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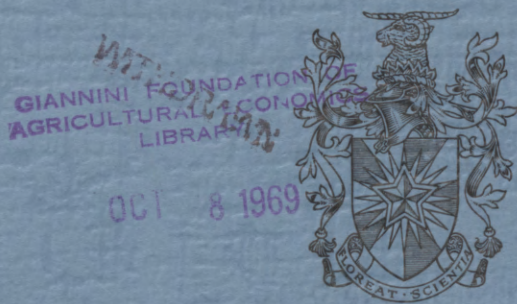
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MASSEY UNIVERSITY *of Manawatu*



AN EXAMINATION OF THE NEED FOR,
AND FEASIBILITY OF,
A FARM INPUT COMPARATIVE EVALUATION
SERVICE IN NEW ZEALAND

B. G. O'DONNELL

June, 1969

DISCUSSION PAPER NO. 52
DEPARTMENT OF AGRICULTURAL ECONOMICS
AND FARM MANAGEMENT
MASSEY UNIVERSITY, NEW ZEALAND

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AUTHOR'S NOTE

This Discussion Paper contains the original contents of my thesis, with the omission of Chapter III and the Appendices. Chapter III has been reproduced as Discussion Paper No. 51, available from the Department of Agricultural Economics and Farm Management, Massey University.

The original thesis may be obtained on loan from the Massey University library.

B.G.O'DONNELL

June 1969

PREFACE

This study is concerned with farm incomes and recognises that product prices are largely beyond the control of farmers or government. Accordingly, attention has been focussed on farm costs and in particular on the problem of making an informed decision on the purchase of farm inputs.

Evidence is presented which reveals that over three-quarters of a sample of 400 farmers feel a need for an input evaluation service which would provide impartial information on a wide range of goods and services used in farming. This need is backed by a willingness to pay for such a service and an annual income of \$150,000 appears to be forthcoming. Mr O'Donnell examines the institutional problems involved and the form such a testing service might take. Given an annual investment in agriculture in excess of \$50 million, the scope for improved allocation of resources and resulting efficiency should commend this work for serious study by government and farm organisations. It provides a feasible and constructive means of containing farm costs based on self-help by the farming community.

A.B.Ward
READER IN AGRICULTURAL ECONOMICS

CHAPTER 1

I N T R O D U C T I O N

1.1 Preface

The problem of choosing the most productive input per \$ to combine with other farm inputs is becoming increasingly magnified with the greater dependence of primary industry on secondary industry for its inputs. Tweeten¹ suggests that in the United States, while the aggregate farm input level has remained nearly constant since the late 1920's, use of purchased inputs has increased approximately 70% since 1929. Breimyer² quotes Ioomis and Barton, who estimate that as recently as 1940 about 66% of the total inputs into agriculture were land and farm-resident labour; however, in 1961 only 37% of the inputs belonged to these classes, showing that non-farm inputs have doubled their proportionate share.

It is suggested that the farmer does not have adequate information at the present time to help him in his decision making as to the most productive inputs to purchase, particularly when the goods produced by the non-farm sector of the economy consist of a few goods which are slightly differentiated in design. The presence of a large number of slightly differentiated goods is associated with specialisation and scale in secondary industry.

1 L.G.Tweeten, "Determining Factor Shares : Discussion", Chap.9 in Farmers in the Market Economy (Ames : Iowa State University Press, 1964), 217.

2 H.F.Breimyer, "The Changing Institutional Organisation", Chap.7 in Farmers in the Market Economy (Ames : Iowa State University Press, 1964), 157.

1.2 Objectives of the Study

The Molony Report³ says, "It was represented to us that the farmer, the small shopkeeper, the boarding-house proprietor, and others in like case, purchase supplies and equipment for business use on so limited a scale, and with so limited a business experience, as to make their problems closely comparable with those of the domestic consumer: and, therefore, that our study should embrace the special difficulties which such groups were said to experience. With that view, we did not agree. The problems experienced by the small business may differ from those encountered by the larger concerns, but only in degree; they all form part of the pattern of commercial relationship arising between those who have elected to buy and sell as a matter of business. As such, they must clearly be set apart from the problems of the purchaser who shops purely in a private capacity. Hence our restriction to goods acquired 'for private use or consumption'".

Given the trend towards more capital-intensive farming methods, the assumption that a farmer has a complete awareness of the effectiveness of various inputs is unfounded.

The increasing proportion of non-farm inputs used in the farm production process, together with the increasing sophistication of these manufactured inputs, suggests that extension is required in the field of input selection.

³ Great Britain Board of Trade, Final Report of the Committee on Consumer Protection (London : H.M.S.O. 1962), 1.

It is a feature of agriculture that research should be provided by Government because of the atomistic structure of the industry where no one farmer can support a research project. In addition, as one aspect of providing for the welfare of the nation, Government has undertaken the responsibility of providing research funds so that the cost of agricultural production may continue to decrease in real terms.

To enable research results to be applied on farms it is necessary for the Government to develop an extension service as an individual farm is too small to employ an agricultural adviser. Government has also accepted it as a responsibility in most countries to provide extension services to enable those who stay in agriculture to attain a reasonable standard of living, and in some cases to move redundant labour out of agriculture as rapidly as possible.

In recent years farmers have cooperated on a local basis to provide their own extension services through the Farm Improvement Club Movement. This Movement has also been a cooperative supply group for certain inputs for farmer members.

A further stage in this Farm Improvement Club Movement would be for farmers to cooperate to enable the comparative testing of certain farm inputs to be carried out. Evidence suggests that a sum of \$100,000 - \$150,000 p.a. could be available to enable comparative testing of farm inputs to be undertaken.

The objectives of this study are : -

- I. To ascertain the adequacy and reliability of commercial information available to the farmer with the present institutional arrangements and the existing legislation.

- II. To classify the type of items on which farmers feel they have insufficient information.
- III. To suggest an institutional framework to either carry out comparative tests or to make information more readily available to the farmer.
- IV. To check the range and price of inputs available to farmers in New Zealand compared with those available to farmers in other developed countries.

1.3 Statement of the Problem

The New Zealand Industrial Production Statistics⁴ indicate that the total value of the goods purchased from secondary industry by farmers is in the vicinity of \$28m. The Inter-Industry Study of the New Zealand Economy 1959-60⁵ produces an estimate of \$21m. Details as to how the estimate was derived are shown in Appendix A.

In addition to inputs manufactured by New Zealand industry, \$32m. worth of farm inputs were imported into New Zealand in 1959-60⁶.

This means the total value of the inputs moving from secondary into primary industry is approximately \$60m. annually.

The figure of \$28m. obtained above, represents 1.2% of the value of factory production in New Zealand, and the figure of \$60m.

4 N.Z. Dept. of Statistics, N.Z. Industrial Products 1965-66 (Wellington : Government Printer), 149-232.

5 N.Z. Dept. of Statistics, Inter-Industry Study of the N.Z. Economy 1959-60. (Wellington : Government Printer), Part 1, Table 1.1.

6. Ibid.

represents 7.8% of the gross farming income (excluding Horticulture, Poultry and Bees), for the year 1964-65. \$60m. represents half the cost of the first three stages of the new iron and steel industry, N.Z. Steel Ltd.

As a percentage \$60m. is not a large figure. However, it must be remembered that labour is an important complementary input with these manufactured inputs. Combining labour with a low quality input can have both a high apparent cost and a high opportunity cost, if the input does not do its particular job adequately.

An example of the cost of labour associated with the use of manufactured inputs is that of fencing. Pearse and Humphries⁷ estimate that the 40m. chains of fencing in New Zealand would have a replacement value of about \$400m. During 1963-64 7.25m. fence posts were used on farm land, representing in terms of fencing (at 3.5 posts and \$10 per chain), an annual expenditure of approximately \$20m. A \$14m. wage bill (2m. chains of fencing at \$7 per chain) could mean a substantial national loss if the labour was combined with inefficient inputs. \$34m. represents a large quantity of resources to be invested nationally, and even a quite small reduction in cost and/or efficiency of use of fencing materials could mean a substantial national saving.

At the present time most farm inputs come under some form of test at the factory level on a quality control basis, or are required by legislation to reach some minimum level of performance. The Standards Association has also developed Standards for some farm inputs to protect the farmer against the purchase of inferior quality goods.

7. H.C.H. Pearse and K.R. Humphries, "Reducing Fencing Costs on Hill Country", Massey Sheepfarming Annual. 1966 (Palmerston North N.Z.) 225.

Tests are also carried out by Government Departments, but trade-names are not published. These tests, carried out by Government Departments in the course of their research activities, only inform the farmer that there are certain faulty goods coming on to, or available on the market, but there is no indication of the particular brands involved.

It is normal policy of Government Departments throughout the world to maintain a position of impartiality in business and commerce by not promoting any particular brands. Since this impartiality is a feature of Government policy it would seem that the test results, stored up in Government Departments would never be available to the public unless pressure were put on the Government to release this information for use by a comparative testing organisation.

1.4 Procedure

The following is the procedure used:

A A review of literature was undertaken to -

- I. Review the techniques used in consumer protection at the present time.
- II. Compare the differences between industrial and agricultural organisation.
- III. Determine the value of cooperatives in agriculture, with particular reference to supply cooperatives: the role of supply cooperatives in selective buying, and the recent development of the cooperative trading group in New Zealand.

- IV. Review overseas attempts to set up a farm input testing service.
- V. Review the attempts in New Zealand to implement a testing service and the present situation in regard to testing.
- B. A survey was undertaken -

The survey was designed to obtain greater insight into the need for an input testing unit by farmers. The review of literature showed a genuine interest in input testing amongst farmers, but the documentation of the items which should be tested, and the organisational features of a testing service were unavailable. The survey used to obtain greater insight into the need for farm input testing took the form of a mail survey, using a two-page pre-tested questionnaire.

The farmers included in the survey consisted of 952 farmers who had already been contacted by telephone in the course of a telephone survey. A further 176 farmers, who belonged to the Manawatu Farm Improvement Club were also contacted.

The data was processed by a computer.

