3.5	Under 25** 25-50 50-100	Under 200* 200-400				

[1] Calculated using a six-point scale ranging from (1) strongly disagree to (6) strongly agree. Higher numbers, therefore, represent greater agreement.

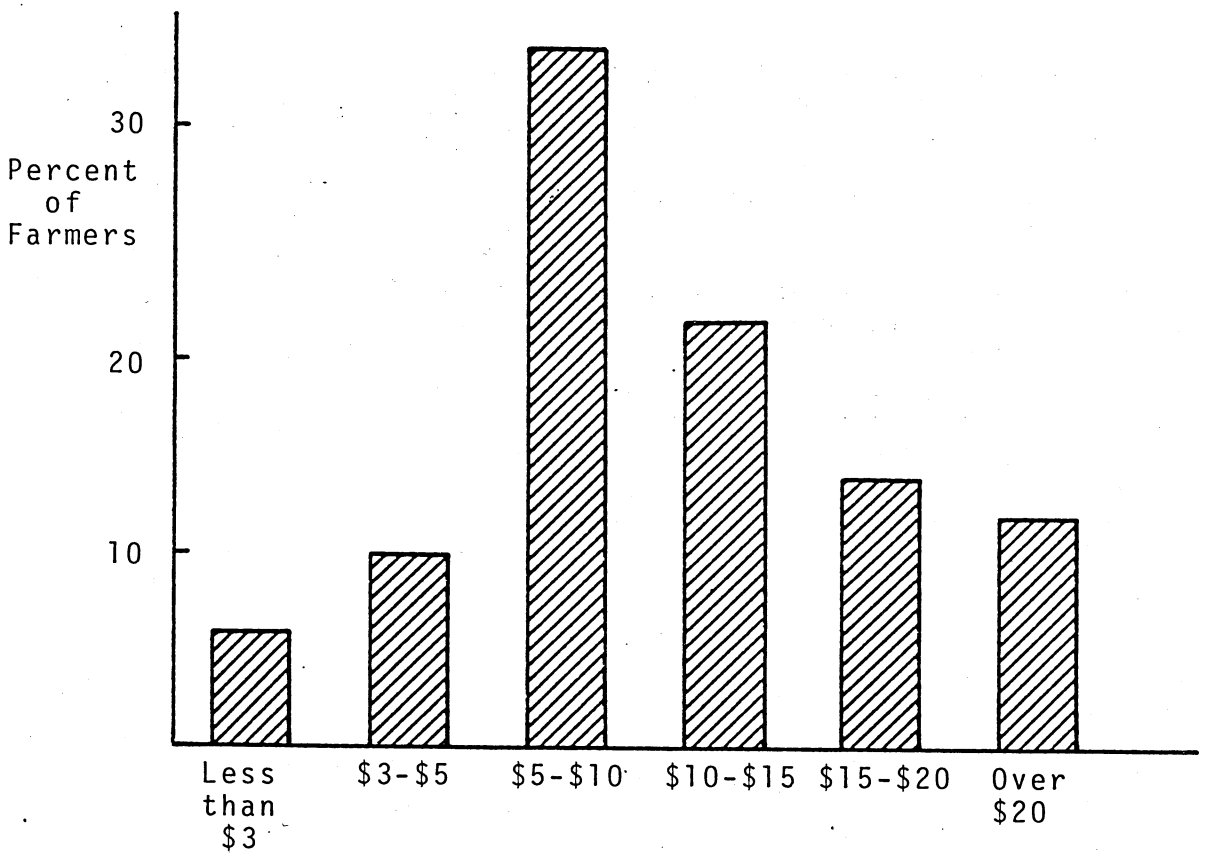

FIGURE 2.8
FARMERS' PERCEPTIONS OF FERTILIZER DEALER PROFITS, ONTARIO, 1979

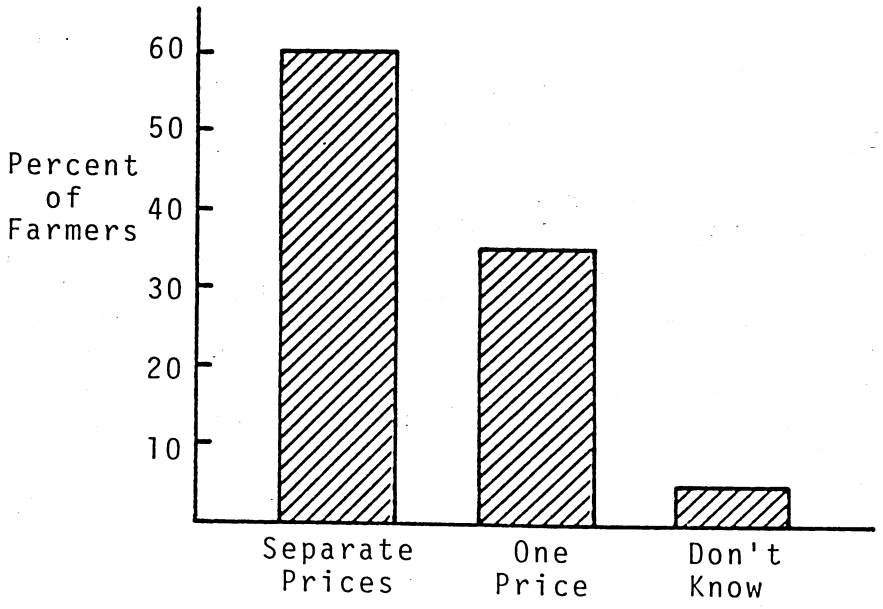

FIGURE 2.9
FARMER PREFERENCES FOR PRICING MATERIALS AND SERVICES, ONTARIO, 1979

The fifth statement in Table 2.7 measures the extent to which farmers feel that there are price differences among fertilizer dealers. Here the results show that well over half the farmers felt that substantial price differences exist among fertilizer dealers. Larger purchase farmers who operate larger farming units showed more agreement with this statement than other farmers.

Responses to statement six indicate that over half the farmers and particularly those purchasing small amounts of fertilizer, feel price is a more important consideration in the Winter than in the Spring. In the case of statement seven, almost 80 percent of the farmers expressed agreement with the idea that the price of fertilizer is unreasonably high. This feeling was found to be more pronounced among the smaller farmers in the sample. Finally, statement eight looks at farmers' perception of the relative value of different fertilizer types. Response here indicate strong agreement with the notion that there are important value differences among fertilizer types.

2.3.3 Other Pricing Issues

Two other areas related to pricing were investigated in the survey. The first area concerned farmers' preferences for having materials and services priced separately or together. The results in Figure 2.9 indicate that 60 percent of the farmers prefer separate prices, while 35 percent prefer one price and 5 percent had no opinion. No farmer differences were found for responses to this question.

The second area concerned farmers' perceptions of profits made by fertilizer dealers. To obtain information in this area the farmers were asked to respond to the question: assume that a ton of fertilizer costs you $100. How much of that $100 do you think the fertilizer dealer makes in profit? Response to this question, shown in Figure 2.8, indicate that most farmers feel a fertilizer dealer makes between 5 and 15 percent profit on each ton of fertilizer he sells. As in the previous question, no farmer differences were found for responses to this question.

2.4 Product Line

An important concern in any organization deals with the question of what products should be included in the overall product line. An attempt was made to answer this question by presenting the farmers with a list of nine products, and for each product, asking them to indicate: (1) those that are currently available at their fertilizer dealer, (2) those that they purchased during the past year from their fertilizer dealer, and (3) those they probably would purchase from their fertilizer dealer if they were available at a competitive quality and price. The nine products or product classes included in the analysis were: herbicides, insecticides, seed corn, other farm seeds, general farm supplies, feeds or premixes, animal health products, limestone, and micronutrients.

Figure 2.10 presents the summary results of these questions by showing the proportion of farmers who perceived each product to be available or not available from their fertilizer dealer. Moreover, the chart shows the proportion of farmers who currently purchase the products from their fertilizer dealer, as well as the proportion of farmers who would purchase the products from their fertilizer dealer if they were available. To illustrate the interpretation of this figure consider the case of other farm seeds. Here the results indicate that approximately 75 percent of the farmers felt this product was currently available from their fertilizer dealer, while 25 percent felt that it was not. Over half of the farmers who felt the product was available (or about 45 percent of the total sample) indicated that they purchased other farm seeds from their fertilizer dealer in 1979, while exactly half of the farmers who felt the product was not available (or about 12 percent of the total sample) indicated that they would purchase other farm seeds from their fertilizer dealer if they became available in the future. Because of the manner in which Figure 2.10 is constructed, it readily shows two very important measures for each product: the extent to which the product is available but not purchased, and the extent to which the product is not available but probably would be purchased if dealers began to carry it.

Reference to Figure 2.10 shows, first of all, that all the products considered were felt to be widely available at retail fertilizer outlets. This was particularly true for herbicides, insecticides, seed corn, and other farm seeds which apparently are carried by over 70 percent of Ontario fertilizer dealers. The product which is carried by the fewest number of dealers is limestone, but even here, over 50 percent of the dealers are perceived to handle this product.

There is much greater variability in the extent to which each product is currently purchased. Here the results indicate that over half the farmers purchase only herbicides, insecticides, and general farm supplies from their fertilizer dealers. Fairly large percentages also purchase seed corn, other farm seeds, feeds or premixes, and animal health products from their fertilizer dealers, while very small percentages purchase limestone and micronutrients.

Finally, with regard to products not available at fertilizer dealers the results show that only for other farm seeds, general farm supplies, feed or premixes, animal health products, limestone, and micronutrients is there any unfilled demand. In all of these cases the proportions of farmers who probably would purchase the products at their fertilizer dealer is quite small.

Table 2.9 shows the type of farmers who are most likely to purchase each product from their fertilizer dealer. The most important results in this table are: (1) herbicides and other farm seeds are most likely purchased by farmers who also purchase medium to large quantities of fertilizer and farmers on cash crop or mixed farms; (2) insecticides are most commonly purchased by farmers who purchase very large quantities of fertilizer and farmers in the over 55 age category; and (3) feeds and animal health products are purchased primarily by small to medium gross income farmers and farmers on livestock and mixed farms.