- C. Survey results were tested for significance -

The purpose of a significance test is to provide a means of deciding whether differences in observed data are due to chance variations resulting from sampling. By setting up a

null hypothesis and calculating the probability (p) with which the observed event could have occurred due to sampling, a reasonably objective basis for deciding on the acceptance or rejection of differences is available.

The levels of significance chosen for this study, together with a description of these levels, are shown below:-

$p > 5\%$: the difference is significant

$10\% > p > 5\%$: the difference may be significant

$p > 10\%$: the difference is non-significant (N.S)

Both t-tests and chi-square tests were used to analyse results. The t-test tested whether certain sample means for respondents and non-respondents could have come from the same population⁸, while the chi-square test was applied to examine:-

(i) A hypothesis specifying the frequency

with which observations fall into certain classifications⁹.

8. A.L. Edwards, Statistical Methods for the Behavioural Sciences,
(New York : Rinehart, 1960), 252-255

9. G.W. Snedecor, Statistical Methods (Ames : Iowa State University Press, 1956), 24.

(ii) Contingency tables for the presence or absence of an association between two criteria of classification¹⁰.

In tables where it was felt the criteria were obviously associated, no chi-square test was carried out.

10. Ibid. 225-227

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

The Common Law maxim "caveat emptor" has become progressively more untenable in our mass consumption economy. The increasing range of goods available and their technical sophistication, together with scientific sales techniques and persuasive advertising, have given rise to movements concerned with consumer protection and education.

The "Consumer Movement" has three broad objectives :-

- I. The passage of legislation to protect consumers against the consequences of their ignorance and indifference.
- II The supplying of information to consumers so they will buy more intelligently.
- III. The education of consumers in the techniques of intelligent buying.

2.2 Techniques of Consumer Protection

The nineteenth-century doctrine of "caveat emptor" has been modified since it was enunciated, first, out of consideration for health, but latterly to enable the consumer to be informed of the technical details of the product he was buying.

Legislation in New Zealand to protect the consumer consists of such Acts as the Animal Remedies Act (1967), the Medical Advertisements Act (1942), the Stock Foods Act (1946), the Food and Drugs Act (1947), the Merchandise Marks Act (1954) and the Agricultural Chemicals Act (1959).

Associated with legislation, standards of minimum quality or performance have been developed. Standards, being only a minimum requirement for goods, are a means of protecting the consumer against being sold grossly inferior or harmful goods.

In direct contrast to Standards, grade-labelling is an attempt to communicate in symbols the relative quality of a product. The utility of grade-labelling is limited to simple products with few attributes, because use of a grade requires agreement on the best combination of product characteristics. However it must be remembered that goods with few attributes are those which consumers are most capable of evaluating by themselves. The rapid changes occurring in product and package innovation has meant that if grade-labelling is chosen as a method of consumer protection, there is an enormous grade-labelling task to be undertaken.

Grade-labelling may also have a marked effect on firm organisation. With a system of grading it would seem product differentiation would be reduced, thus promoting price competition. If price competition occurred, there would be smaller marketing margins and less research-and-development revenues.

The Standards Institute was founded in New Zealand in 1932. In

1941 statutory provision was included in the Standards Act for the registration of Standard Marks, as certification trademarks. These trademarks were to be used under license to distinguish goods which conform to Standards Specifications from those which do not. The mark is available to traders under a licence granted by the Minister of Industries and Commerce. The purpose of the mark is to afford effective protection to the public against the purchase of inferior commodities which simulate quality lines, and to protect traders against fake and unfair competition. It was hoped the mark would supplement other guides to selection, making labelling more informative and trademarks more effective means of maintaining the prestige of goods and of upholding the reputation of the business interests concerned.

Unfortunately the development of Standards has not had a marked effect on quality; otherwise there would not be such an interest in the "Consumer Movement". The insignificant effect of Standards on quality, coupled with a wider range of, and more complex goods, has been a major force prompting the development of consumer organisations in a number of countries. These consumer organisations have been the leaders in promoting comparative testing. Comparative testing provides the consumer with an independent source of market information, to supplement the contents of advertisements, the advice of recognised dealers and the experience of other people. These three sources are alternative and supplementary methods of obtaining market facts, but the information obtained from any one source may be limited, biased and misleading.

While having their greatest impact on only those consumers who are members, or their friends, consumer organisations may be said to have benefitted all consumers because of their indirect influence on manufacturers. The risk of an adverse report has caused many manufacturers to take a much greater interest in the quality of the product they are producing.

It must be remembered that there are a number of inherent limitations to testing and rating goods:-

- I. Only branded items may be rated, as purchasers have no way of identifying rated, but unbranded items.
- II. General utility standards for many goods cannot be established, since different users value the qualities and attributes of any product differently.
- III. The durability of many durable goods may be difficult to establish in short-term tests.

In spite of the benefits which are available from a consumer organisation some of these organisations are not expanding in size. Fulop¹ says consumer organisation are not expanding due to the fact that -

- I. Only at certain periods in a life-time does a consumer make large purchases of equipment and only then find membership justifiable.

1. C.Fulop, Competition for Consumers (Institute of Economic Affairs, London : Deutsch, 1964), 225.

II. Only those people with the desire and ability to read comparative reports will subscribe to a consumer organisation.

III. Many people find too much knowledge a dangerous thing and the information sometimes more technical and detailed than they can use.

The long term aspect of consumer protection involves consumer education. The aim of consumer education is to enable consumers to identify their needs, to make a reasoned assessment of the alternative goods available, or the alternative means available to meet their needs. With the available information consumers can make a logical selection in terms of their own satisfaction rather than the convenience of manufacturers or retailers.

Associated with consumer education is "consumer enlightenment" whereby objective information is supplied about the available goods and services. "Consumer enlightenment" is directed towards the whole community using all forms of publicity and communication, including the publication of informative leaflets on goods, services and legislation as they affect the consumer. The process of enlightened information differs from more direct consumer education in that information may be received passively, while direct education involves active consumer response and participation².

2. Great Britain Board of Trade, Final Report of the Committee on Consumer Protection (London : H.M.S.O., 1962), 6.

2.3 Industrial Organisation and Agriculture

Farmers are unaccustomed to the organisation and selling techniques of secondary industry because of the different structural characteristics of firms in this industry compared to firms in farming.

Lanzillotti³ suggests that because of the structural features of agriculture, i.e. size - distribution of farms, product homogeneity, the level of managerial skill, exit barriers, demand - supply elasticities etc., there is a situation conducive to an inferior bargaining position for farmers. In addition farmers are not able to escalate cost increases forward in the administrative fashion of manufacturing industry. Agricultural income behaves quite differently from that of manufacturers over the course of business fluctuations. Over short-run periods it is to be expected this imbalance in market power will aggravate the farmers' worsening terms-of-trade vis-a-vis suppliers, thus resulting in lower real farm income.

In New Zealand fluctuating incomes can lead to wage increases which are reflected in cost increases to the entire economy. Periods of high prices for the farming sector of the economy lead to wage increases, but periods of low prices do not produce wage declines. The long-run result may be a steadily increasing cost structure with falling export prices.

Sartorius⁴ says the important aspect in considering the organisation of agricultural supply industries is whether there is workable competition to the extent that these industries set approximately the lowest possible

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3. R.F.Lanzillotti, "The Superior Market Power of Food Processing and Agricultural Supply Firms - its Relation to the Farm Problem", J.Fm. Econ., 42: 1243-1244 (1960).
 4. L.C.Sartorius, "Market Structures and Market Power - Discussion", Chap.5 in Farmers in the Market Economy (Ames : Iowa State University Press, 1964), 117-120.

cost for the goods they produce and distribute. Sartorius contends that product competition is an effective form of competition in non-standard products. He suggests that the presence of concentration and of administered prices does not mean there is no competition in farm supply industries.

Slater⁵ suggests that the economies of scale and the level of innovation provided by the present oligopolistic market structure contributes more to farmers' incomes than the resource redistribution which would occur in a purely competitive market structure.

Bain⁶ says that, to look at the extent of oligopoly present in a market, an analysis of the ease of entry into concentrated markets would seem relevant. The extent of oligopoly can be evaluated roughly by the advantage of established sellers in an industry over potential entrant sellers, these advantages being reflected by the extent to which established sellers can persistently raise their prices above a competitive level without attracting new firms into the industry.

New Zealand as an entire market cannot be entered easily by some farm inputs. On the criterion of Bain's discussed above it would seem that the degree of oligopoly (or monopoly) for certain farm inputs in New Zealand is absolute, because of the system of import licensing practised. It is possible for some manufacturers to raise their prices above a competitive level persistently and not attract new firms into

5 G.R.Slater, "Discussion : The Relative Market Power of Farm Machinery Manufacturers", J.Fm.Econ., 42: 1254, (1960).

6. J.S.Bain, Barriers to New Competition (Cambridge, Mass: Harvard University Press, 1965), 2-4.

the industry, simply because no new licences are available to allow a new industry to operate, and where the market may be too small to support more than one manufacturer.

Advertising has been associated with the development of oligopolistic industry, a feature of which is product competition, rather than price competition. Millar⁷ says advertising should exist to fulfil one of both of the following two functions:-

- I. Increase sales to the point where not only advertising costs are retrieved, but where prices can be cut and this cut passed on to the consumer
- II. Provide consumers with the kind of information needed if they are to make a discriminating choice.

If advertising does not fulfil either of these functions then the consumer will be paying more for goods than he need pay and be no wiser about the respective merits of competing brands.

There is a real need for information on the price and, more importantly, the quality of goods available for purchase. This is particularly so in the case of complex and durable goods, as are a number of farm inputs. Many farm inputs are made by heavy industry with its relatively long history of association with technical information and services, but the information needs to be interpreted for the benefit of the farmer.

7 R.Millar, The Affluent Sheep (London : Longmans, 1963), 59.

Sartorius⁸ agrees that there are many examples of advertising and promotion that could be considered wasteful, but it is necessary to consider the alternatives to no advertising. He cites the case of the tractor industry where many different options are offered on tractors. Sartorius contends that if the tractor industry offers options it must also describe and promote the sale of these options, i.e. the industry must advertise.

Rhodes⁹ suggests that the nonatomistic nature of the agricultural chemicals and farm machinery industries has promoted such non-price forms of competition as improved product design and aggressive merchandising. The economies of scale available to these industries has enabled them to develop new products through their investment in research laboratories, and to sell the products because of their marketing ability. Farmers have been encouraged to adopt new technology in agriculture because of the ability of these firms to develop and sell their ideas. The need to maintain a share of the market has meant that these large firms have taken care, before placing their product on the market, to see that the product is equivalent in quality to similar products. The existence of such units as the Merck, Sharp and Dohme demonstration farm testifies to the consciousness firms have developed in keeping their standards high.

8 Sartorius, op.cit., 119.

9 V.J.Rhodes, "Inter-Industry Flows and Farm Income - Discussion", Chap.4 in *Farmers in the Market Economy* (Ames : Iowa State University Press, 1964), 75-76.

With increased product variation and greater differentiation of inputs it is difficult to evaluate the price-quality alternatives available on the market. Fletcher¹⁰ quotes Markham in his discussion on the quantification of the cost of irrational buying through deficient information in the case of fertiliser. "The social costs of such irrational buying can be measured in terms of the difference between the farmers' total outlays on mixed fertiliser and what they would have been had the farmers bought the same nutrients in the cheapest grades available". Markham estimated this amount to be \$60m. for 1950 or 10% of United States farmers' expenditures for fertiliser.

Wood¹¹ says the experience of the Consumer Council in its testing work in New Zealand shows quite conclusively that far from dealing with the "known and proved" the New Zealand consumer has a real need for impartial guidance, particularly in the purchase of complex products. Advertising in New Zealand, as well as overseas, simply does not provide enough proven product information to meet the needs of the discriminating purchaser.

It has been suggested that a limited market, coupled with import licensing, has generated higher operating costs and monopoly prices, leading to excessive charges for certain inputs, compared to their cost if imported. In addition it is possible that import licensing retards the adoption of the most highly productive inputs available at our present stage of technology, due to non-availability. There would

10. L.B.Fletcher, "Market Structures and Market Power", Chap.5 in Farmers in the Market Economy (Ames : Iowa State University Press, 1964), 109.

11 G.E.Wood, The Wordsmiths (Wellington : N.Z.Consumer Council, 1964), 93.

appear to be protection present in some sectors of the farm machinery industry¹².

2.4 Agricultural Cooperatives and Market Power

Agricultural cooperatives can be considered business organisations set up and democratically controlled by their members to perform at cost, such functions as marketing, purchasing etc. for themselves. Kohls¹³ regards a cooperative as a distinct form of business enterprise with some features and functions common to both corporations and partnerships, serving those who are at the same time both owners and users of its services.

There are three distinguishing features which help to differentiate a cooperative from other forms of business enterprise: for an enterprise to qualify as a cooperative these features need to be incorporated into the organisational and operating pattern:-

- I. The ownership and control of the enterprise must be by those who utilise its services. This means the primary objective of the cooperative enterprise is to do the job assigned to it at a minimum cost, with maximum satisfaction for its owner patrons.
- II. The business operations must be conducted so as to approach a cost basis and any returns above cost be returned to patrons on an equitable basis. This phenomenon is commonly known as patronage refund.

12 Personal communication with farm machinery distributors.

13 R.L.Kohls, Marketing of Agricultural Products (New York : Macmillan, 1955), 324.

III. The return on the owner's invested capital must be limited. In the cooperative the patron-owner invests his money primarily so the organisation can provide the desired services for him.

Kohls¹⁴ suggests that for a cooperative to be a long-run success it must accomplish at least one of the following objectives:-

- I. Increase the returns from the sale of products of its members and/or reduce the cost of inputs to its members.
- II. Reduce the price or improve the quality of the purchases of its members.
- III. Render new or improved service or give more equitable treatment to its members.

Kohls considers a cooperative should be the "pace-setter" for the industry with which it is associated, maintaining there is no real reason for establishing an additional organisation if the present organisations are functioning adequately.

Lazarlene¹⁵ says the successful cooperatives have been those which served as pace-makers in their particular industry, either through internal efficiencies of plant operation, or by consolidation and reduction in the number of links in a particular market channel. An important role of the cooperative was that of being a market research unit, as well as an operating unit. Since the beginnings of the

14. Ibid., 333.

15. H.Lazarlene, "Cooperatives in Agricultural Marketing", Chap.11 in Agricultural Market Analysis (East Lansing : Michigan State University Business Studies 1964), 211-212.

cooperative movement were under the impetus of a number of potential patron-members who wanted a service or a product at a price they were not able to obtain from existing firms, cooperatives frequently were able to reflect the needs and wants of individual members effectively. In the course of their activities desirable changes were frequently brought to their attention by patron-members. This emphasis on learning the wants and needs of customers is receiving much attention in modern marketing firms at the present time.

Knutson¹⁶ suggests that the cooperative acting in an imperfectly competitive structural situation can bring about price, output and efficiency dimensions comparable to those of pure competition.

The pace-setting activities of the cooperative will tend to benefit all members in a particular market, not only the member-patrons. It is imperative that members be continually informed of the short-run and long-run objectives of the organisation, and the achievement of these objectives.

Difficulties in growth may be experienced if equity capital is supplied in proportion to the patronage of individual patron-members. On this basis, it may be a good idea to obtain significant amounts of capital from capital sources other than patron-members, as the N.Z.Dairy Board is currently doing.

At its inception the cooperative has a marked advantage in the adoption of new technology, but at a later stage in the development

16 R.D.Knutson, "Cooperatives and the Competitive Ideal", J.Fm.Econ., 48: 120, (Aug. 1966).

of the cooperative it is difficult to change members' attitudes, to allow important developments to occur, e.g. cooperative merger.

Cooperatives may also perform poorly if the democratic process of "one man, one vote" is continued. Lazarlene¹⁷ suggests a strong leader, acting as an executive officer and maintaining consistent management, appears to be the most successful.

It would seem that because of the unique relationship between patrons and owners a cooperative is in a better position to risk using innovations and new developments in comparison with the situation of an ordinary corporate business where outside stockholders must be satisfied. Butz¹⁸ says that over the years cooperatives were first to use many of the innovations and new developments in the marketing of farm products and the distribution of farm supplies. This ability to be a pace-setter in acting on new developments or innovations provides an excellent background for the development of a farm input testing service by a farm cooperative in New Zealand.

Historically the Cooperative Societies were first in the field of the "Consumer Movement" in the United Kingdom. Although the "Consumer Movement" has become a separate recognisable body of opinion, the Cooperative Societies have continued their traditional interest in consumer affairs. Cooperatives are in an ideal position to take part in the "Consumer Movement", since the cooperative is a firm run by members for their own benefit, and an important way that a supply

17 Lazarlene, op.cit., 214.

18 D. Butz, "Cooperative Marketing and Purchasing", Chap. 10 in Farmers in the Market Economy. (Ames : Iowa State University Press, 1964), 227.

cooperative can affect the return to its members is by offering them a high quality input.

Mather¹⁹ says that supply cooperatives in the United States with efficient operations have improved the buying power of farmers, reduced the costs of their production supplies, and increased their net farm incomes. Mather maintains that some cooperatives have had a salutary effect on business or trade practices in their area. High quality supplies, selected to give value-in-use benefits, have been provided for farmer members. In the provision of high quality supplies at reasonable costs many cooperatives have carried out their usual pace-setting activities.

In the procurement of general farm supplies and equipment many cooperatives in the United States have emphasised selective buying. Using laboratory tests, farmer advisory panels, market research surveys and agricultural engineering departments of State experimental stations, cooperatives have determined the specifications of supplies best suited to farmer needs.

Testing and development of agricultural inputs has been carried out by regional cooperatives in the United States since 1945. At a later date this laboratory was taken over by United Cooperatives (which is controlled by twenty-four regional cooperatives). The two main functions of the laboratory are :-

- I. To make comparative tests of inputs used in agricultural production, including field machinery
- II. The development of new inputs and equipment as required by a changing agriculture.

¹⁹ J.W.Mather, Supply Cooperatives (Farmer Cooperative Service, U.S. Dept. of Agriculture, Washington : Bulletin Reprint 2), 43-44.

Purchased items are checked and comparisons made of items which are purchased with similar items offered by competition. The laboratory is operated entirely for the benefit of United members and all reports and results are considered confidential. The only recommendations made as to "best buys" are those given to their buyers²⁰.

The testing laboratory run by National Cooperatives is an extremely important source of product knowledge and from the results obtained in the laboratory it is possible to evaluate the product in terms of its selling price, and so pick the "best buy". The 'co-op' label itself represents a "best buy".

The laboratory is stated to be of great assistance in saving money for members as well as enabling them to obtain a better product for their money. The cooperative is no longer dependent on the salesmanship of any particular supplier who might or might not be truthful in his claims. With the product facts and the firm's offered price it is possible to make a choice between several competing products²¹.

The supply cooperative movement in New Zealand has just begun to make its presence felt. At present there are fifteen cooperative Trading Societies in New Zealand incorporated with limited liability under the Industrial and Provident Societies Act (1908).

20 Personal communication with United Cooperatives Inc., Alliance, Ohio, U.S.A.

21 Personal communications with National Cooperatives Inc., Albert Lea, Minnesota, U.S.A.

The chairman of the Rotorua cooperative trading group says "farmers in N.Z. have over \$200m. of purchasing power.... All group trading means is that this \$200m. will be channelled into the pockets of those prepared to give value and service"²². In Rotorua contracts have been negotiated with various business firms, who have offered the trading group quite worthwhile discounts in return for cash trading. A wide range of articles have been included in these contracts, resulting in an overall reduction of about 5% in members' costs²³.

2.5 The Comparative Testing of Farm Inputs

Overseas Experience -

A review of literature failed to reveal a single organisation overseas concerned specifically with the testing of farm inputs. However, several of the more common consumer goods are also used by farmers, e.g. tyres, batteries.