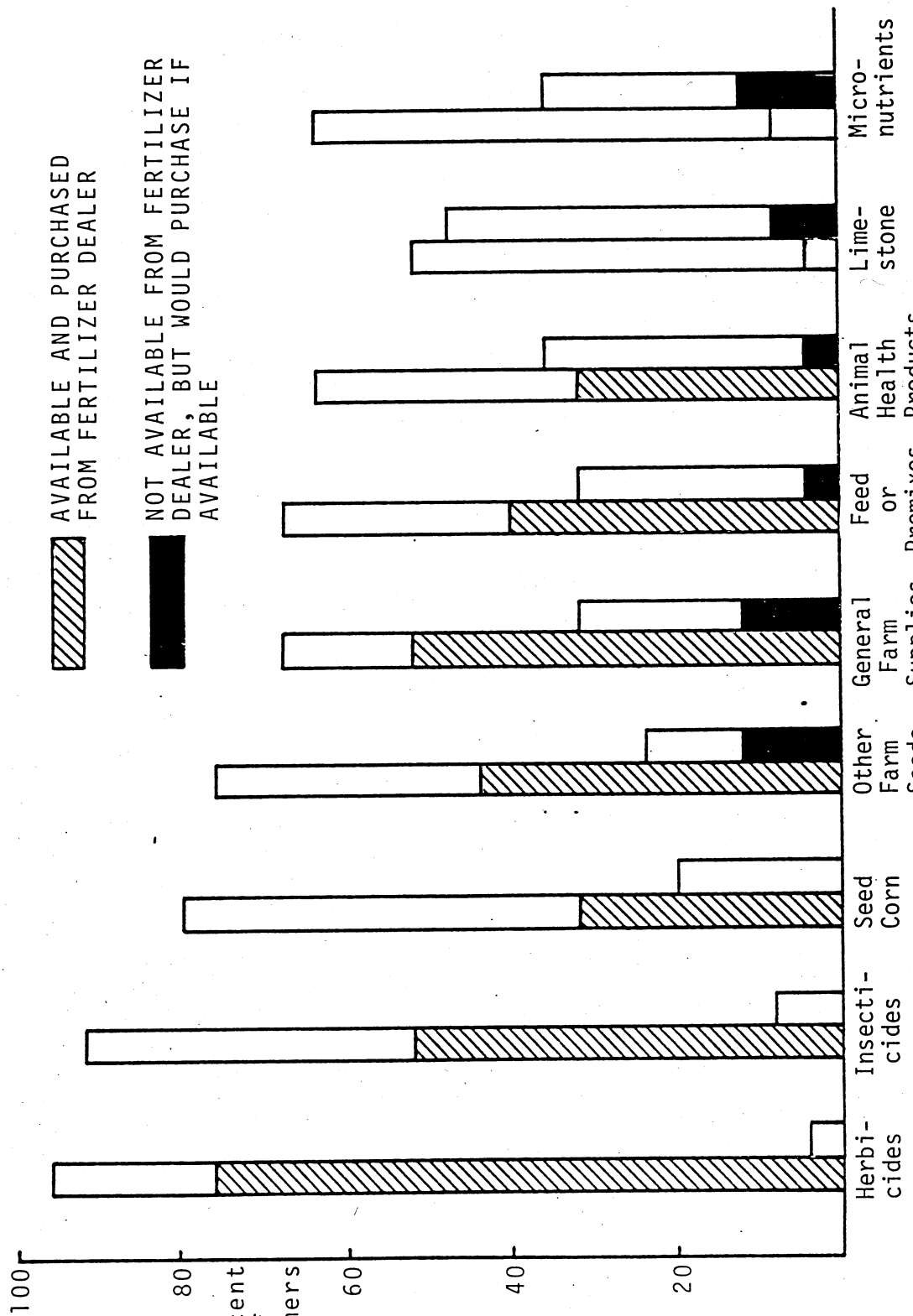

FIGURE 2.10

PRODUCTS AVAILABLE AND PURCHASED AT FERTILIZER DEALERS, ONTARIO, 1979

TABLE 2.9

FARMER DIFFERENCES IN PURCHASE OF PRODUCTS FROM FERTILIZER DEALERS, ONTARIO, 1979

CHARACTERISTICS / PRODUCTS	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
HERBICIDES	74%	* 26-50 51-100 Over 100			** Cash crop mixed		*** Wellington Kent
INSECTICIDES	50%	* over 100			** Mixed	** Over 55	** Kent Oxford
SEED CORN	32%				* Mixed		** Wellington Kent
OTHER FARM SEEDS	42%	* 26-50 over 100			*** Cash crop		*** Kent
GENERAL FARM SUPPLIES	53%				* Cash crop		

TABLE 2.9 (CONTINUED)

FARMER DIFFERENCES IN PURCHASE OF PRODUCTS FROM FERTILIZER DEALERS, ONTARIO, 1979

CHARACTERISTICS / PRODUCTS	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
FEED OR PREMIXES	40%			* Under 50 50-100 100-200	*** Livestock mixed		
ANIMAL HEALTH PRODUCTS	33%			* Under 50 50-100 100-200	*** Livestock mixed		*** Oxford Huron
LIMESTONE	4%						*** Kent
MICRONUTRIENTS	8%				** Cash crop		*** Kent
NUMBER OF NON-FERTILIZER ITEMS PURCHASED	3.4				** Cash crop		

Figure 2.11 shows the distribution of the number on non-fertilizer items purchased from fertilizer dealers. As illustrated, only about 10 percent of the sample did not purchase any non-fertilizer items from their fertilizer dealer while the same percentage purchased more than six additional items. The average number of non-fertilizer items purchased was 3.4.

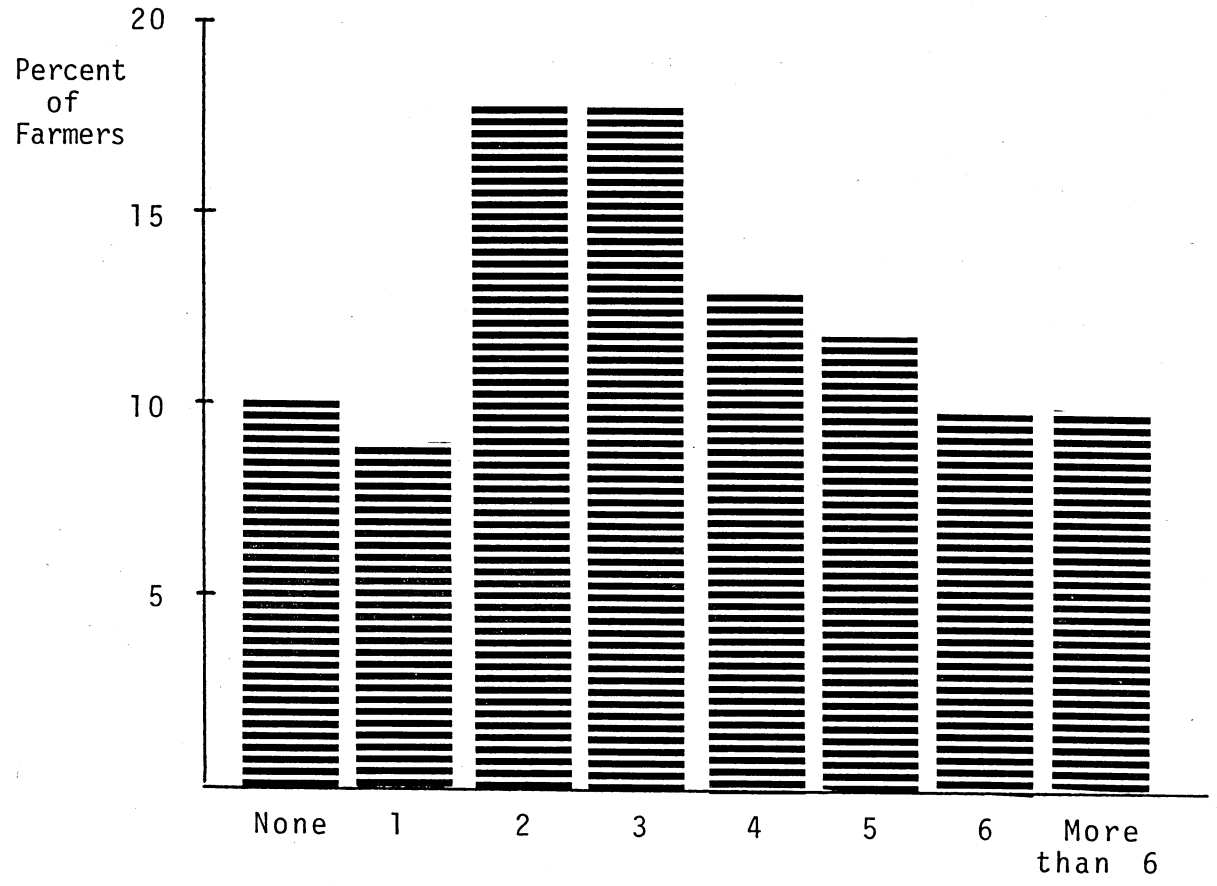

FIGURE 2.11

PURCHASES OF NON-FERTILIZER PRODUCTS, ONTARIO, 1979

2.5 Dealer Services

In addition to making decisions with respect to what products to include in the overall product line, fertilizer dealers also have to make decisions regarding the particular services they will provide for their customers. An attempt was made to answer this question by presenting the farmers with a list of twenty services fertilizer dealers currently provide, or might be able to provide in the future. For each service the farmers were asked to indicate whether or not it was currently available at their fertilizer dealer, and their evaluation of the importance of the service. To make this evaluation they were

TABLE 2.10

EVALUATION AND PERCEIVED AVAILABILITY OF SERVICES, ONTARIO, 1979

Service	Evaluation				Availability		
	Absolutely Necessary %	Probably Use %	Probably Not Use %	Do Not Want %	Yes %	No %	Don't Know %
Have only new or completely reconditioned application equipment.....	83	10	4	3	89	8	3
Provide custom blending of fertilizer.....	77	14	8	1	94	6	1
Obtain the advice of experts from companies, universities, etc. in the event of problems with your fertilizer.....	72	19	7	2	76	6	18
Keep you up to date on new developments in fertilizer products and/or services....	73	18	7	2	83	13	4
Have enough application equipment to eliminate waiting during busy seasons.....	74	16	6	5	77	20	4
Have a person on staff who will give you expert help regarding fertilizer and herbicide planning for your land and crops....	71	15	11	5	83	14	3
Have a person on staff who can provide expert help (and make farm visits if necessary) in the event of problems with your fertilizer.....	67	18	9	6	79	17	4
Sponsor farm meetings you can attend.....	42	40	11	7	70	27	3
Provide agronomic information about crops you grow or plan to grow in the form of brochures, newsletters, or similar publications.....	48	30	11	11	73	25	2
Provide custom application of fertilizer..	42	23	33	3	90	10	--
Provide soil testing	42	27	18	13	66	25	9
Provide separate loading areas based on size of load you are picking up to shorten lineups	40	28	16	16	52	42	6
Demonstrate new and existing fertilizer products and application equipment through demonstration plots, exhibits, etc.....	25	41	22	12	28	57	15
Provide plant tissue analysis	24	36	25	15	37	35	28
Provide custom application of limestone...	20	21	44	17	42	39	19
Buy, or contract to buy all or a portion of your grain.....	11	26	25	38	51	45	4
Provide a complete crop management service including field scouting, crop records, etc.	9	21	36	34	18	64	18
Provide custom application of herbicides..	7	12	56	25	35	58	7
Provide custom application of insecticides	2	10	56	33	18	68	14
Provide custom grain seeding (barley, oats, etc.) using bulk spreaders.....	4	7	49	41	21	71	8

asked to rate each service on a four point scale containing the following descriptions: (1) absolutely necessary that your fertilizer dealer provide this service; (2) not absolutely necessary that your fertilizer dealer provide this service, but you would probably use it if it were available at a competitive quality and price; (3) all right for your fertilizer dealer to provide this service, but you would probably not use it even if it were available at a competitive quality and price; and (4) don't want your fertilizer dealer to provide this service. The basic idea of the scale, of course, was to get some idea of the importance farmers attach to each of the services.

Responses to the evaluation and availability questions are shown in Table 2.10 with the services ranked in decreasing order of importance. As can be seen in this table, the ten most important services are realted to fertilizer application and blending, and the provision of fertilizer and crop information. Particularly important are: (1) the condition and availability of application equipment; (2) the provision of custom fertilizer blending; (3) the provision of information through people on staff, brochures, newsletters, and farmer meetings; and (4) the provision of custom application services. Several other services such as soil testing, demonstrations, and plant tissue analysis were judged to be of importance to fairly large percentages of farmers. Some services, on the other hand, such as custom application of other products, purchasing grain, and providing a complete crop management service were felt to be relatively unimportant. As a matter of fact, in most of these cases, a quarter to a half of the farmers in the sample expressed the opinion that they did not want their fertilizer dealer to provide these services at all.

As expected, there are important differences among the types of farmers having particular service needs. Table 2.10 lists the twenty services considered, and for each service, the type of farmer evaluating that service as being more important. The most important findings in this table are: (1) for practically every service, cash crop and mixed farmers find the service to be more important than livestock farmers; (2) the very young farmers (under 35) tend to evaluate farmer meetings and demonstrations as being more important than older farmers; (3) both the very young and middle age farmers are more concerned with informational services such as obtaining expert advice, providing agronomic information, and providing crop management services than are the older farmers; and (4) farmers in the larger size of purchase categories are more interested in most services, particularly the condition of application equipment, the provision of custom blending and custom application, and the provision of information than other farmers.