The National Institute of Agricultural Engineering in the United Kingdom has made an attempt to produce a "Report for Users" scheme. Originally, the Institute was an organisation set up to assess the performance of tractors and field machinery on an unbiased basis, both in the laboratory and in the field, so that steel could be allocated efficiently, and without waste, during the last War. After the War, the work was carried on to provide the manufacturers with a testing service, for which they paid a small fee. The bulk of the cost was

22 Straight Furrow, 22 : 1, (Feb. 7, 1962).

23 _____, 23 : 5, (Nov. 21, 1962).

borne by the Treasury through the Agricultural Research Council. Summaries of some of these tests were published, so the information would be available to interested parties, including farmers.

At a later stage pressure came from the farmers' organisations to introduce tests specifically designed to satisfy the needs of the user. There was a tendency to work more on a comparative basis. Testing regulations were also changed; previously the manufacturers had the right of veto on publication, but under the new regulations the test results obtained were of necessity published, unless that machine were withdrawn from the market.

With the "Report for Users" development, a subscription scheme of three guineas per year was launched, in the hope that farmers would provide a substantial amount of the funds required to run the testing service, estimated to cost in the region of \$150,000 p.a. Fees were still charged to manufacturers; even although these were increased they still covered only a small proportion of the cost of the tests.

The number of subscriptions received from farmers did not rise about \$5,000. Manufacturers did not like comparative tests and entries for tests dropped considerably. At the present time the whole of the testing service is being reconsidered. There is a possibility that the funds may be supplied through the Ministry of Agriculture instead of the Agricultural Research Council.²⁴

The Australian Consumer Association, in its magazine "Choice" reported on a comparative test done on electric fences, specifying a

24. Personal communication with the National Institute of Agricultural Engineering, Bedford, England.

"best buy" from amongst both the main units and the battery units²⁵.

The performance of the electric fence was assessed by seeing how effective the fence was in preventing livestock from breaking through, how long a fence it would charge, and how it stood up to adverse conditions, e.g. wet weather, long grass. Particular attention was paid to the regulation of the output voltage.

The test criteria used in the comparative tests involved the following points :-

- I Mechanical and electrical construction
- II Electrical output, particularly the regulation of output voltage.
- III Power consumption.
- IV Durability in use.
- V The effect of weather on the fence.
- VI Convenience.

The different makes of electric fence unit were discussed in relation to the following features:

- I Price (without battery)
- II Weight (without batteries)
- III Overall size (length x breadth x depth).
- IV Electrical performance (good : fair : very good).
- V Test or indicator light (yes : no).
- VI Construction case mechanism (plastic : sheet steel : balance wheel)

25 Australian Consumers' Association "Electric Fences", Choice, 6: 149-155, (July 1965).

VII Battery compartment (yes : no : Wet, dry or main units)

VIII Battery life (months).

New Zealand Experience -

In New Zealand the Standards Institute has made Standards available for some farm inputs. It would appear that Standards have not really been adequate in safeguarding the farmer and since 1948 there have been efforts to set up an agricultural engineering testing and research organisation. The formation of this organisation was not realised until the New Zealand Agricultural Engineering Institute was set up in 1962.

Dissatisfaction with the "status quo" has been reflected from time to time in remits from Provinces of Federated Farmers. There has been some dissatisfaction with the Stock Remedies Act (1934) [now the Animal Remedies Act (1967)]. Allegations have been made that some remedies, especially dips, were being placed on the market before being fully tested²⁶. There has also been discussion on the unnecessary advisory service provided by the manufacturers and distributors of hormone weedkillers²⁷.

Under the Trade Practices Act (1958) an inquiry has been conducted into certain alleged agreements or arrangements in relation to the sale of weedkiller preparations between members of the Weedkiller Manufacturers' Section within the New Zealand Agricultural Chemical Manufacturers' Federation, viz:

26 Straight Furrow, 23 : 9, (Nov.7, 1962).

27 _____, 23 : 10, (May 1, 1963).

- I. That uniform retail prices be charged for comparable hormone weedkiller preparations.
- II. That agreed discounts be granted to specified classes of purchasers of such preparations.
- III. That no discounts be granted to other specified classes of purchasers of such preparations.
- IV. That uniform prices for comparable products be charged or tendered in the case of sales to, or tenders for the sale of such preparations to special classes of users²⁸.

The Trade Practices and Prices Commission also examined an allegation that fertiliser companies had refused to accept orders for phosphatic fertiliser from certain rural trading groups²⁹.

In the case of both weedkillers and fertilisers, the Trade Practices and Prices commission ordered that the particular trade practice be discontinued.

During the last 5-6 years there has been a good deal of interest in some form of consumer testing service for farm machinery and agricultural chemical preparations³⁰. This testing service was

28 N.Z.Gazette, No.13, 353, (March 18, 1965).

29 N.Z.Gazette, No.46, 1241, (Aug.4, 1966).
 _____, No.53, 1442, (Sept.12, 1966).
 _____, No.54, 1466, (Aug.31, 1967).
 _____, No.54, 1466, (Aug.31, 1967).

30 Straight Furrow, 22 : 20, (June 20, 1962).
 _____, 22 : 27, (July 18, 1962).
 _____, 22 : 31, (Aug.22, 1962).
 _____, 22 : 25, (Oct. 3, 1962).
 _____, 23 : 15, (May 15, 1963).
 _____, 24 : 18, (May 20, 1964).

suggested as a special department of the Consumer Council, with testing done in conjunction with agricultural colleges, research stations and the Department of Scientific and Industrial Research, financed possibly by a grant from the Meat Board. With the formation of the New Zealand Agricultural Engineering Institute at Lincoln College interest in a testing service diminished. This decline in interest is well shown by few remits coming forward from Provinces of Federated Farmers.

Currently there is interest³¹ in setting up a comparative testing unit for farm inputs, so it would appear that the New Zealand Agricultural Engineering Institute has not yet fulfilled the function farmers hoped it would when it was originally set up. It must be remembered, however, that the terms of reference of the Agricultural Engineering Institute do not specify comparative testing, although at the present time there is some interest in comparative testing by the Institute³².

Pearse and Humphries³³ mention a "Consumer Service" approach to testing fence posts and wire under extreme ranges of conditions and Pearse³⁴ mentions some form of farmers' "Consumer Service" to check periodically on fencing materials because of the importance of fencing to the farming community.

31 Straight Furrow, 27 : 9, (Sep.20, 1967).

32 Personal communication with N.Z.Agricultural Engineering Institute Lincoln College, Canterbury, N.Z.

33 H.C.H.Pearse and K.R.Humphries, "Reducing Fencing Costs on Hill Country", Massey Sheepfarming Annual 1966 (Palmerston North, N.Z.) 233.

34 H.C.H.Pearse, "Fencing Efficiency", Farm Forestry, 8: 3,23-24 (1966)

The New Zealand Farmer³⁵ makes mention of the need for farmers to seek advice from their veterinary surgeons on the correct administration of drugs. The article suggests that the modern New Zealand farmer cannot possibly hope to obtain the best value from the range of powerful drugs available to him without frequent advice from his veterinary surgeon. It is suggested that too many farmers, with no real knowledge of what they are doing, waste a good deal of money through indiscriminate use of expensive drugs.

35 "Drugs - Their Use and Abuse", N.Z. Farmer., 25, (April 13, 1967).

CHAPTER 3

THE RESULTS OF THE MAIL SURVEY

3.1 Introduction

The data from the survey has been analysed in two ways:-

- I. Using the total 401 questionnaires as a sample of the population of all sheep, dairy and mixed farmers in New Zealand.
- II. Using a total of 272 questionnaires, 173 of which were sent in by dairy farmers, 53 by sheep farmers and 64 by mixed farmers. Enterprise grouping of farmers was used to detect any significant differences in the response by enterprise grouping. In analyses involving enterprise type an adjustment has been made for unequal sample sizes¹.

Most of the questions asked were simple, direct questions of the "Yes" or "No" type, which could be coded directly from the questionnaire. Where the "open ended" questions could not be coded directly, the answers were taken directly from the questionnaire after the processing of the results.

The data was compiled using an I.B.M. 1620 computer.

3.2 Farmers' Familiarity with the Consumer Council

The first two questions on the questionnaire were concerned with the number of farmers who were familiar with the services of the Consumer Council

1. In carrying out this adjustment the author has adjusted the number of sheep and mixed farmers assuming that 173 had answered, i.e. by multiplying the number of sheep farmers by 3.26 and mixed farmers by 3.76. Only the adjusted figures are shown in Tables 3.7 to 3.16 and in Table 3.34: in other tables an asterisk has been used to show adjusted numbers, e.g. 45 = 147/173 means $45 \times 3.26 = 147$ farmers out of 173 farmers.

(which has been in existence nine years) and the number who were subscribers to the Consumer Council's magazine "Consumer".

Table 4.1

Familiarity with the Consumer Council
in relation to "Consumer" Subscribers.

Subscriber to "Consumer"	Familiarity with Consumer Council Services			
	No	Yes	Partly Familiar	Total
No answer	0	1	0	1
No	0	182	2	184
Yes	2 ²	127	0	129
Discontinued	1	5	0	6
N.A.as not familiar with Consumer Council	81	0	0	81
Total	84	315	2	401

Over three-quarters (78%) of the farmers were familiar with the services offered by the Council, while only 21% were not familiar with the services provided. Only two farmers regarded themselves as partly familiar with the Consumer Council.

The high percentage of farmers who were familiar with the Consumer Council and its activities indicates either (i) that the Consumer Council had been successful in its extension work to the farming community, especially when its services are not directed specifically to the farm business unit,

2 This apparent discrepancy may mean that these two farmers misunderstood the question or that merely subscribing to the journal did not, in their opinion, equate with a knowledge of the services offered by the Consumer Council.

or (ii) that farmers are more keenly aware of the value of the service.

Of the 401 farmers who replied, 46% were not "Consumer" subscribers: 20% could not be subscribers since they were not familiar with the services provided by the Consumer Council. One third (32%) of the farmers who returned a questionnaire were "Consumer" subscribers. Six farmers had discontinued their subscriptions to "Consumer".

Of the total 315 farmers who were familiar with the services of the Consumer Council there were 40% who were also subscribers to "Consumer": 58% of those familiar with the Consumer Council services were not subscribers to "Consumer". Only 2% (5) had discontinued their "Consumer" subscription.