Figure 2.12 summarizes the detailed results contained in Table 2.10 by showing the proportion of farmers who perceived each service to be available or not available from their fertilizer dealer. Moreover, the chart shows the proportion of farmers who currently use the service, as well as the proportion of farmers who would probably use the service if it were available from their dealer. To illustrate the interpretation of the graph, consider the case of obtaining advice from experts. Here the results indicate that almost 80 percent of the sample felt this service was currently available from their fertilizer dealer, while about 20 percent felt the service was not available. Of those farmers who felt the service was available, all but a few also felt

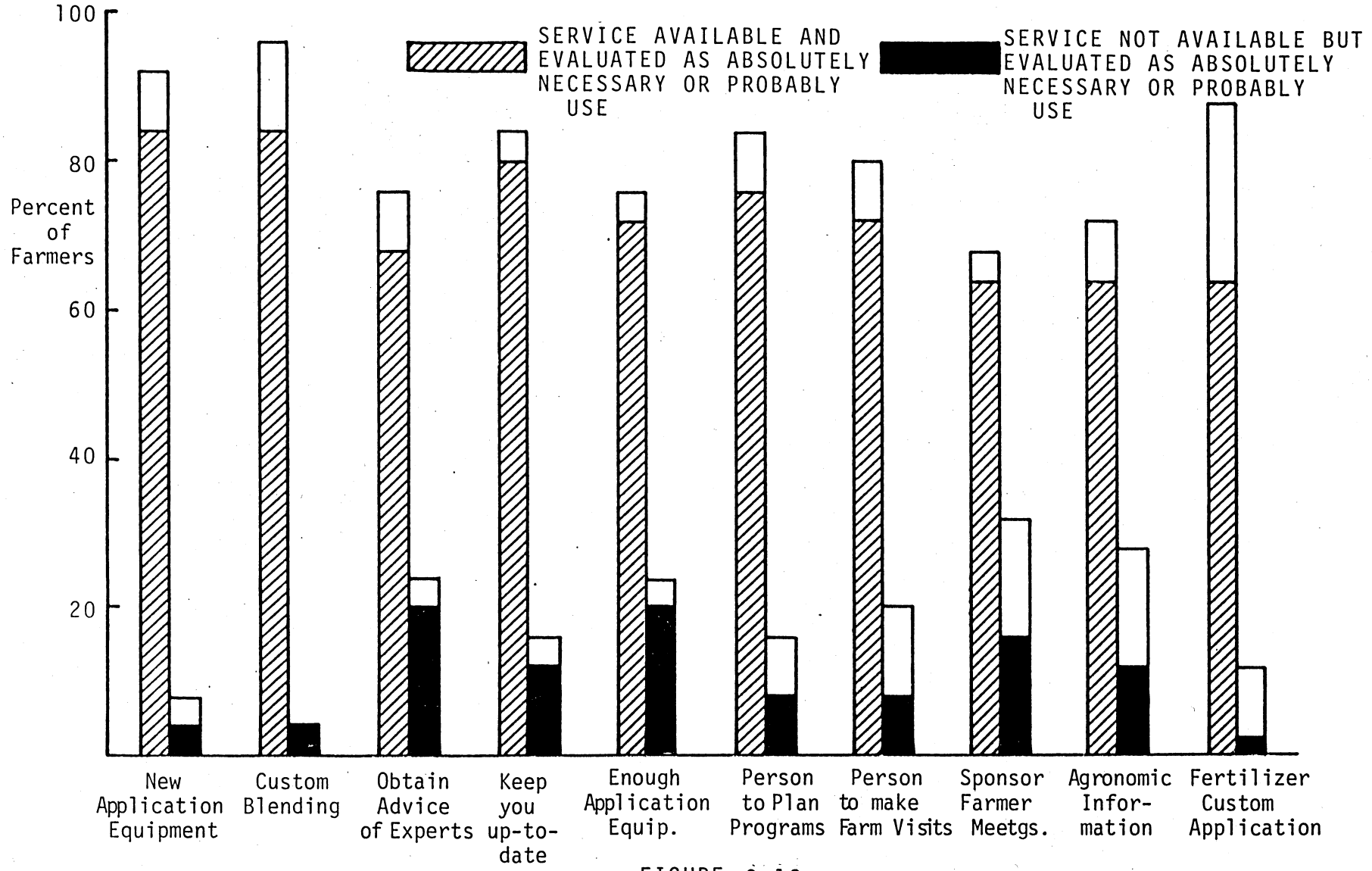

FIGURE 2.12

SERVICE AVAILABILITY AND USE, ONTARIO, 1979

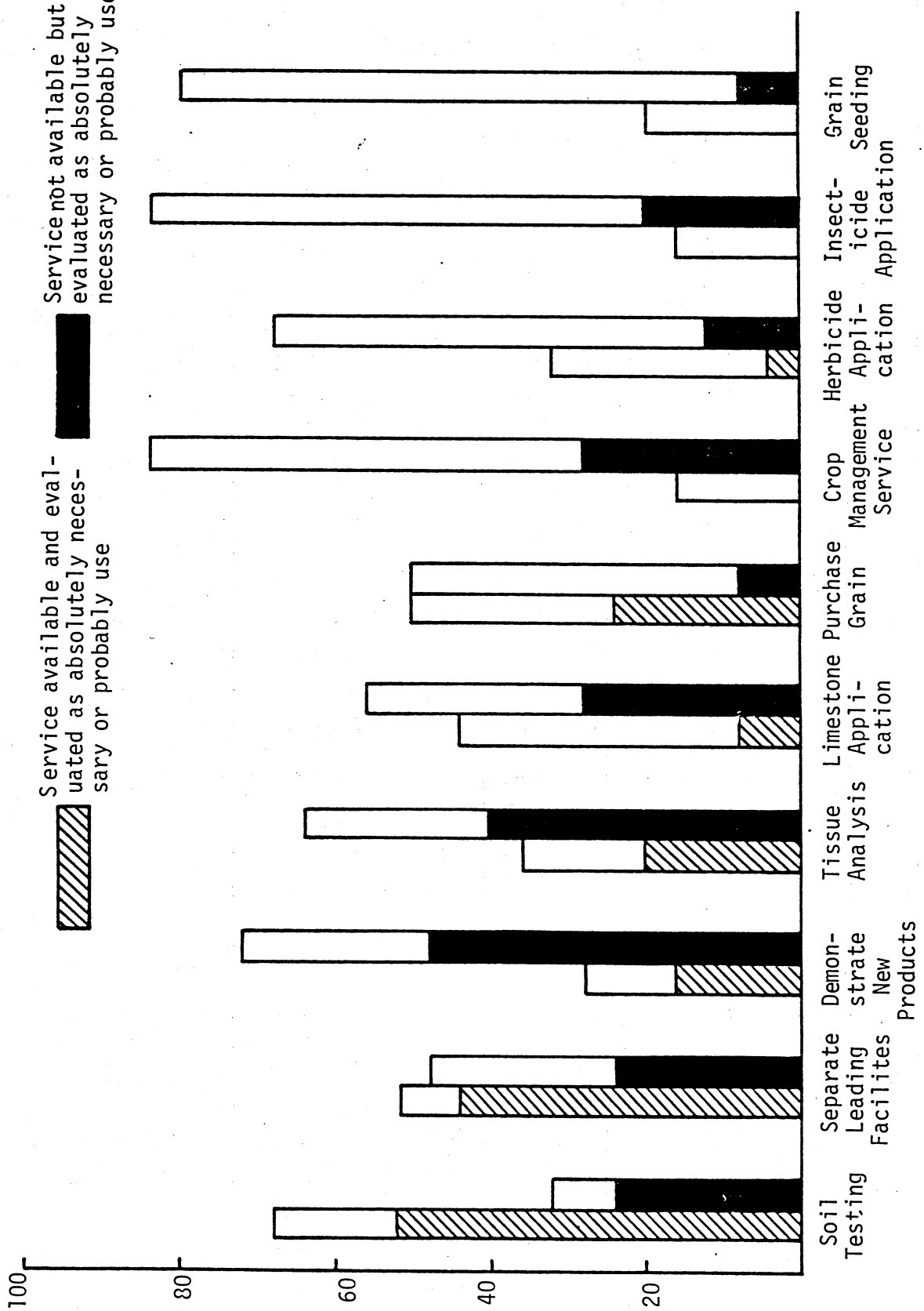

FIGURE 2.12 (Continued)

SERVICE AVAILABILITY AND USE, ONTARIO, 1979

TABLE 2.11

FARMER DIFFERENCES IN THE EVALUATION OF SERVICES, ONTARIO, 1979

CHARACTERISTICS / SERVICES	ALL[1] FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Have only new or completely reconditioned equipment	1.2	** 26-50 51-100			** Cash crop mixed		*** Kent Oxford Huron
Provide custom blending of fertilizer	1.3	* 51-100			*** Cash crop	* Under 35 35-44	
Obtain the advice of experts in the event of problems	1.4	*** 26-50 51-100 over 100	* Over 400		*** Cash crop mixed	** Under 35 35-44 Over 55	** Kent Oxford Huron
Keep you up-to-date on new developments	1.4	** 26-50 51-100 Over 100	* Over 400		*** Cash crop mixed		** Kent Oxford
Have enough application equipment to eliminate waiting	1.4				** Cash crop mixed		* Kent Oxford Huron
Have a person to help plan fertilizer and herbicide programs	1.5		* 200-400	* 50-100	*** Cash crop mixed		*** Kent Oxford
Have a person who can provide expert help and make farm visits	1.6						** Oxford

TABLE 2.11 (CONTINUED)

FARMER DIFFERENCES IN THE EVALUATION OF SERVICES, ONTARIO, 1979

CHARACTERISTICS / SERVICES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Sponsor farmer meetings	1.8	** 26-50 - 51-100 Over 100			*** Cash Crop mixed	* 35-40	*** Kent Oxford Huron
Provide agronomic information in the form of brochures	1.9	* 51-100			** Cash Crop mixed	* Under 35 35-41	*** Kent Oxford Huron
Provide custom application of fertilizer	2.0	** 51-100 Over 100	* 200-400 over 400		*** Cash crop mixed		*** Kent Huron
Provide soil testing	2.0		* Over 400		*** Cash crop mixed		*** Kent
Provide separate loading areas based on size of load	2.1				* Cash crop		*** Huron
Demonstrate new products and equipment	2.2		* Under 200 200-400		*** Cash crop mixed	* Under 35	*** Kent Huron
Provide plant tissue analysis	2.3				*** Cash crop		*** Kent Oxford Huron

TABLE 2.11 (CONTINUED)

FARMER DIFFERENCES IN THE EVALUATION OF SERVICES, ONTARIO, 1979

CHARACTERISTICS / SERVICES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Provide custom application of limestone	2.6	* 51-100 over 100	** Over 400		*** Cash crop mixed		*** Kent
Buy, or contract to buy, grain	2.9			* Under 50	*** Cash crop mixed		*** Kent Oxford Huron
Provide a complete crop management service	2.9		* over 400	* 100-200 over 200	** mixed	** Under 35 35-44	* Oxford Huron
Provide custom application of herbicide	3.0	** 51-100 over 100			** Cash crop mixed		* Kent Huron
Provide custom application of insecticide	3.2	** 51-100					
Provide custom grain seeding	3.3	* 51-100		* Under 50 50-100			

[1] Calculated from the four point scale used by the farmers to evaluate each service. The scales values were: (1) absolutely necessary, (2) probably use, (3) probably not use, and (4) don't want.

that it was absolutely necessary for their dealer to provide, or a service they would probably use. In a like manner, almost all of those farmers who felt the service was not available, also felt it was a very important service and one they would probably use if it were available. Because of the manner in which Figure 2.12 is constructed, it clearly shows the extent to which each service is available but not used, and the extent to which each service that is not available probably would be used if made available in the future.

Reference to Figure 2.12 indicates that for many services, particularly those perceived as being relatively important by a large proportion of farmers, there is very little difference between availability and use. This is not the case for those services perceived as being relatively less important. In these instances the matching of service supply with demand is not very good. For example, in the cases of separate loading facilities, demonstrations, tissue analysis, limestone application, and crop management services, there are sizeable groups of farmers who would most likely utilize these services if they would be made available by their fertilizer dealer. Also, there are some instances, most notably tissue analysis, limestone application, purchasing grain, and herbicide application, where the services are thought to be available at specific dealers but not widely used.

2.6 Dealer Patronage

An important area in the analysis of farmer purchasing behaviour for fertilizers is dealer patronage. This section discusses this topic in terms of the type of dealer used, reasons for dealer selection, distance of dealer from farm, number of dealers in the immediate area, number of dealers used, reasons for splitting purchases, and dealer loyalty. A subsequent publication explores the dealer selection decision in much greater depth through the use of Importance - Performance Analysis.

2.6.1 Type of Dealer Used

The first step in the analysis of dealer patronage was to classify the individual dealers into groups and determine the extent to which each group was used in 1979. The development of a classification scheme for dealers was necessary because over 150 different dealers (outlets) were cited by the sample farmers. The classification scheme developed for this analysis consisted of the following groups: (1) retail outlets of major fertilizer suppliers, (2) retail outlets of central cooperative and all independent cooperatives, (3) independent dealers with multiple outlets and production facilities, (4) single outlet independent dealers with production facilities, (5) single outlet independent dealers without production facilities, and (6) U.S. sources.