According to the Consumer Council³, 6.6% of the 72,000 farmers in New Zealand are "Consumer" subscribers while 9% of the total households in New Zealand⁴ are subscribers to the magazine. The figures obtained from the mail survey may indicate that a higher percentage of farmers who were "Consumer" subscribers returned the questionnaire because they knew the advantages associated with Consumer Council membership.

The large percentage of the 315 farmers familiar with Consumer Council services, who were also "Consumer" subscribers, would seem to indicate that farmers are genuinely interested and active in the consumer movement and realise the advantages of obtaining a "best buy". Further evidence for this opinion is obtained from the small number of farmers who had discontinued their "Consumer" subscription.

Analysing the question concerned with familiarity with the Consumer Council on an enterprise type basis the following table was obtained:

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3. Personal communication with N.Z.Consumer Council, Wellington N.Z.
 4. N.Z.Department of Statistics, N.Z.Official Year Book 1967 (Wellington: Government Printer), 544.

Table 3.2

Familiarity with the Consumer Council by Enterprise Type

Familiarity with Consumer Council Services	Enterprise Type			
	Sheep	Dairy	Mixed	Total
No	8	54	6	68
Yes	45=147/173*	117	40=150/173*	202
Partly familiar	0	2	0	2
Total	53	173	46	272

*Adjusted for unequal sample size

There is a significant difference between sheep, dairy and mixed farmers in their familiarity with the Consumer Council. 85% of the sheep farmers and 87% of the mixed farmers contacted were familiar with the services of the Consumer Council, compared with only 68% of the dairy farmers.

It would appear then, that sheep and mixed farmers and their families are more "consumer conscious" than dairy farmers, and the possibility of a sheep farming organisation working with the Consumer Council should be considered. The more consumer conscious attitude amongst sheep and mixed farmers would seem to be borne out by noting the farmers who were "Consumer" subscribers.

Table 3.3

"Consumer" Subscribers by Enterprise Type

Subscriber to "Consumer"	Enterprise type			
	Sheep	Dairy	Mixed	Total
No answer	0	1	0	1
No	23	72	22	117
Yes	21=69/173*	46	18=68/173*	85
Discontinued	1	3	0	4
N.A.as unfamiliar with Consumer Council	8	51	6	65
Total	53	173	46	272

*Adjusted for unequal sample size

Sheep farmers accounted for 38% of the subscribers and 37% were mixed farmers, while only 25% were dairy farmers ($\chi^2 = 5.55$, 2 df : 10% > p > 5%). This may indicate that dairy farmers are already reasonably well catered for by cooperative trading and Farm Improvement Club trading, in which dairy farmers are more prominent.

3.3 The Need for an Input Testing Service

Farmers in general felt there was a need for an input evaluation service, with 91% indicating there was a need for a service of this nature. Of the remainder 4% (16) did not feel there was any need and another 4% (16) did not express any opinion. Only 1 farmer failed to answer this question.

There was no difference between enterprise type as to the need for a testing service:

Table 3.4

Need for a Testing Service by Enterprise Type

The Need for a Testing Service	Enterprise Type			Total
	Sheep	Dairy	Mixed	
No answer	0	1	0	1
No	2	10	3	14
Yes	50=153/173*	150	42=158/173*	242
Don't know	2	12	1	15
Total	53	173	46	272

*Adjusted for unequal sample size

Sheep and dairy farmers each constituted 33% of the total while mixed farmers made up the remaining 34%.

A greater number of farmers appeared to feel the need for a testing service if they were familiar with the services of the Consumer Council than if they were not familiar. The following table illustrates this point:-

Table 3.5

Need for a Testing Service in Relation to Familiarity with the Consumer Council.

The Need for a Testing Service	Familiarity with Consumer Council services							
	No		Yes		Partly Familiar		Total	
	No.	%	No.	%	No.	%	No	%
No answer	0	0	1	0	0	0	1	0
No	6	7	12	4	0	0	18	5
Yes	68	81	296	94	2	100	366	91
Don't know	10	12	6	2	0	0	16	4
Total	84	100	315	100	2	100	401	100

Farmers who felt the need for a testing service were also cross-tabulated with those who were "Consumer" subscribers. (Table 3.6).

It is noteworthy that of the 366 farmers who felt there was a need for a testing service, 46% were not "Consumer" subscribers. Of the 18 who felt there was no need for a testing service, 61% (11) were not subscribers to "Consumer".

It would seem then that familiarity with the Consumer Council is not an important factor in determining the need for an input evaluation

service. There appears to be a genuine need for a testing service amongst all farmers. as farmers who were unfamiliar with Consumer Council activities felt there was a need for such a service.

Table 3.6

Need for a Testing Service in Relation to "Consumer"
Subscribers

Subscriber to "Consumer"	The Need for a Testing Service									
	No answer		No		Yes		Don't know		Total	
	No.	%	No	%	No.	%	No	%	No	%
No answer	0	0	0	0	1	0	0	0	1	0
No	1	100	11	61	169	46	3	20	184	46
Yes	0	0	1	6	124	34	4	25	129	32
Discontinued subscription	0	0	0	0	6	2	0	0	6	2
N.A.	0	0	6	33	66	18	9	55	81	20
Total	1	100	18	100	366	100	16	100	401	100

3.4 The Items which Farmers indicated Needed Testing

The items which farmers considered required testing covered a wide range - from farm machinery to general farm requisites. This particular question was phrased in two different ways to avoid the two following possibilities:

- I Farmers being unaware of what sort of items were being referred to.
- II Farmers being too restricted in their choice and not mentioning particular items which may have presented problems in the past.

Half of each type of questionnaire was sent to the farmers contacted.

A similar number of each type of questionnaire was returned.

In the type of questionnaire described by I, four broad categories of farm inputs were mentioned, viz., farm machinery, veterinary supplies, fencing supplies and general farm requisites. Farmers were asked to write down the items as successive options. These were the only questionnaires used to look for differences in enterprise type amongst farm machinery, veterinary supplies, fencing supplies and general farm requisites.

For the type of questionnaire described by II no categories of inputs were mentioned. This type of questionnaire produced a wide variety of items. Farmers were asked to give preference to the items they felt needed testing and the first four items that were mentioned were coded.

3.4.1 Total of all Items Mentioned.

With a total of 401 questionnaires returned and with only the first four options coded, there were 1604 answers which could be received.

No answer was given by 15% (240) in either one of all of the four options and 5% (81) were not expected to reply (having said there was no need for a testing service).

When certain inputs were suggested the following numbers were returned:-

Farm machinery	189
Veterinary supplies	184
General farm re- quisites	183
Fencing supplies	172

Deducting those who gave no answer, those who were not expected to reply, and those who returned a questionnaire with the inputs suggested, a total of 555 remains. In this group the following numbers were mentioned :-

Drenches	37 times
Farm machinery	35 "
Milking machines	34 "
Detergents	32 "
Tractors	27 "
Dips	19 "
Stock foods, poultry foods, dog crackers, concentrates	19 "
Milking machine rubberware	18 "
Veterinary supplies	18 "
Fertiliser	16 "
Stock licks	14 "
Weedicides	12 "
Fencing	11 "

The classification of other items appears in Appendix D of the original thesis.

3.4.2 First Preference

Here 23 farmers gave no answer: 14 of these farmers returned a questionnaire where no examples of inputs were given.

Where inputs were mentioned 46% of the farmers suggested farm machinery, 33% veterinary supplies and 19% general farm requisites. Fencing supplies were mentioned by only 2%.

Where there was no restriction on the choice of items, milking machines were most frequently mentioned (13%). In addition 9% mentioned drenches, 9% detergents, while farm machinery and tractors were mentioned by 7%: 5% mentioned veterinary supplies, while 4% suggested either milking machine rubberware, fertiliser or dips.

The results of the above analysis show quite clearly that farm machinery and certain chemical preparations are considered to be most in need of testing. To gain some idea of the difference between farm enterprise types, items suggested were cross-tabulated with the different types of farmers who responded. In the case of farm machinery the following table is obtained:-

Table 3.7

Farm Machinery Testing, Preference 1.

	Sheep	Dairy	Mixed	Total
No.	29	38	49	116
%	25	33	42	100

This table bears out the relationship one would expect, viz. that mixed farmers are the most concerned about the testing of farm machinery with 42% of those suggesting the testing of farm machinery being mixed farmers. Dairy farmers, being the next most mechanised group, constituted only 33% of the total. Only 25% of the group were sheep farmers.

An analysis of veterinary supplies by enterprise type is also relevant.

Table 3.8

Veterinary Supply Testing, Preference 1.

	Sheep	Dairy	Mixed	Total
No.	13	27	15	55
%	24	49	27	100

As would be expected, dairy farmers felt the greatest dissatisfaction with veterinary supplies, making up 49% of the sample. This is a reflection of the greater intensification of dairy farming and the increasing concern with respect to chemical residues and resistant strains.

General farm requisites were also considered an important group in the first preference:-

Table 3.9

General Farm Requisite Testing, Preference 1

	Sheep	Dairy	Mixed	Total
No.	13	22	8	43
%	30	51	19	100

Dairy farmers showed most interest in the testing of general farm requisites (51% of the total).

3.4.3 Second Preference

The second preference showed a similar pattern to that of the first preference.

Thirty-nine farmers gave no answer and there were 20 farmers for which this question was not applicable (as they felt there was no need for a testing service). Where inputs were mentioned farm machinery was the most important, 31% suggesting it as their second preference, whilst 31% mentioned veterinary supplies and 29% general farm requisites. Fencing supplies were mentioned by only 9% of the farmers.

Where there was no indication of the categories of farm inputs, 9% mentioned farm machinery, 8% drenches, 6% detergents, 6% stock licks, 5% milking machine rubberware, 5% dips and 5% tractors.

Analysed on an enterprise type basis, this second option showed the following enterprise grouping for farm machinery :-

Table 3.10

Farm Machinery Testing, Preference 2.

	Sheep	Dairy	Mixed	Total
No.	10	28	19	57
%	18	49	33	100

Dairy farmers stand out here as the group most concerned with the testing of farm machinery. This phenomenon is to be expected because of the rapid increase in mechanisation on the dairy farm, e.g. mechanical aids in herringbone sheds and the fact that innovation has been at a faster rate.