The extent to which farmers use these dealer types is shown in Table 2.12 for each type of fertilizer, and Figure 2.13 for all fertilizers. These results indicate that cooperatives as a whole account for the largest percentage of fertilizer sales followed closely by multiple outlet independent dealers and retail outlets of major suppliers. Single outlet independent dealers with

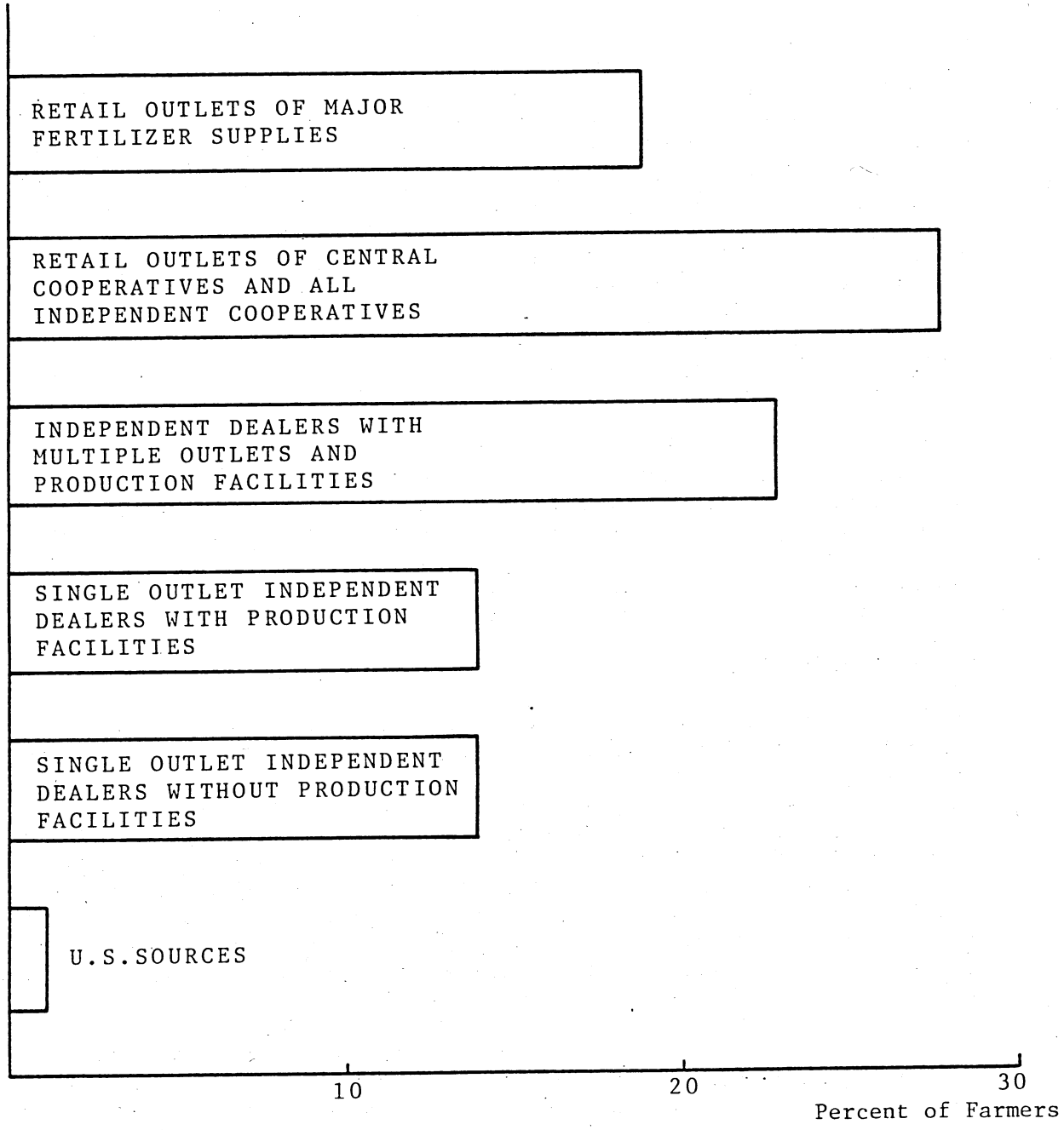

FIGURE 2.13

TYPE OF DEALER USED, ONTARIO, 1979

TABLE 2.12

TYPE OF DEALER USED, ONTARIO, 1979

TYPES OF DEALERS	PERCENTAGE OF FARMERS PURCHASING						
	BULK BLENDS	BULK MATERIALS	BAGGED FERTILIZERS	LIQUID NITROGENS	LIQUID MIXES	ANHYDROUS AMMONIA	ALL TYPES
Retail outlets of major fertilizer suppliers	20	18	22	22	12	20	18
Retail outlets of control cooperative and all independent cooperatives	31	27	21	20	38	26	28
Independent dealers with multiple outlets and production facilities	22	28	17	18	0	26	23
Single outlet independent dealers with production facilities	16	14	21	15	26	20	14
Single outlet independent dealers without production facilities	10	13	17	25	12	8	14
U.S. Sources	1	0	2	0	12	0	1

TABLE 2.13

FARMER DIFFERENCES IN TYPE OF DEALER USED, ONTARIO, 1979

CHARACTERISTICS / TYPE OF DEALER	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Retail outlet of major fertilizer supplier	18%	* 25 to 50			** Livestock	** Under 35 35-44	
Retail outlet of central cooperative and all independent cooperatives	28%	* Under 25			** Mixed	** 35-44	
Independent dealers with multiple outlets and production facilities	23%	* 25 to 50			** Cash crop	** 45-54	*** Kent
Single outlet independent dealers with production facilities	14%	* Under 25			** Livestock	** 45-54 over 55	
Single outlet independent dealers without production facilities	14%	* Under 25			** Livestock	** 35-44	*** Wellington

and without production facilities each account for almost 15 percent of total fertilizer sales, while U.S sources account for a mere one percent. For the most part there are only small differences in the overall percentages when broken down by type of fertilizer.

Table 2.13 shows the farmer differences associated with the use of various dealer types. These results show that farmers in the under 25 ton purchase size group are more likely to patronize cooperatives and single outlet independent dealers while farmers in the 25 to 50 ton purchase size group are more likely to patronize the retail outlets of major suppliers and multiple outlet independent dealers. No differences were found in the types of dealers used by larger purchase farmers. The farm type differences in Table 2.13 show that cooperatives definitely tend to attract a higher proportion of mixed farmers, while multiple outlet independents are more likely to attract cash crop farmers, and major suppliers as well as single outlet independents are more likely to attract livestock producers. Finally, the age differences in Table 2.13 indicate that the younger farmers (under 45) are more likely to do business with major suppliers, cooperatives, and single outlet independents without production facilities, while the older farmers (over 45) are more likely to do business with multiple outlet independents and single outlet independents with production facilities.

2.6.2 Reasons for Dealer Selection

The reasons given by the sample farmers for selecting their dealers are shown in Table 2.14 for each of the six major types of fertilizer considered in this study. The questions in this area were free response type questions so the entire range of responses are presented in Table 2.14 even though some responses were mentioned by only a few farmers. This is done to demonstrate the wide variety of reasons farmers have for their behaviour in this area.

The results in Table 2.14 show that while there are some differences among fertilizer types in the reasons for dealer selection, three reasons are common to all types and are of major importance. These are; dealer is close, price is cheaper, and availability of product when needed. Table 2.15 shows that there are some important differences among farmers in the extent to which they cite these three reasons for dealer selection. Essentially these results indicate that larger farmers are more concerned with price, small and medium farmers are more concerned with dealer location, and very small farmers with availability when needed.

2.6.3 Distance from Farm

After questioning each farmer about his reasons for dealer selection, additional questions were asked concerning the number of dealers in the area and the distance from the farm to these dealers. The results of these questions are shown in Table 2.16 and Figures 2.14 and 2.15.

The data in Table 2.16 reveals that the average farmer has two fertilizer dealers within 5 miles of his farm, and five fertilizer dealers within 10 miles.

TABLE 2.14

REASONS FOR DEALER SELECTION, ONTARIO, 1979[1]

Reasons	Dry Bulk and Custom Blends		Dry Bulk Materials		Dry Bagged Blends and Materials	
	Main Reason %	Other Mentions %	Main Reason %	Other Mentions %	Main Reason %	Other Mentions %
Dealer is close	30	12	32	14	13	15
Price is cheaper	30	34	28	29	45	14
Availability of product when needed	14	30	12	22	14	19
Dealer loyalty	5	4	3	4	6	4
Buy or sell other products at dealer	5	5	6	2	7	7
Equipment considerations	4	13	5	12	3	4
Availability of specific products	2	5	2	18	4	3
Dealer is personal friend/relative	2	4	3	1	1	2
Good delivery	2	3	--	--	1	4
Coop member/shareholder	2	1	2	1	3	--
Good working relationship with dealer	1	13	2	10	1	18
Availability of specific services	1	2	1	4	--	--
Discounts or dividends	1	1	--	--	--	4
Part owner of fertilizer dealership	1	--	--	--	--	--
Good quality products	1	--	1	--	--	--
Dealer has good fertilizer set-up	--	4	--	--	--	--
Credit terms	--	3	1	4	1	6
Have good custom application service	--	2	--	2	--	--
Interested dealer/staff	--	2	--	--	--	--
Caters to farmers	--	2	--	--	--	--
Knowledgeable dealer/salesman/staff	--	2	--	--	--	6
Contractual arrangement	--	--	1	--	--	--
Dealer is my landlord	--	--	--	--	--	--

TABLE 2.14 (Continued)

REASONS FOR DEALER SELECTION, ONTARIO, 1979

Reasons	Liquid Nitrogens		Liquid Mixes[2]		Anhydrous Ammonia	
	Main Reasons %	Other Mentions %	Main Reasons %	Other Mentions %	Main Reasons %	Other Mentions %
Dealer is close	17	17	--	12	31	17
Price is cheaper	23	19	12	--	35	23
Availability of product when needed	17	19	--	12	4	33
Dealer loyalty	4	2	--	--	2	8
Buy or sell other products at dealer	4	--	--	--	8	4
Equipment considerations	6	8	--	12	4	18
Availability of specific products	11	2	50	12	2	6
Dealer is personal friend/relative	2	12	--	--	--	6
Good delivery	2	4	--	--	--	4
Coop member/shareholder	4	--	--	--	2	--
Good working relationship with dealer	--	6	--	12	--	6
Availability of specific services	2	2	12	--	2	2
Discounts or dividends	--	--	--	12	--	--
Part owner of fertilizer dealership	4	--	12	--	--	--
Good quality products	--	--	--	--	--	--
Dealer has good fertilizer set-up	--	6	--	--	--	--
Credit terms	--	--	--	--	--	4
Have good custom application service	4	6	--	25	2	--
Interested dealer/staff	--	--	--	--	--	--
Caters to farmers	--	--	--	--	--	--
Knowledgeable dealer/salesman/staff	--	--	--	--	--	4
Contractual arrangement	--	--	--	--	--	4
Dealer is my landlord	--	--	12	--	--	--

[1] The numbers refer to the percentages of farmers purchasing each type of fertilizer.

[2] Less than ten observations.

TABLE 2.15

FARMER DIFFERENCES IN REASONS FOR DEALER SELECTION, ONTARIO, 1979.

CHARACTERISTICS / REASONS	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
PRICE	38%		* Over 400	* 100-200 Over 200			* Wellington Oxford
LOCATION	24%		* Under 200 200-400	* 50-100 100-200			* Kent Huron
AVAILABILITY	20%			* Under 50			

TABLE 2.16

NUMBER AND DISTANCES OF DEALERS FROM FARM, ONTARIO, 1979

	All Farmers	Wellington	Kent	Oxford	Huron
Number of dealers within 5 miles	1.9	2.3	2.5	1.2	1.4
Number of dealers within 10 miles	5.0	5.2	6.3	4.0	4.2
Miles to nearest dealer	4.0	3.7	3.4	4.8	8.6
Miles to main dealer	7.5	7.5	4.6	9.3	8.6
Purchase from nearest dealer	45%	38%	62%	36%	44%

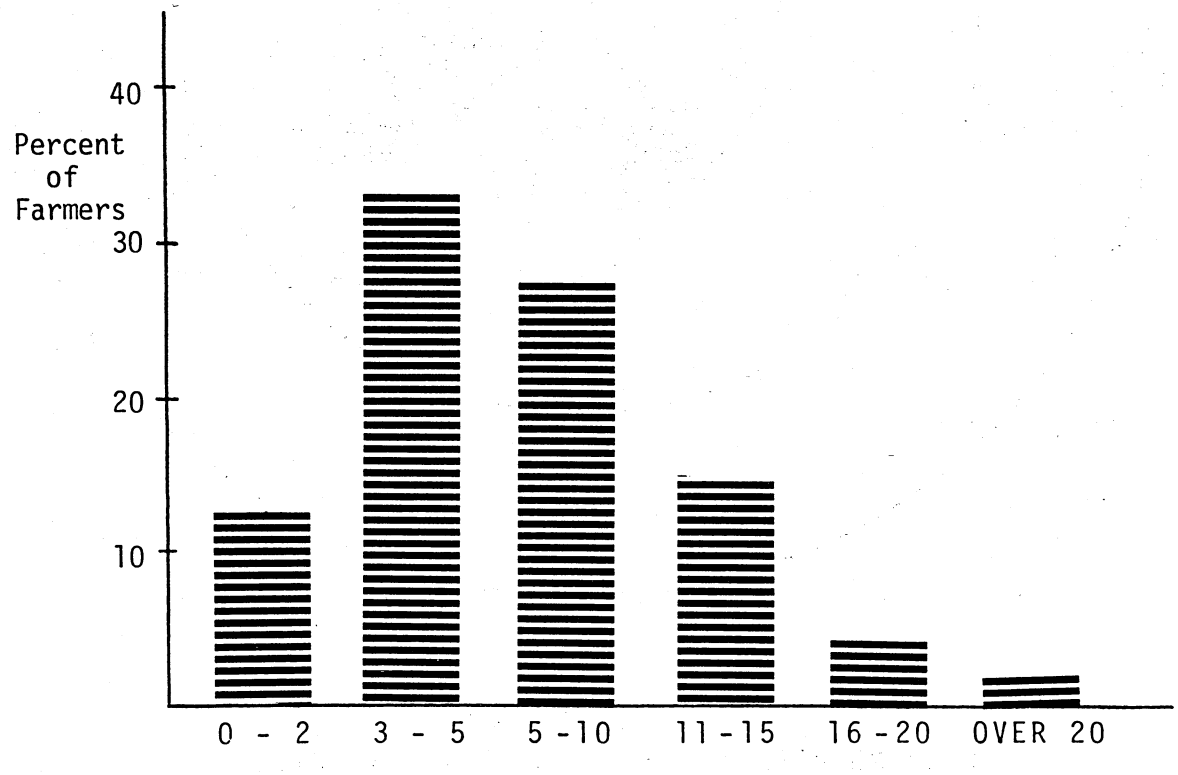

FIGURE 2.14

MILES TO MAIN DEALER, ONTARIO, 1979

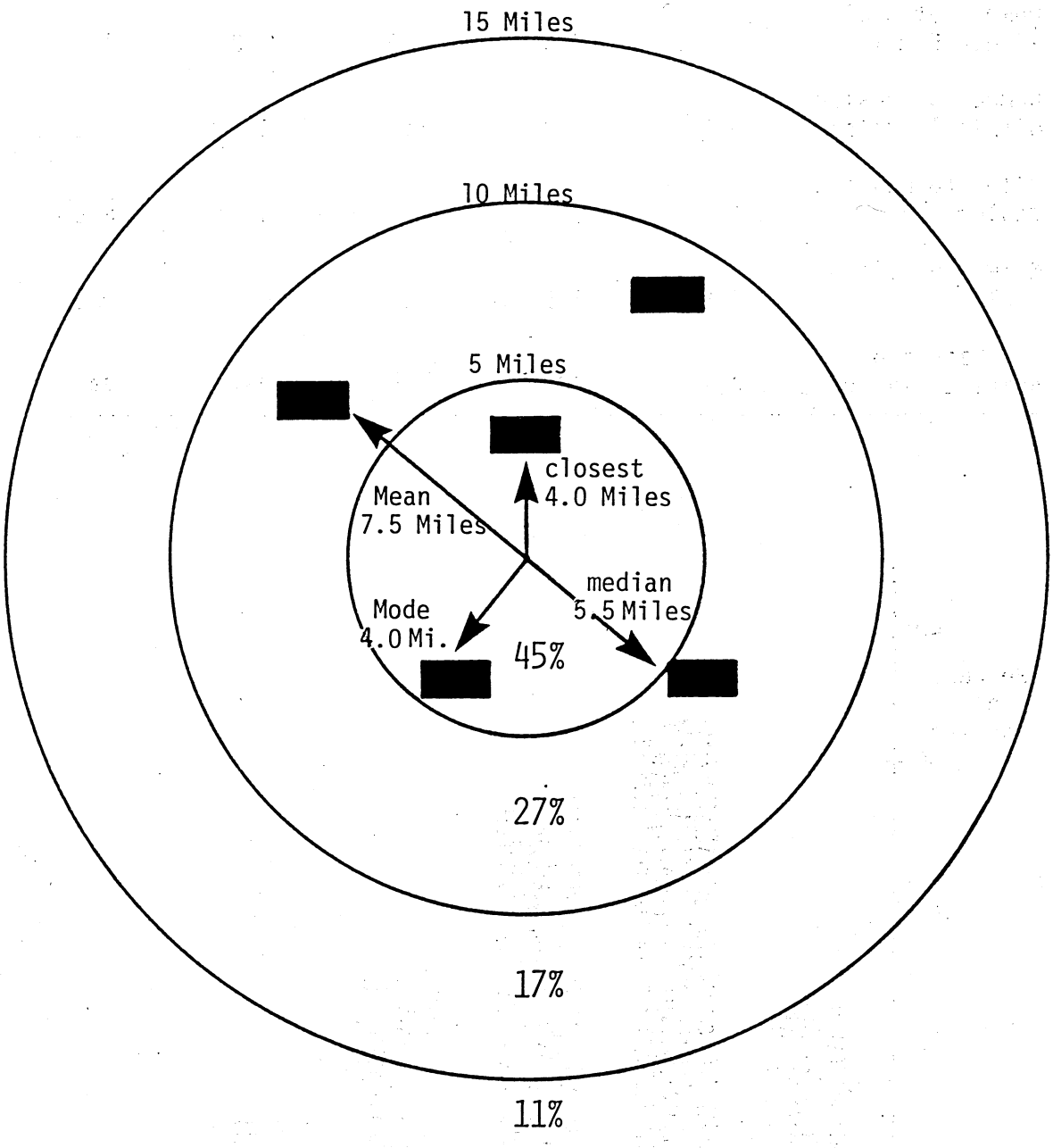

FIGURE 2.15

TRADING AREA FOR FERTILIZERS, ONTARIO, 1979

The nearest dealer to the farm is four miles away and the distance to the farmer's main dealer is 7.5 miles. Despite this, 45 percent of the farmers in the sample purchased from their nearest fertilizer dealer. The distribution of farmers with respect to distance to main dealer shown in Figure 2.14 illustrates that while most fertilizer purchases are made within a ten-mile radius of the farm, over 25 percent of the farmers purchase from dealers at greater distances.

The first two rows of Table 2.18 show farmer differences in the distance to the main dealer and the extent to which farmers purchase from their nearest fertilizer dealer. The results here show that farmers in the middle purchase size categories and farmers in the cash crop and mixed farm groups tend to purchase from their nearest fertilizer dealer more frequently than other types of farmers.

2.6.4 Number of Dealers Used

As illustrated in Figure 2.16, most farmers use only one fertilizer dealer at any time. About a quarter of the farmers, however, use two dealers at the same time, and about five percent of the farmers use three. The reasons given by the farmers for using more than one dealer are listed in Table 2.17. The most important reasons are the availability of specific fertilizer products, services, and application equipment together with price considerations and dealer closeness. Thus it appears that in many cases, farmers use a second fertilizer dealer either as a bargaining tool to obtain better prices, or because their regular fertilizer dealer does not have specific products, services, or equipment that the farmer needs. Table 2.18 shows that larger purchase farmers and farmers with higher gross incomes in the livestock and mixed farming categories were more likely to use a larger number of dealers during 1979 than other types of farmers.

Figure 2.17 combines the above information with data on dealer distance to see if there is any relationship between the two. More specifically, this figure shows three distances for each fertilizer type: distance to single source of supply for those farmers using only one dealer, and distance to primary source and secondary source for those farmers using two fertilizer dealers. A primary source is one which accounts for more than half of a farmer's business, and a secondary source is one which accounts for less than half. In most cases where farmers did split their purchases between two dealers, the split was very lopsided with the secondary dealer accounting for only ten to twenty percent of total purchases.

The information in Figure 2.17 shows a very interesting pattern: in all cases, except anhydrous ammonia, where a farmer splits his purchases between two dealers, the primary dealer is located further away than the secondary dealer. Apparently, farmers who use more than one dealer are willing to purchase most of their fertilizer at considerable distance, but, for a variety of reasons, want to purchase some nearer to home.

TABLE 2.17

REASONS FOR USING MORE THAN ONE DEALER, ONTARIO, 1979

Reasons	Percent of Farmers[1]
Availability of specific fertilizer products	40
Price considerations	40
Availability of specific application equipment	19
Close for a specific product	10
Reader loyalty	7
Availability of specific service	6
Better service at particular dealer	5
Coop member	5
Spread fertilizer business among dealers	5