For veterinary supplies the following figures were obtained:-

Table 3.11

Veterinary Supply Testing, Preference 2

	Sheep	Dairy	Mixed	Total
No.	29	28	15	72
%	40	39	21	100

As expected, sheep and dairy farmers, i.e. live-stock dominant enterprises, emphasise veterinary supplies.

In the case of drenches analysed on an enterprise type basis, 9 out of 272 farmers suggested that these be tested.

Table 3.12

Drench Testing, Preference 2

	Sheep	Dairy	Mixed	Total
No.	20	1	8	29
%	69	3	28	100

Sheep farmers constituted 69% of those who wanted drenches tested. This result was to be expected as sheep farmers are important users of drenches and problems arise as to the most appropriate one to use, especially when it is difficult to identify the specific infestation. Stock licks appeared to be a problem amongst both sheep and mixed farmers :-

Table 3.13

Stock Lick Testing, Preference 2

	Sheep	Dairy	Mixed	Total
No.	7	3	8	18
%	39	17	44	100

Fencing becomes more important as an option as one moves from the first to the fourth option. For the second option the following

relationship holds :-

Table 3.14

Fencing Tests, Preference 2

	Sheep	Dairy	Mixed	Total
No.	10	5	15	30
%	33	17	50	100

3.4.4 Third Preference

Fencing becomes a most prominent item as a third option. Of the farmers who sent back the questionnaire where items were mentioned, 28% suggested fencing supplies in comparison to only 21% suggesting veterinary supplies and 16% suggesting farm machinery. However, 35% suggested general farm requisites.

In total an answer was not expected from 20 farmers because they had indicated they felt no need for a testing service. There were 71 farmers who did not offer a third option: 6 farmers offered options which did not fit the coding.

Where there was no guidance as to the items to be selected, 5% suggested stock foods, 4% drenches, 4% tractors, 4% vaccines and 4% farm machinery.

An analysis of fencing supplies on the basis of enterprise type suggests dairy, as well as mixed farmers, have a need for greater information with respect to fencing.

Table 3.15

Fencing Tests, Preference 3

	Sheep	Dairy	Mixed	Total
No.	16	19	34	69
%	23	28	49	100

3.4.5. Fourth Preference

On consideration of the fourth option dairy farmers become quite concerned about fencing. From questionnaires where actual categories were specified, 59% of the farmers mentioned fencing supplies.

The other three categories accounted for 17% or less.

With no categories suggested, 6% mentioned fencing supplies, 5% veterinary supplies, 5% wire , wire-netting, staples, nails, 5% milking machines, 5% stock foods, 4% farm machinery, 4% dips and 4% drenches.

Splitting the figure obtained for fencing into the various enterprise types, the table shown below is obtained.

Table 3.16

Fencing Tests, Preference 4

	Sheep	Dairy	Mixed	Total
No.	26	54	15	95
%	27	57	16	100

Dairy farmers here express a great deal of concern with fencing supplies. With the greater intensification of dairy farming it is to be expected that problems would be encountered in the best type of fencing to use. Concern will not only be felt for the best fencing materials, but also for different fencing designs.

3.5 The Need for Service Evaluation

This question was designed to see if there was dissatisfaction with the services offered to the farmer and follows the trend of the Consumer

Council in looking towards not only the testing of goods, but also the testing of services. Examples given to explain the sorts of service which could be tested were :-

- i. Hire purchase agreements
- ii. Guarantees
- iii. Share farming agreements (especially dairy)
- iv. Milking machine servicing
- v. Soil testing agencies
- vi. Farm Advisory services

There were 316 (79%) of the 401 farmers who felt there was a need for the evaluation of services: only 10% felt there was no need, while 9% did not know: 2% (7) gave no answer to this question.

To investigate whether familiarity with the Consumer Council made farmers more likely to consider that services needed testing, a cross tabulation of familiarity with the Consumer Council and the need for service evaluation was carried out (see Table 3.17).

It would seem that familiarity with the services of the Consumer Council is not a factor which would make farmers feel service evaluation is necessary. There appears to be a genuine felt need for this type of testing by all farmers.

An analysis was carried out to examine the felt need for both a testing service for farm inputs and a testing service to evaluate farm services. Results are shown in Table 3.18.

In this analysis 74% of the 401 respondents felt there was a need for both a testing service and service evaluation: 8% considered there

Table 3.17

Need for Service Evaluation in Relation to Familiarity with the Consumer Council

The Need for Service Evaluation	Familiarity with Consumer Council Services							
	No		Yes		Partly familiar		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	1	1	6	2	0	0	7	2
No	8	10	33	10	0	0	41	10
Yes	68	81	246	78	2	100	316	79
Don't know	7	8	30	10	0	0	37	9
Total	84	100	315	100	2	100	401	100

Table 3.18

Need for Service Evaluation in Relation to Need for a Testing Service

The Need for Service Evaluation	The Need for a Testing Service									
	No answer		No		Yes		Don't know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	1	0	2	1	4	1	0	0	7	2
No	0	0	7	2	32	8	2	1	41	11
Yes	0	0	8	2	298	74	10	2	316	78
Don't know	0	0	1	0	32	8	4	1	37	9
Total	1	0	18	5	366	91	16	4	401	100

was a need for a testing service, but no need for service evaluation. Only 2% felt there was a need for service evaluation, but not a need for testing goods and another 2% indicated there was no need for either of these services.

Comparing the answers from different enterprise types the following table is obtained:-

Table 3.19

Need for Service Evaluation by Enterprise Type

The Need for Service Evaluation	Enterprise Type							
	Sheep		Dairy		Mixed		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	1	2	4	2	2	4	7	2
No	8	15	15	9	3	7	26	10
Yes	38	72	141	82	30	65	209	77
Don't know	6	11	13	7	11	24	30	11
Total	53	100	173	100	46	100	272	100

Taking the farmers who felt there was a need for service evaluation, and adjusting for unequal sample sizes, it was found that 37% were dairy farmers, 33% were sheep farmers and 30% were mixed farmers ($\chi^2 = 3.37$, 2df: N.S.), indicating there was no difference between enterprise types.

3.6 The Need for Improved Labelling

Through the "consumer movement" a good deal of effort has been diverted to improved labelling. To gain some idea of the extent of this problem with agricultural inputs, farmers were asked whether they felt labelling to be adequate. Approximately one half (48%) of the respondents felt that the labelling on stock ticks, drenches, dips, etc., was adequate:

37% felt labelling was not adequate and 14% did not express any opinion. Only 3 farmers gave no answer.

It is possible that familiarity with Consumer Council services could make one more conscious of the need for better labelling.

Table 3.20

Adequacy of labelling in Relation to Familiarity with
the Consumer Council

The Adequacy of Labelling	Familiarity with Consumer Council services							
	No		Yes		Partly familiar		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	1	1	2	1	0	0	3	1
No	29	34	117	37	1	50	147	37
Yes	36	43	157	50	1	50	194	48
Don't know	18	22	39	12	0	0	57	14
Total	84	100	315	100	2	100	401	100

Adjusting for sample size a χ^2 test showed that farmers' felt labelling was adequate irrespective of their familiarity with Consumer Council services ($\chi^2 = 1.66$, 1df: N.S.).

3.7 Membership in a Trading Group

The answers given to this question may be biased as 16% of the farmers contacted with either members of a Farm Improvement Club (F.I.C) Trading Group or a similarly organised rural trading group.

However, in reply to this question, 64% of the 401 farmers who sent back questionnaires were not members of any trading group: 17% were members of a Farm Improvement Club Trading Group and 15% were members of a

similar type of rural trading group. Only 3% belonged to both a Farm Improvement Club Trading Group and a similar type of rural trading group. Three farmers did not answer this question.

Analysing trading group membership on an enterprise type basis the following table is obtained.

Table 3.21

Membership in Trading Groups by Enterprise Type

Membership in rural trading group	Enterprise type							
	Sheep		Dairy		Mixed		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	1.	2	2	1	0	0	3	1
.F.I.C.Trading group	2	4	13	8	2	4	17	6
Similar trading group	8	15	26	15	10	22	44	16
Members of neither	42	79	131	76	34	74	207	77
F.I.C. and similar trading group	0	0	1	0	0	0	1	0
Total	53	100	173	100	46	100	272	100

No one particular farming enterprise dominated any category. However, any conclusions drawn here need to be treated with caution because of the limited sample which has been used.

3.8 The Appropriate Organisation to do the Testing

Farmers were asked what particular organisation they felt would be the most appropriate to do input evaluation work. Twelve farmers did not answer the question. Approximately one half (51%) of the 401 farmers suggested that the Consumer Council would be the most appropriate body. The three other organisations suggested as possible bodies to do the testing were :-

Federated Farmers	14%
Farm Improvement Club Trading Group	8%
Rural trading group	3%

Each of the following suggestions was supported by 2% of the farmers:

- (i) a special council
- (ii) the New Zealand Agricultural Engineering Institute or an extension of it
- (iii) a combination of the Consumer Council and Federated Farmers.

Other options which were mentioned are shown in Appendix D of the original thesis.

To see if there was an association between familiarity with the Consumer Council and the organisation to do the testing the two were cross-tabulated:-

Table 3.22

The Appropriate Organisation to do Testing in Relation to
Familiarity with the Consumer Council

Organisation to do Testing	<u>Familiarity with Consumer Council services</u>							
	No		Yes		Partly familiar		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	6	7	6	2	0	0	12	3
Consumer Council	23	28	178	56	2	100	203	51
F.I.C.Trading Group	12	14	19	6	0	0	31	8
Similar trading group	5	6	6	2	0	0	11	3
Federated Farmers	26	31	32	10	0	0	58	14
Other	12	14	74	24	0	0	86	21
Total	84	100	315	100	2	100	401	100

It would appear that farmers familiar with the activities of the Consumer Council felt the Consumer Council would provide the best testing organisation. The farmers who knew little or nothing about the Consumer Council suggested either the Consumer Council or Federated Farmers. The Farm Improvement Club Trading Group was considered a possible testing organisation by a relatively large number of farmers unfamiliar with Consumer Council services (14%). However, it seems farmers who knew the value of the Consumer Council were keen to see this organisation just extend its activities into farm input evaluation.

To see if membership in a trading group affected the way respondents answered, the answers to these two questions were cross tabulated.

Table 3.23

The Appropriate Organisation to do Testing in Relation
to Membership in Trading Groups

Organisation to do Testing	No answer		F.I.C. Trading Group		Similar trading group		Member of neither		Member of both		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	1	34	0	0	1	2	9	3	1	7	12	3
Consumer Council	1	33	36	54	27	46	234	52	5	39	203	51
F.I.C. Trading Group	0	0	3	5	2	3	25	9	1	7	31	8
Similar trad- ing group	0	0	1	1	3	5	7	3	0	0	11	3
Federated Farm- ers	1	33	7	10	9	15	40	16	1	8	58	14
Other	0	0	20	30	17	29	44	17	5	39	86	21
Total	3	100	67	100	59	100	259	100	13	100	401	100

Members of trading groups do not appear to feel their trading organisation is a more suitable organisation to do the testing than other organisations. A high percentage of trading group members were in favour of the Consumer Council.

There were marked differences between enterprise type as to the best organisation to do the testing.

Table 3.24

The Appropriate Organisation to do Testing by Enterprise Type

Organisation to do Testing	Enterprise Type							
	Sheep		Dairy		Mixed		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	2	4	9	5	0	0	11	4
Consumer Council	32	60	79	45	21	46	132	48
F.I.C.Trading Group	4	8	13	8	5	11	22	8
Similar trading group	1	1	5	3	2	4	8	3
Federated Farmers	3	6	38	22	4	8	45	17
Other	11	21	29	17	14	31	54	20
Total	53	100	173	100	46	100	272	100

Adjusting for unequal sample size sheep farmers may be in favour of the Consumer Council ($\chi^2 = 4.8$, 2 df: 10% > p > 5%). This would appear to be due to the fact that sheep farmers are more familiar with the services of the Consumer Council and a large number are also subscribers to "Consumer".

Of those farmers who suggested Federated Farmers as a testing organisation, dairy farmers seemed to be predominant. 63% of the farmers who suggested Federated Farmers were dairy farmers - this may mean that dairy farmers are more active members of Federated Farmers than are other farmers.

3.9 Willingness to Pay for a Testing Service

In answer to this question 71% (283) of the 401 farmers replied that they were willing to pay for a testing service and only 13% were not prepared to pay anything to support a service of this sort. There were 3% who were willing to pay if the scheme was made compulsory for all: 2% of the farmers did not answer this question, while another 2% suggested they would be willing to pay if :-

- (i) the scheme was Government subsidised
- (ii) the testing organisation gave an opinion on the article tested.

Other reasons which were suggested appear in Appendix D of the original thesis.

To see if there was any association between familiarity with the Consumer Council and willingness to pay for a testing service these two questions were cross tabulated :-

Table 3.15:

Willingness to Pay for Testing in Relation to Familiarity with the Consumer Council

Willingness to pay for service	Familiarity with Consumer Council services							
	No		Yes		Partly familiar		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	3	4	4	1	0	0	7	2
No	18	21	32	10	1	50	51	13
Yes	48	57	234	74	1	50	283	70
If compulsory for all	3	4	8	3	0	0	11	3
Other	12	14	37	12	0	0	49	12
Total	84	100	315	100	2	100	401	100

It would appear from the table above that familiarity with Consumer Council services is associated with a willingness to pay for a testing organisation. This may be due to the fact that farmers who are interested in Consumer Council activities are the more progressive farmers who would be willing to pay for a testing service anyway.

Subscribers to "Consumer" may also be more willing to pay than non-subscribers are and this group of farmers was cross-tabulated with the question on the farmers' willingness to pay :-

Table 3.26

Willingness to Pay for Testing in Relation to "Consumer"
Subscribers

Willingness to pay for service	Subscriber to "Consumer"											
	No answer		No		Yes		Discon- tinued		Not familiar with Consumer Council		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	0	0	3	1	3	2	0	0	1	1	7	2
No	0	0	29	16	4	3	0	0	18	22	51	13
Yes	1	100	128	70	103	80	4	67	47	58	283	70
Other	0	0	24	13	19	15	2	33	15	19	60	15
Total	1	100	184	100	129	100	6	100	81	100	401	100

It would seem that farmers who were "Consumer" subscribers were more willing to pay for a testing service than were non-subscribers. However, a relatively high percentage of farmers who were not familiar with the services of the Consumer Council were willing to pay for an input evaluation service.

Cross tabulating the questions on the testing service and the willingness of farmers to pay for this service, the following table is obtained:

Table 3.27

Willingness to pay for Testing in Relation to the Need for
a Testing Service

Willingness to pay for service	The Need for a Testing Service									
	No answer		No		Yes		Don't know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	1	100	0	0	5	1	1	5	7	2
No	0	0	12	66	33	9	6	38	51	13
Yes	0	0	3	17	274	75	6	38	283	70
Other**	0	0	3	17	54	15	3	19	60	15
Total	1	100	18	100	366	100	16	100	401	100

**Subject to certain conditions, e.g. Government participation

A large percentage (75%) of those who felt there was a need for a testing service, were also willing to pay for the service. Only 9% were not willing to pay for the service.

It is possible that members of a trading group, being more used to paying for services, would be more willing to pay for a testing service :-

Table 3.28

Willingness to Pay for Testing in Relation to Membership in
Trading Group

Willingness to pay for service	Membership in Trading Group											
	No answer		F.I.C. Trading Group		Similar trading group		Member of neither		Member of both		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	2	67	1	2	0	0	3	1	1	8	7	2
No	0	0	5	7	7	12	38	15	1	8	51	13
Yes	1	33	45	67	43	73	185	71	9	69	283	70
Other	0	0	16	24	9	15	33	13	2	15	60	15
Total	3	100	67	100	59	100	259	100	13	100	401	100

Farmers who are members of a trading group do not seem more prepared to pay for a testing service. Members of Farm Improvement Club Trading Groups would seem prepared to pay only if there were a large number of provisos.

The analysis of whether a farmer was willing to pay on an enterprise type basis showed no difference between sheep, dairy and mixed farmers. ($\chi^2 = 1.9$, 2 df: N.S.).

Table 3.29

Willingness to Pay by Enterprise Type

Willingness to pay	Enterprise Type			
	Sheep	Dairy	Mixed	Total
No answer	0	4	3	7
No	6	27	5	38
Yes	42=137/173*	123	30=113/173*	195
Other	5	19	8	32
Total	53	173	46	272

*Adjusted for unequal sample size.

3.10 Amount of Subscription to Testing Service

Of the total of 401 farmers, 76% were willing to pay something to support a testing service.

There are 67,000 farmers in New Zealand who are either sheep, dairy, beef or mixed farmers. Details of the derivation of this estimate are shown in Appendix C of the original thesis. The figure derived excludes horticulture, timber etc., since no examples of this type of enterprise were included in the original sample to whom a questionnaire was sent.

It is assumed that the number of farmers who can be classed as

commercial is 50,000 (present Federated Farmers' membership is 45,000 and the Federation suggests that with the full support of the whole industry it could exceed 55,000⁵).

3.10.1 Estimate I

Totalling the sum of money which could be obtained from the 76% who were willing to pay something, the following is obtained :-

30% (121) were willing to pay \$2-4	\$242 - 484
24% (98) were willing to pay \$4-8	392 - 784
17% (70) were willing to pay \$8-12	560 - 840
1% (3) were willing to pay \$12-16	36 - 48
2% (7) were willing to pay \$16-20	112 - 140
1% (5) were willing to pay \$20 +	<u>50 - 50</u>
	\$1392 - 2346

Only a sample of 400 farmers was obtained from the survey: this equals $\frac{1}{125}$ of the estimated 50,000 commercial farmers in New Zealand.

On the basis of the figures above, \$174,000 - \$293,000 could possibly be available for an input evaluation service.

3.10.2 Estimate II

Of the estimated 50,000 commercial farmers in New Zealand, assuming 25% will not support a farm input evaluation service, perhaps 37,000 farmers would be willing to subscribe \$4 per annum for such a service. This suggests that an amount of approximately \$150,000 could be available for an input evaluation service.

5. The Voice of the N.Z. Farmer, 9. (A pamphlet produced by Federated Farmers of N.Z. (Inc.), Wellington).

An amount of money in the vicinity of \$150,000 would permit an extremely comprehensive and sophisticated unit to be set up. It compares with the current Consumer Council budget of approximately \$130,000 (for the year ended 31 July 1966)⁶.

To see if farmers who were "Consumer" subscribers were willing to pay a larger sum to test a testing service started, a cross tabulation of "Consumer" subscribers and the amount farmers were willing to pay was carried out.

Table 3.30

Amount Willing to Pay in Relation to "Consumer" Subscribers

Amount farmers willing to pay	Subscriber to "Consumer"											
	No answer		No		Yes		Discon- tinued		Not famil- iar with Consumer Council		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	0	0	10	5	10	8	0	0	5	6	25	6
\$2 - 4	1	100	55	30	44	35	4	66	17	21	121	30
\$4 - 8	0	0	43	23	34	27	1	17	20	24	98	24
\$8 -12	0	0	34	18	25	19	1	17	10	12	70	18
\$12 -16	0	0	1	1	2	1	0	0	0	0	3	1
\$16 -20	0	0	3	2	2	1	0	0	2	3	7	2
\$20+	0	0	1	1	2	1	0	0	2	3	5	1
Other	0	0	37	20	10	8	0	0	25	31	72	18
Total	1	100	184	100	129	100	6	100	81	100	401	100

There would appear to be no difference between "Consumer" subscribers and non-subscribers in the amount they were willing to pay towards a testing service.

⁶ N.Z. Consumer Council, "Annual Accounts for Year Ended 31 July 1966", Consumer, No. 30, 192-193, (December 1966).