[1] Percent of farmers who used more than one dealer in 1979

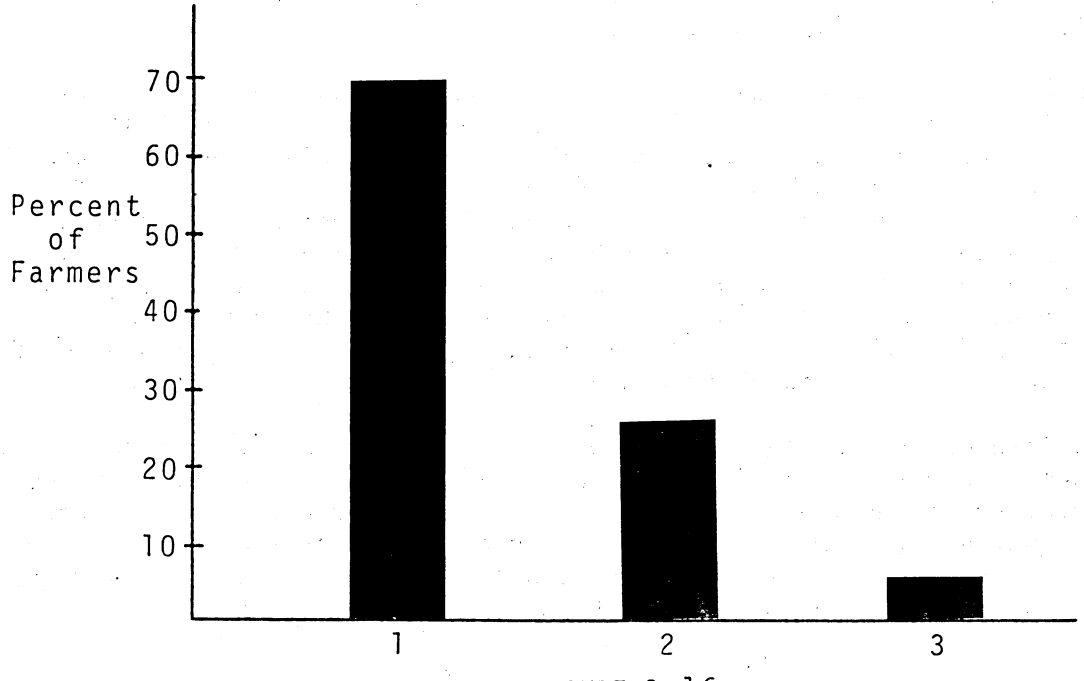

FIGURE 2.16

NUMBER OF DEALERS USED, ONTARIO, 1979

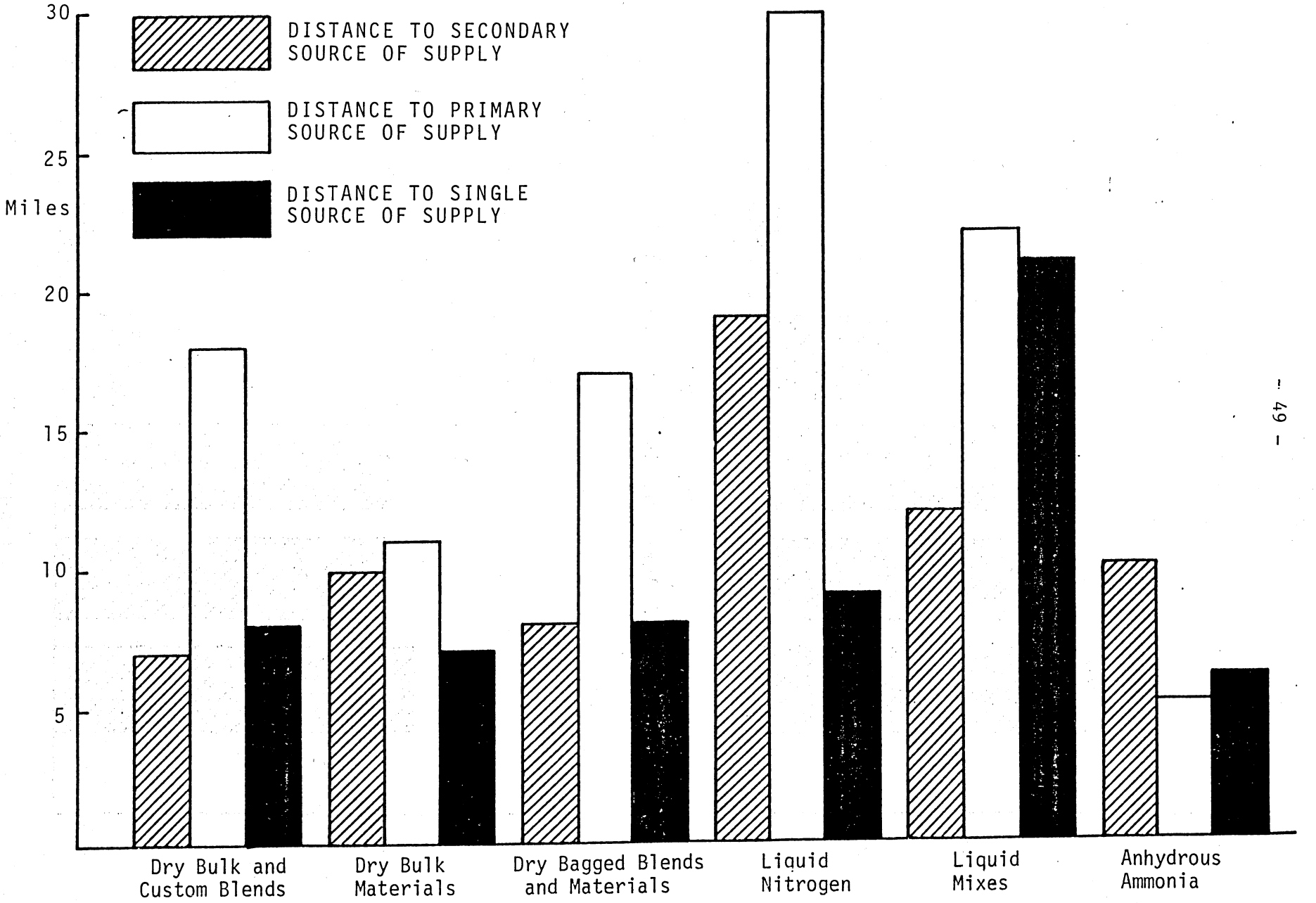

FIGURE 2.17
DISTANCES TO MOST IMPORTANT AND SECONDARY SOURCES OF SUPPLY
FOR FERTILIZERS, ONTARIO,1979

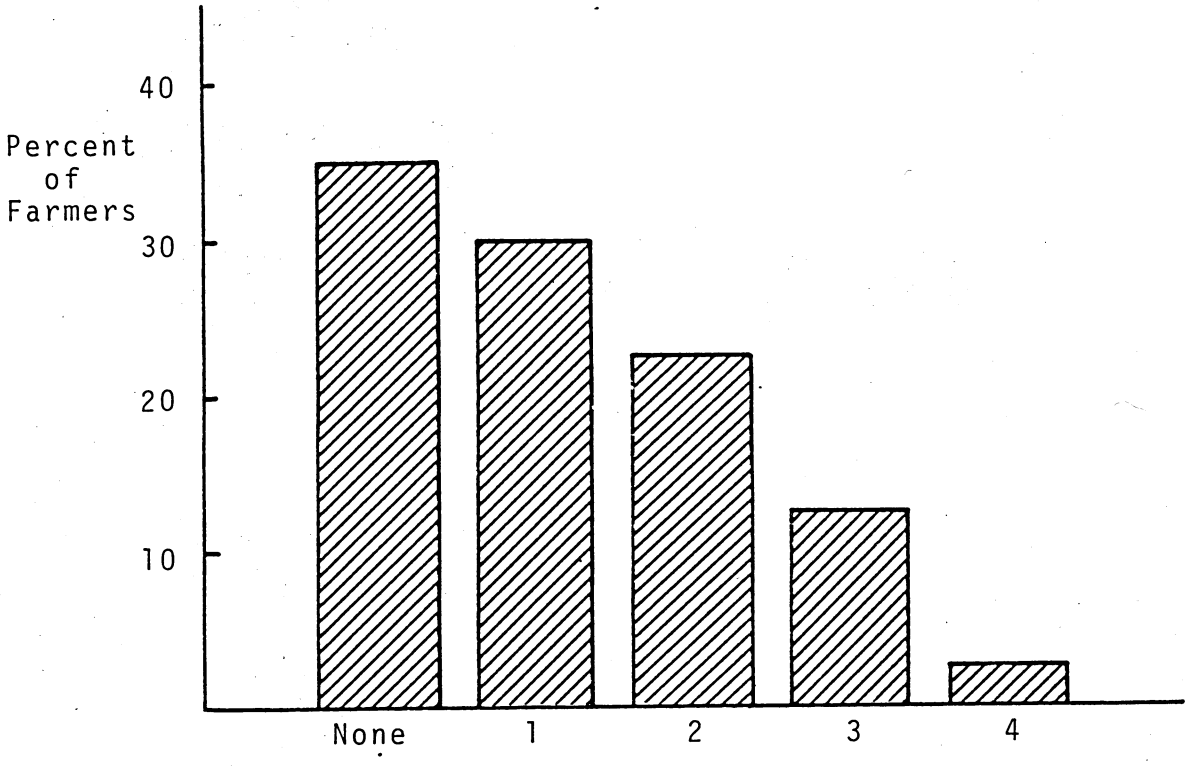

FIGURE 2.18

NUMBER OF DEALER SWITCHES, ONTARIO, 1979

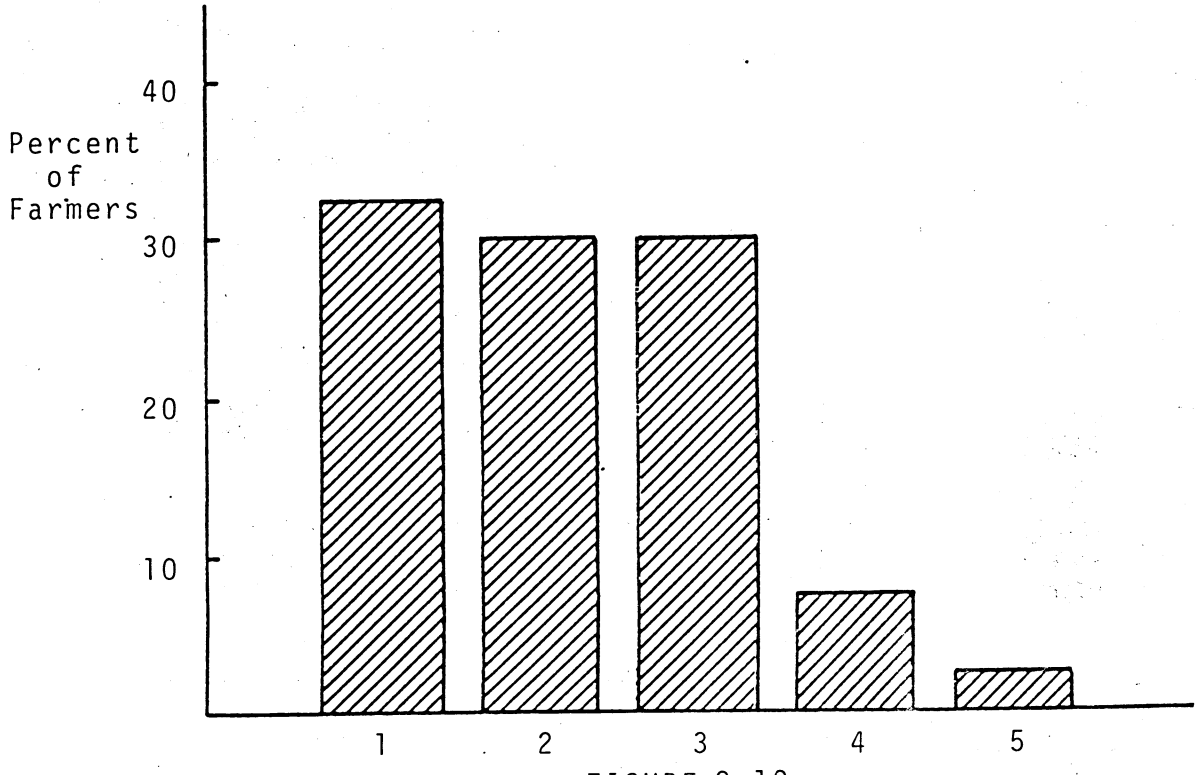

FIGURE 2.19

NUMBER OF DEALERS USED IN LAST FIVE YEARS, ONTARIO, 1979

TABLE 2.18

FARMER DIFFERENCES IN PURCHASING BEHAVIOR, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Distance to main dealer	7.5 MILES						*** Wellington Oxford Huron
Purchase from nearest dealer	45%	*** 25-50 50-100			* Cash crop mixed		** Kent
Number of dealers used in 1979	1.4	* 50-100 over 100		* 100-200 over 200	* Livestock mixed		
Number of dealers used in last 5 years	2.1	* 50-100 over 100				* Under 35	* Huron
Dealer switches	1.0	* over 100			* Livestock mixed	** Under 35	*** Oxford Huron

2.6.5 Dealer Loyalty

In addition to providing information on dealer use in 1979, each farmer was asked to give a complete record of dealers used over the past five years. Results of this question have been summarized in terms of total number of dealers used and number of dealer switches over the past five years and are shown in Figures 2.18 and 2.19. First, with regard to number of dealers used over the past five years, the distribution in Figure 2.19 shows that about 30 percent of the farmers used only one dealer during this period of time, another 30 percent used two dealers, and a further 30 percent used three. Only a small percentage of the sample used four or five dealers during the past five years.

Analysis of these purchasing records also permitted an examination of switching behaviour. Results here, illustrated in Figure 2.18, show that approximately one-third of the sample made no dealer changes at all during the five year period 1975 to 1979, and thus exhibited a very high degree of dealer loyalty. An additional 30 percent made one dealer change, 20 percent made two changes, and approximately 15 percent made three or four changes during this same period of time. Those farmers who made some dealer switches, particularly those who made two or more switches in five years, exhibited a low degree of dealer loyalty.

The last row of Table 2.18 shows the characteristics of those farmers who have a low degree of dealer loyalty. As expected, these results show that farmers with low loyalty purchase large quantities of fertilizer and are in the youngest age category.

2.7 Farm Attitude

The final stage in the analysis of farmer behaviour and preferences was to look at a number of important attitudes related to fertilizer purchasing. This was done by presenting the farmers with a list of attitude statements, and for each statement, having them indicate the extent of their agreement on a six point scale ranging from (1) strongly disagree to (6) strongly agree. For ease of interpretation, the statements have been grouped into the six categories listed in Table 2.19. These categories are: shopping, type of dealer, availability, service, information, and salesmen. In addition, Table 2.20 shows important farmer differences in responses to the attitude statements.

First, with regard to the attitude statements in the shopping category, the results indicate that slightly over half the farmers feel there are important price and service differences among fertilizer dealers. Corresponding to this, slightly under half of the sample farmers agree that much of their fertilizer purchasing is based on habit, while exactly half feel that dealing with only one fertilizer dealer reduces their bargaining power. It is interesting to observe in the first statement that only 15 percent of the farmers feel that fertilizer purchasing is more difficult than purchasing other production inputs. The farmer differences in Table 2.20 indicate that large

Table 2.19

RESPONSES TO ATTITUDE STATEMENTS, ONTARIO, 1979

Attitude Statements	Strongly Disagree % of Farmers	Disagree % of Farmers	Agree % of Farmers	Strongly Agree % of Farmers
SHOPPING				
Purchasing fertilizer is more difficult than purchasing other products such as feed, seed, and chemicals.	24	48	12	3
There are important differences in the quality of services provided by different fertilizer dealers in my area.	7	35	46	12
A farmer can save a lot of money by looking around for the best deals in fertilizer.	5	29	40	26
I feel much of my fertilizer purchasing is based on habit.	17	39	34	8
If you only deal with one fertilizer dealer you loose your bargaining power.	14	36	37	13
TYPE OF DEALER				
I would rather purchase my fertilizer from a small dealer than from a large one.	15	51	31	3
I would rather purchase my fertilizer from an independent dealer than from a dealer who is owned by a major fertilizer supplier.	9	43	38	9
I would rather purchase my fertilizer from a dealer who carries a complete line of farm supplies than from a dealer who only sells fertilizer or crop inputs.	17	41	33	9
I would get much better service from a fertilizer dealer who sells only fertilizer than from a dealer who also sells other products.	21	37	26	5
Coops provide better service than other fertilizer dealers.	29	46	19	2
AVAILABILITY				
The fertilizer products I want are readily available at my dealer.	3	4	36	56
Being able to obtain my fertilizer exactly when I want it is more important than saving a few dollars a ton.	3	14	54	28
SERVICE				
I want good service from my fertilizer dealer and I'm willing to pay for it.	3	19	65	13
My dealer provides prompt and personal assistance with my fertilizer problems.	2	13	57	28
I would hesitate doing business with a dealer who didn't stay open at night or on Sundays and Holidays during the planting season.	14	15	44	27
INFORMATION				
The fertilizer dealer I am doing business with does a good job of supplying me with information.	1	9	62	28
The information supplied by most fertilizer companies is misleading.	9	67	20	2
A lot of advertising done by agricultural companies is misleading.	2	39	46	10
SALESMEN				
I'm always happy to discuss my fertilizer program with company or dealer salesmen.	3	13	53	30
Fertilizer salesmen are an unnecessary service which simply adds to the cost of fertilizer.	8	31	42	19

TABLE 2.20

FARMER DIFFERENCES IN RESPONSE TO ATTITUDE STATEMENTS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL[1] FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM INCOME	AGE	COUNTY
Purchasing fertilizer is more difficult than other products	2.7			** Under 50 50-100			
There are important quality differences among dealers	3.7	** Over 100					
A farmer can save money by shopping for best deals	4.2	** Over 100	* Over 400			** 45-54	
Much of my fertilizer purchasing is based on habit	3.2						
If you deal with one dealer you loose your bargaining power	3.4	* Over 100					* Oxford Huron
Rather purchase from a small dealer than a large one	3.0	*** Under 25	*** Under 200 200-400			** 35-44 45-54 Over 55	
Rather purchase from independent dealer than one owned by fertilizer company	3.5	** Under 25 over 100				** 45-54	

TABLE 2.20 (CONTINUED)

FARMER DIFFERENCES IN RESPONSE TO ATTITUDE STATEMENTS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME	FARM TYPE	AGE	COUNTY
Rather purchase from dealer who carries complete line of farm supplies	3.2						** Oxford
Get better service from dealer who sells only fertilizer	2.8						** Wellington Huron
Coops provide better service than other fertilizer dealers	2.4	* Under 25		* Under 50 50-100			** Wellington Oxford Huron
Fertilizer products I want are readily available	5.4			* Under 50 50-100 100-200			** Kent
Being able to obtain fertilizer exactly when I want it is more important than price	4.7	* 50-100 Over 100			* Cash crop mixed	** Under 35 35-44 Over 55	
I want good service and am willing to pay for it	4.3				* Cash crop mixed		** Kent Oxford Huron
My dealer provides prompt assistance with my problems	4.8						*** Kent Oxford

TABLE 2.20 (CONTINUED)

FARMER DIFFERENCES IN RESPONSE TO ATTITUDE STATEMENTS, ONTARIO, 1979

CHARACTERISTICS / VARIABLES	ALL FARMERS	SIZE OF PURCHASE (tons)	TOTAL ACRES	GROSS INCOME ($000)	FARM TYPE	AGE	COUNTY
Hesitate doing business with dealer who didn't stay open on Sunday's and holidays	4.2	** 50-100 over 100	** 200-400 Over 400				
My fertilizer dealer does good job of providing information	4.9						*** Wellington Kent Oxford
Information supplied by most fertilizer companies is misleading	2.8						
A lot of advertising is misleading	3.9						
Always happy to discuss fertilizer program with salesman	4.3	*** 25-50 50-100 Over 100				* Over 55	* Oxford
Fertilizer salesmen are unnecessary service	4.0						*** Wellington Kent Huron

[1]Calculated using a six-point scale ranging from (1) strongly disagree to (6) strongly agree; higher numbers, therefore, represent greater agreement.

purchase farmers are the most likely to detect price and service differences among dealers, and to hold the opinion that dealing with only one dealer reduces their bargaining power. Small to medium gross income farmers, on the other hand, are the most likely to feel that fertilizer purchasing is more difficult than purchasing other production inputs.

The second group of statements in Table 2.19 are concerned with dealer type. Here the results show a fairly even split between farmers who prefer small dealers, independent dealers, and specialized dealers versus those who prefer large dealers, dealers owned by major suppliers, and dealers that carry a broad product line. There is, however, widespread disagreement with the statement that coops provide better service than other types of fertilizer dealers. Some interesting differences emerged among farm and farmer types in the responses to these statements. First, it is clear that smaller purchase farmers, farmers that operate smaller acreages, and farmers in the middle and older age categories are most likely to prefer doing business with smaller fertilizer dealers. Secondly, farmers in both the very small and very large purchase segments are more likely to prefer independent fertilizer dealers than farmers in the middle size of purchase groups. Finally, farmers who feel coops provide better service are the smaller farmers in terms of size of purchase and gross farm income.

Two statements were used to assess farmer attitudes toward fertilizer availability. Here the results showed that most farmers feel that almost all the fertilizer products they need are readily available at their fertilizer dealer, and that availability in terms of obtaining the product exactly when it is needed is more important than small price savings. The larger farmer was the least likely to feel that most products were available at his fertilizer dealer, and the most likely to feel that availability when needed was more important than small price savings. Availability when needed was also found to be of more importance to both the younger and older farmers than the middle age farmers.

The responses to the three statements related to dealer services indicate that most farmers want good service from their dealer, that they feel they are getting fairly good service now, but that they would be hesitant to continue doing business with a dealer who would not provide good service, for example, staying open for long hours during busy seasons. This last attitude was particularly strong among larger purchase farmers. In a similar vein, most farmers feel that both fertilizer dealers and companies are doing a fairly good job of supplying information, even though some of the advertising that is done is perceived as being misleading.

Finally, with regard to salesmen, well over 80 percent of the sample expressed the opinion that they were always happy to discuss their fertilizer program with dealer and company salesmen even though almost 60 percent feel salesmen are an unnecessary service which simply adds to the cost of fertilizer. It is interesting to note that the middle to large purchase farmers and the older farmers are more likely to want to discuss their fertilizer program with salesmen than are the small purchase farmers and younger farmers.

3.0 SUMMARY AND CONCLUSIONS

The purpose of this report has been to investigate the behaviour and preferences of Ontario farmers in purchasing and using fertilizer products and services. The major findings, and their implications for the development of effective fertilizer marketing programs are:

(1) In the course of a year, farmers discuss their fertilizer program with a number of parties in order to obtain information and advice on various aspects of fertilizer use and dealer selection. Survey results showed that the influence group consulted by the largest percentage of farmers in the process of making fertilizer decisions is the local dealer.

From a marketing point of view this result points out the fundamental importance of the local dealer in transmitting information to farmer customers. Any efforts to improve the dealers' ability to fulfill this function will be perceived favorably by customers, particularly customers in the important large purchase, younger farmer segment.

(2) Two other influence groups are also widely consulted by farmers: other farmers and family members. Because these groups play an important role in influencing farmer decisions, marketers should make every effort to insure that this influence is favourable to their products and services. This can probably best be done by maintaining an overall good image, and preventing serious problems from arising in areas farmers consider important. It is also important to determine which "other farmers" are indeed influential in the community, and then direct marketing efforts at these individuals. This, of course, will help to insure that favourable word-of-mouth is disseminated throughout the community with a minimal cost to the marketer. In the same vein, it is becoming increasingly important for marketers to determine how farm families make purchasing decisions. Such questions as: Who is the decision-maker? What is the role of the wife in purchasing decisions? How are purchasing responsibilities divided where several family members are involved? are of a great deal of importance in understanding this process and directing marketing efforts appropriately.

(3) In addition to the above influence groups, fertilizer company representatives, agricultural extension officials, and university scientists, are consulted by some farmers. In the case of the company representatives and university scientists, proportionately more larger farmers visit these people than smaller farmers. This is particularly true for university scientists where only the very largest farmers take the time and effort to make these kinds of contacts. Of these three groups, only company representatives are under the control of fertilizer marketers. Because these people have the greatest contact with the larger, and in some sense the more important accounts, it is obvious that they must possess the characteristics desired by farmers in this segment. Although this research did not attempt to determine these characteristics, the fact that company representatives are viewed as an important source of information to solve technical problems suggests that technical expertise is certainly one of the most important. Although extension officials and university scientists

are outside of the direct control of marketers, this does not mean that they should be ignored. Indeed, efforts to maintain cordial working relationships with these people can be beneficial, particularly in the long run.

(4) In addition to seeking information and advice from other parties, farmers also can attend fertilizer related events and read fertilizer related publications. Survey results here showed that attending farmer meetings, visiting fertilizer company and dealer displays at farm shows and fairs, and reading Publication 296 (OMAF Field Crop Recommendations) were the most popular activities, particularly for the larger farmers. Another activity which was not as widely used was visiting company and dealer demonstrations. The lack of attendance at such events is probably because not many companies or dealers sponsor demonstrations (or they don't publicize them very well), rather than because farmers are not interested in attending. Indeed, a high proportion of farmers indicated they would make use of this opportunity if available. These results clearly suggest that farmer meetings, farm shows, and company and dealer demonstrations have the potential of reaching a sizeable proportion of fertilizer users, particularly those in the larger purchase and higher income categories. As a result, they should be considered for continued, and in some cases, expanded use in the future.

(5) As indicated above, almost all farmers contacted at least one fertilizer dealer prior to purchase in 1979. Further analysis indicated that the majority of these farmers contacted more than one dealer. Indeed, over 30 percent of the sample reported contacting three or more dealers during the year. In addition to contacts initiated by farmers, there were also a considerable number of dealer initiated contacts. As a matter of fact, slightly more than one-half of the sample responded that they received at least one dealer call in the past twelve months. Although, as the above indicates, most farmers have contact with dealers during the course of the year, the pattern of contact is very uneven from one group of farmers to another. Specifically, medium to large purchase farmers, and farmers in the young and middle age categories, are the most likely to initiate dealer contacts. Conversely, there is a definite tendency for dealers to concentrate calls on very large purchase farmers and farmers in the youngest age group. Because of the present and future importance of this segment (very large purchase, young farmers), this strategy of maximizing contact with this group cannot be questioned. It is important to point out, however, that if this is done at the exclusion of other groups, some important opportunities can be overlooked. A good example is the medium and large purchase farmers in the middle age categories. Because these farmers value dealer information, and because they are contacted much less frequently than the very large purchase, young farmers, companies or dealers who concentrate more time and attention on this group could enjoy a considerable amount of success.

(6) Although farmers have a wide variety of sources from which they can obtain fertilizer information, the usefulness of these sources depends on the type of information required. Survey results showed that the following sources (listed in order of importance for each information type) were those considered most important for the four types of information considered in the research:

a) Fertilizer Application -- Soil tests, fertilizer dealer, Publication 296, other farmers, government/university research stations, and farm magazine articles.

b) Proper Fertilizer -- Soil tests, fertilizer dealer, Publication 296, other farmers, government/university research stations.

c) Technical Problems -- Fertilizer dealer, fertilizer company representatives, extension agents, government/university research stations.

d) Selecting Dealers -- Other farmers, fertilizer dealers, fertilizer company representatives, farmer meetings, farm magazine/newspaper advertisements.

Several observations can be made about the above results. First, it is obvious that the fertilizer dealer is the only source rated important for all types of information. This further underscores the importance of the dealer in transmitting information to farmers, and the consequent need for dealers to continually update their technical and marketing skills. Second, these results show the importance of objective information sources such as soil tests. Publication 296, and government/university research stations in providing specific information on fertilizer application and use. Companies and dealers should be familiar with these sources and attempt to aid farmer customer in using them to the best advantage. Third, with the exception of other farmers, all of the sources cited as important in dealer selection decisions are controllable by fertilizer marketers. This implies that the proper use of such sources as company representatives, farmer meetings, and magazine/newspaper advertising can be important in attracting new customers to a dealership.

(7) Efficient and effective communications with the farm market depends not only on the proper matching of communications media with the type of message or information to be disseminated, but also the proper matching of media with the target market to be approached. Results of the survey provide some important guidelines in this regard. Specifically, the results showed the following relationships between various media and the type of farmer most likely to rate each media as being very important:

Media	Farmer Type
Fertilizer Dealers.	Larger purchase farmers.
Other farmers.	Very small purchase farmers.
	Very large purchase farmers.
Publication 296.	Larger purchase farmers.
Company Representatives.	Larger purchase farmers.
	Livestock farmers.
	Younger farmers.
Soil Tests	Medium purchase farmers.
Farmer Meetings.	High gross income farmers.
	Medium purchase farmers.

The above results do not mean, for example, that only larger purchase, younger, livestock farmers rate fertilizer company representatives as being highly important, but they do point out that significantly more farmers in this segment have this opinion than farmers in other segments. Accordingly, these results can be useful in allocating communication dollars to target markets. In the case of company representatives, given a limited number of such people, the results suggest first allocating their time and effort to the larger purchase, younger, livestock farmer segments where returns will likely be greatest. Additional time can then be assigned to other segments where returns still may be substantial, but not as great as in the first segment. This procedure, if followed for all the controllable media, should increase the productivity of communications expenditures.

(8) Different types of farmers use distinctively different approaches in making fertilizer purchasing decisions. Four such approaches were identified as being of prime importance. These approaches, and the percentage and type of farmers most likely to follow each are:

Description	Farmer Type	Percent
Shopping/No Loyalty		
Contact a number of fertilizer dealers, get price quotes, purchase from dealer with lowest price.	Larger Purchase Middle Age	26
Shopping/Some Loyalty		
Obtain prices from a few dealers before trying to make a deal with a preferred dealer.	Medium Purchase Young	24
No Shopping/Loyal		
Make a list of fertilizer requirements and then contact a fertilizer dealer to place an order.	Small Purchase Older	25
No Shopping/Loyal		
Wait until contacted by my fertilizer dealer and then place an order.	Medium Purchase	10

The above findings are not only very interesting, but have important implications for fertilizer marketers. First, they can be of use in selecting target markets. Organizations that choose to concentrate their marketing efforts on the larger purchase segment must realize that although these farmers account for a large proportion of fertilizer sales, they are also the most likely to bargain with dealers and make decisions on the basis of the lowest price. As a result, they exhibit a much lower level of dealer loyalty than any other group. Medium and small purchase farmers, on the other hand,

might bargain to some extent with suppliers, but in general they have strong dealer preferences and are not as inclined to make dealer changes. Second, the results show that there is a certain, small percentage of farmers who do not purchase fertilizer, but are sold. These are the individuals who wait until they are contacted by fertilizer dealers before placing an order. In looking at some of the other groups, in particular the 25 percent in the no shopping/loyal group, one wonders whether contacts by dealers with these farmers could not also result in sales. In other words, there appears to be substantial opportunity to increase sales in the small and medium purchase segments by perhaps just making a few phone calls or farm visits. Third, the results suggest that a dealer's bargaining approach might be different from one segment to another. For instance, because of the pricing or bargaining methods used by larger purchase farmers, dealers may be wise to quote their best price right away, whereas with smaller purchase farmers the best approach may be to start at a higher level and then reduce this if necessary when the farmer asks for a slightly better deal. In both of the above cases, the general perception of farmers that fertilizer dealers enjoy a ten to fifteen percent profit on every unit of fertilizer sold may give some insight into the size of price discounts those farmers who bargain expect when dealing with their fertilizer supplier. Finally, the fact that there is a sizeable proportion of farmers who have established dealer preferences based primarily on factors other than price underscores the importance of marketing programs which stress these other factors (other products, services, dealer image). These will be discussed at length in a later section.

(9) There is considerable veriability among farmers in their attitudes toward the importance of price. About one-half of farmers feel that price is extremely important, and therefore would usually buy from the dealer with the lowest price. The importance of price to the other one-half is somewhat less. With the exception of some tendency for larger acreage farmers in the medium age category to be more price sensitive (as measured by the attitude statements used), no clear cut profiles of price sensitive versus price insensitive buyers emerged. This is somewhat at odds with the previous section where important differences were found among groups of farmers with respect to price sensitivity as measured by actual behaviour. Because attitude measures are only predictors of possible behaviour, more confidence should be placed in the actual behavioural measures themselves. Related to the above attitudes is the attitude shared by many farmers that there are important price differences among fertilizer dealers. It is interesting to note that this attitude is more strongly held by larger purchase farmers -- those who, as the previous section discloses, search out these price differences by getting quotes from a number of dealers.

(10) Three other price attitudes held by most farmers have some important implications in the development of an overall pricing strategy. These are: first, most farmers, especially the smaller purchase farmers, feel that price is a more important consideration in the Winter than in the Spring; second, many farmers feel that certain types of fertilizer are much better values than other types; and third, substantially more than half the farmers prefer to have materials and services priced separately as opposed to one price for both.

For the most part, the implications of these findings are obvious. In the case of the second attitude, however, a few comments may be in order. What this attitude says in essence is that many farmers perceive certain types of fertilizer to be underpriced or overpriced relative to others. This implies that some adjustments in relative prices among types may be desirable from the point of view of increasing revenue and profits. Unfortunately, no attempt was made in this study to determine which types were perceived as being over or under priced or the likely magnitude of these differences. Because of the importance of product line pricing in the overall pricing strategy of an organization, this question should be explored more fully in future research.

(11) A final pricing attitude shared by a large proportion of farmers is that the price of fertilizer is unreasonably high. Indeed, tabulation of responses to this statement indicate that almost 80 percent of the sample farmers agree to some extent with this statement. A comparison with the results of other studies where the same question was asked, puts this into better perspective. For example, in recent studies of seed and herbicide purchasing, 59 percent and 83 percent of the farmers respectively responded in a similar fashion. To some extent it is undoubtedly true that farmers always feel they are paying too much for items they must buy. Industry action on this point, however, may be desirable to explain why prices are high, and the fact that despite high prices, fertilizer is still a good value for most farm operations.

(12) In addition to fertilizers, Ontario farmers on the average purchase more than three other products from their fertilizer supplier. Of these, the most common are: herbicides, insecticides, general farm supplies, and farm seeds other than corn. Other, less frequently purchased items, include: seed corn, feeds, and animal health products. Very few farmers reported purchasing fertilizer specialty items such as limestone and micronutrients from their fertilizer dealer. An analysis of the type of farmer purchasing each product from a fertilizer dealer revealed that the medium to large purchase farmers have a greater tendency to purchase herbicides and other farm seeds from their fertilizer dealer, while the very large purchase farmers have the greatest tendency to purchase insecticides. Also, as one would expect, the results showed that small to medium gross income, and livestock and mixed farmers were the most likely to purchase feeds and/or premixes at the same location as their fertilizer. These results underscore the importance of tailoring a dealer's product line with his target market. If, for example, a dealer is making a concentrated effort to attract the very large purchase farmers to his organization, the inclusion of insecticides in the product line would be one important element in an overall marketing plan.

(13) In addition to looking at the aggregate purchase of non-fertilizer items at fertilizer dealers, the analysis also explored the balance of supply and demand for these products. The results of this further analysis revealed that some excess supply exists in all product areas, but particularly in seed corn, feeds, animal health products, limestone, and micronutrients. This, of course, does not imply that dealers should immediately drop these items. It does, however, suggest the need for careful analysis on a location by location basis to determine if the local demand for each product, together with the

products costs and margins, justify its continued existence in the product line. Or alternatively, this type of analysis may show that farmers are not purchasing the item from a fertilizer dealer because they are not aware that it is being carried by the dealer, or they perceive that it is too high priced or not supported with sufficient technical expertise, or for some similar reason. If this is the case, the dealer once again must analyze whether the increased costs of promoting and supporting the product can be justified by the potential demand. On the other side of the coin, the research showed some unfilled demand for a few products, most notably: other farm seeds, general farm supplies, limestone, and micronutrients. In all cases this unfilled demand represented less than 15 percent of the farmers; however, it could be substantially higher at individual locations, again suggesting the need for more detailed analysis of local demand, costs, and margins before adding or dropping products from the line.

(14) For many fertilizer dealers, decisions regarding the type and extent of services to offer are more important than product line decisions. This is particularly true in mature market areas where the provision of specialized services for specific market segments may represent the best opportunity for sales and profit growth. The results of this study provide some important guidelines in this area. First, the results suggest that there are some services which are considered essential by all but a very small proportion of farmers. These services are:

a) application equipment which is available when needed and in good condition,

b) custom application services,

c) custom fertilizer blending,

d) fertilizer information through a well-informed staff, brochures, newsletters, and farmer meetings,

e) soil testing, and

f) demonstrations.

Second, the results show some important differences among farmers in their current or likely use of services. Specifically, the results showed the following relationships between service desirability and farmer type:

Services	Farmer Type
Farmer Meetings. Demonstrations.	Younger.
Information Services including obtaining expert advice, providing agronomic information, and crop management services.	Younger and Middle Age. Larger.
Application Equipment and Custom Application Services.	Larger.
All Services.	Cash Crop and Mixed.

As in the case of product line decisions discussed earlier, this information is of major importance in providing the proper services for each target market.

(15) In addition to looking at the aggregate demand for a variety of fertilizer services, an attempt was made to investigate the balance of supply and demand for these services. For the most important and widely used services this analysis showed a very close approximation between service availability and use. There were, however, a number of services for which availability and demand were not so closely matched. In particular, those services which are perceived as being widely available, yet seldom used, include: plant tissue analysis, limestone application, grain purchasing, and herbicide application. On the other hand, those services which are not as widely available, yet probably would be used by sizeable proportions of farmers, include: separate loading facilities for different size loads, demonstrations, plant tissue analysis, limestone application, and crop management services. As in the case of product line decisions, the addition or deletion of services depends on a careful assessment of local market conditions, costs, and ultimate returns. The results of this survey can be an aid to marketers in identifying areas for further study. They also point out the role of marketing in matching service needs with availability. This point is particularly well-made when one considers the fact that plant tissue analysis and limestone application are included on both of the above lists. This simply means that fertilizer marketers have not done a good job in matching the availability of these services with needs. Successful marketing depends on a high level of performance in this area.

(16) Ontario farmers purchase fertilizers from a variety of sources. Overall results showed most purchases (28 percent) were made from farmer cooperatives, followed closely by multiple outlet chains (23 percent), and retail outlets of major suppliers (19 percent). Small independent dealers with and without production facilities each accounted for 15 percent of total sales, while imports from the United States were approximately one percent. Analysis by type of farm revealed some very interesting relationship between farm characteristics and type of dealer used.

Dealer Type	Farmer Type
Retail Outlets of Major Fertilizer Suppliers.	Medium purchase size Livestock Younger
Cooperatives.	Small purchase size Mixed Middle Age
Multiple Outlet Independents.	Medium purchase size Cash Crop Middle Age
Small Independents.	Small purchase size Livestock Middle Age to Older

This information clearly shows that different types of farmers have preferences for different types of dealers. In a sense, the above groupings can be termed "natural market segments" because they represent the natural preferences of farmers for dealer types. This becomes important information when making target market decisions because it shows what may be deeply rooted preferences which can be extremely difficult to overcome. For instance, given the above results it may be very difficult for smaller, independent dealers to attract large purchase, younger farmers, whereas this may be considerably easier for the retail outlets of major fertilizer suppliers.

(17) The analysis of reasons for dealer selection revealed that three factors are of overwhelming importance to almost all farmers: dealer location, price, and availability of product when needed. In general, dealer location and availability of product when needed were felt to be more important to smaller farmers, while price was considered more important by larger farmers. Beyond these three factors, the farmers identified a large number of reasons for selecting specific dealers such as: equipment considerations, availability of specific products and/or services, buying or selling other products at the same outlet, delivery, good working relationship with dealer, personal friendships, dealer loyalty, etc. Although none of these factors were mentioned by a large proportion of farmers, they can assume a high degree of importance in mature market situations where farmers do not perceive much difference among dealers in the three main areas of location, price, and availability. When this is the case, farmers look to other areas where differences can, and often do, exist. As a result, dealers must constantly strive to determine what these other areas are, and then take the necessary steps to insure that their performance in these areas is perceived as being better than competition.

(18) The fact that location is important in dealer selection decisions was substantiated by the finding that 45 percent of all farmers purchased fertilizer from their nearest dealer. On the average, Ontario farmers purchased from dealers located 7.5 miles from their farms, although the median (middle) distance was 5.5 miles and the mode (most frequently occuring) distance was 4.0 miles. When compared to the 4.0 mile average distance to each farmer's closest dealer, these results suggest there is little room for additional physical distribution facilities in the areas studied. Indeed, the opposite situation may be the case: in very highly saturated markets there may be some very good reasons for eliminating existing distribution facilities instead of adding new ones. Obviously a very exhaustive analysis of the consequences of such a course of action must be made prior to any decision.

(19) One consequence of having such a large number of fertilizer dealers in most areas is the fact that it allows farmers to do business at more than one source. Despite this fact, results here showed that only 30 percent of the farmers purchased from more than one dealer in 1979; however, because these are larger purchase farmers, the volume involved is considerably higher than the number of farmers would suggest. An analysis of the reasons for using more than one dealer revealed two underlying motivations: first, some farmers do this to bargain for better prices; and second, others do it because they cannot obtain the specific products, services, or equipment they need from one

dealer. This latter point once again underscores the importance of matching a dealer's product and service offering with the specific demands of his target market. Failure to do this most definitely results in loss of business to competitors who are doing a better job.

(20) The primary measure of dealer loyalty used in this research was the number of dealer switches made by a farmer over the past five years. Results here indicated that approximatly one-third of the farmers made no dealer changes hence exhibited a high degree of dealer loyalty; another one-third made one dealer change hence exhibited a medium degree of dealer loyalty; and a final one-third made two or more dealer changes representing low dealer loyalty. As found in several previous studies dealing with seeds, feeds, and chemicals, those farmers who made several dealer changes were the larger purchase, younger farmers. Marketers attempting to attract this segment must recognize this fact and anticipate higher customer turnover rates than if they were dealing with other segments of the fertilizer market.