It is possible that farmers who are used to paying for a particular service would be willing to pay for an input evaluation service. The following table shows the results obtained from cross tabulating these two questions :-

Table 3.31

Amount Willing to Pay in Relation to Membership in Trading Group

Amount farmers willing to pay	Membership in Trading Group											
	No answer		F.I.C. Trading Group		Similar trading group		Member of neither		Member of both		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No answer	2	67	3	4	2	3	15	6	3	23	25	6
\$2 -4	1	33	19	28	18	30	82	32	1	8	121	30
\$4 -8	0	0	21	32	14	24	59	23	4	30	98	25
\$8-12	0	0	12	18	13	22	42	16	3	23	70	17
\$12-16	0	0	0	0	1	2	2	1	0	0	3	1
\$16-20	0	0	2	3	0	0	4	1	1	8	7	2
\$20 +	0	0	0	0	0	0	5	2	0	0	5	1
Other	0	0	10	15	11	19	50	19	1	8	72	18
Total	3	100	67	100	59	100	259	100	13	100	401	100

There would appear to be little difference between the way members of a trading group and non-members of a trading group reacted to the amount of money they would pay to get a testing service in operation. Farmers used to paying for a service do not seem to be more willing to pay a greater annual subscription.

It would seem that mixed farmers were the most willing to pay the higher subscription.

Table 3.32

Amount Willing to Pay by Enterprise Type

Amount farmers willing to pay	Enterprise type							
	Sheep		Dairy		Mixed		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	1	2	14	8	6	13	21	8
\$2-4	17	32	57	33	7	15	81	30
\$4-8	13	24	44	25	9	20	66	24
\$8-12	11	21	23	13	14	31	48	17
\$12-16	1	2	0	0	1	2	2	1
\$16-20	0	0	1	1	1	2	2	1
\$20 +	1	2	2	1	0	0	3	1
Other	9	17	32	19	8	17	49	18
Total	53	100	173	100	46	100	272	100

In the \$2-4 bracket, mixed farmers were the least willing to pay this amount ($X^2 = 13.1$, 2df: p 0.5%). The \$4-8 bracket was not significant, but mixed farmers were the most willing to pay in the \$8-12 bracket ($X^2 = 12.2$, 2df : p 0.5%).

The above results would seem to be a reflection of the mixed farmers' realisation that the type of farming inputs which they use would require substantial funds to enable comparative testing to be carried out.

3.11 Farmers who had read Reports of the New Zealand Agricultural Engineering Institute

The reports from the New Zealand Agricultural Engineering Institute had not been read by 71% of the 401 farmers. However, 29% had read the reports: two farmers gave no answer.

3.12 The Use of the Reports

For 68% (271) of the 401 farmers this question was not applicable as they had not read the reports. Only 17% said the reports were of use to them, while 8% commented that the reports were not really applicable to their farming system: 3% had not seen the reports. The remaining 4% fell into the following categories :

No answer	5 farmers
Much machinery has not yet been tested	4 farmers
Reports of no use	2 farmers
Reports limited in results	2 farmers
Farmer already knew details	1 farmer

Other reasons why the reports were of no use appear in Appendix D of the original thesis.

The questions concerning farmers who had read the reports of the New Zealand Agricultural Engineering Institute and the usefulness of these reports to the farmer were cross-tabulated :-

Table 3.33

Usefulness of Agricultural Engineering Reports in Relation to those who had read them

The Usefulness of Reports	Farmers who had read Ag. Engineering Institute Reports							
	No answer		No		Yes		Total	
	No.	%	No.	%	No.	%	No.	%
No answer	2	100	0	0	3	3	5	1
No	0	0	0	0	2	2	2	0.5
Yes	0	0	0	0	67	58	67	17
Farmer has not seen reports	0	0	12	4	0	0	12	3
N.A.to his farming system	0	0	0	0	33	28	33	8
N.A.since has not read reports	0	0	271	96	0	0	271	68
Other	0	0	0	0	11	9	11	2.5
Total	2	100	283	100	116	100	401	100

Of the farmers who had read the reports 58% (67) found them of some use: 28% found they were not applicable to their farming system. Only two farmers felt the reports were of no use.

It seems that the testing work of the New Zealand Agricultural Engineering Institute has been of use to farmers, but there would appear to be some difficulty in getting this information out to the farming community.

3.13 Improvements in the Lincoln Scheme and its Reports

In answering this question 317 (79%) of the 401 farmers gave no answer: this included the 271 (68%) who had not read the reports. There were 8% (31) who felt there should be more advertising of reports and/or better circulation of them: 2% felt they did not know enough about the Lincoln scheme to comment on it, while 2% felt more tests should be carried out and a greater allocation of money made to the Institute. Other answers given to this question appear in Appendix D of the original.

3.14 Further Information provided by farmers

As is mentioned in Discussion Paper No.51 (Chapter 3, p.35 of the original thesis), the provision of space so that farmers can add their own comments increases the response rate. In the questionnaire, a blank page was provided for respondents to add their own comments or give any further ideas. A number of farmers made use of this page to add their own comments on various farming problems; only 89 farmers (22%) of the 401 farmers made any further comments on the need for a testing service or suggested goods or services which may need testing and had not been included in answer to the questionnaire. 78% of the 401 farmers did not provide

any further information of relevance to the organisation of a farm input evaluation service.

Analysing the farmers who provided information on an enterprise type basis, it was found that sheep farmers offered more suggestions than did dairy and mixed farmers.

Table 3.34

The Provision of Further Information in Relation to
Enterprise Type

	Sheep	Dairy	Mixed	Total
No.	55	25	38	118
%	47	21	32	100

The additional comments added by the farmers can be found in Appendix D of the original thesis.

3.15 Conclusion

The survey questions relating to the New Zealand Agricultural Engineering Institute reveal that a large number of farmers have no knowledge of the reports of the Institute and those who are aware of it have only a vague idea of its functions and terms of reference. It would seem that the Institute has been of no great assistance to the farmer in helping him decide on the quality of various farm inputs, apparently since the results of many of the tests have not been sought after and/or are not readily available. It is to be expected that a unit which has limited funds and has only been in existence for a limited period will not have had the time to do a large number of tests and distribute the results of its findings to a large section of the farming community.

In view of the substantial impact of the Consumer Council on the farming community, it would seem appropriate for the New Zealand Agricultural Engineering Institute to affiliate in some way with the Consumer Council, which is already concerned with comparative testing. This would bring the findings of the Institute to a much wider farming audience without the need to create and promote its own extension media, which is an expensive and time-consuming operation.

The survey does indicate a felt need by the majority of farmers for an input and service evaluation unit, for which most farmers (76%) were prepared to pay. A figure of between \$100,000 and \$150,000 per annum could be available to enable this input and service evaluation to be carried out. This assumes that a farmer's statement of intention would in fact be expressed in cash.

The various groups of items suggested as in need of testing (viz., tractors and farm machinery; agricultural chemicals, especially detergents; veterinary supplies, particularly drenches and dips; fencing, for both materials and design), indicate the problems and uncertainties generated by rapid technological change in the inputs supplied to farming. As an aid to decision-making a farm input evaluation service would seem to be a valuable source of information for the farmer, to supplement the contents of advertisements, the persuasive language of salesmen, and the experience of other farmers.

CHAPTER 4

THE ORGANISATION OF AGRICULTURAL SUPPLY INDUSTRIES IN NEW ZEALAND

4.1 Introduction

Costs to the New Zealand farmers represent only one aspect of the farm income problem, which is concerned with the relationship between costs and prices. In New Zealand imported goods and services amount to 28%¹ of the total value of goods and services available, and even although certain factors which increase the cost of imports must add to New Zealand production costs, it appears that the factors responsible for internal costs are due mainly to the internal economic climate, which reflects Government policies and economic objectives. This then means that emphasis on full employment, protection and development of secondary industries, and the redistribution of national income, together with employers and employees decisions on wage rates, profit margins and improved productivity through the use of new techniques can influence farmers' costs quite markedly.

Import licensing is a characteristic feature of the New Zealand economy: it is associated with the objectives of full employment and the development of secondary industries and in addition it exerts some influence on profit margins and the possibility of improved industrial productivity from the use of new technology. With import licensing it is possible for monopolistic or oligopolistic arrangements to exist.

1. Report of the Agricultural Development Conference (Wellington: Government Printer), 143.

Under the Trade Practices Act (1958) investigations can be carried out to determine whether certain trade practices are contrary to the public interest. With the development of agricultural cooperative trading groups in New Zealand it would seem certain restrictive practices are being uncovered, thus making for a more competitive environment and the possibility of holding costs more stable.

In view of the need to keep farm incomes high to enable continued investment in farming, and with the greater scope for influencing costs rather than prices, some analysis of competitive structure and pricing policies is relevant.

4.2 Rulings under the Trade Practices Act (1958)

Under the Trade Practices Act (1958) a Trade Practices and Prices Commission was formed and an Examiner of Trade Practices and Prices appointed. The terms of reference of the Commission are to enquire into trade practices to establish whether any such practices are contrary to the public interest, and to make orders directing the amendment, discontinuance or prohibition of the repetition of any such practice which the Commission finds is contrary to the public interest. There is a right of appeal to the Trade Practices Appeal Authority.

In a large number of the enquiries conducted by the Trade Practices and Prices Commission the trade practice of collective agreements among traders for the pricing of goods, or the submission of tenders for the supply of goods and services was held by the Commission to be contrary to the public interest.

Under the Trade Practices Act investigations of interest to the agricultural sector of the economy have been carried out into the following :-

- I. The Pricing and Marketing Procedure associated with the sale of Hormone Weedkiller Preparations².
- II. The terms on which the East Coast Farmers' Fertiliser Co.Ltd. has agreed to sell phosphatic fertiliser to the Hawkes' Bay Trading Society Ltd., and the Gisborne East Coast Trading Society Ltd.³
- III. The terms on which the New Zealand Farmers' Fertiliser Co.Ltd., has agreed to sell phosphatic fertiliser to the Waikato Farmers' Traders' Society Ltd., and the Taranaki Rural Traders' Society Ltd.⁴
- IV. The terms on which Kempthorne Prosser and Co's New Zealand Drug Co.Ltd., has agreed to sell phosphatic fertiliser to the Farm Improvement Club Group Ltd., the Marlborough Farm Trading Society Ltd., the Ashburton Trading Society Ltd., and the North Canterbury Rural Cooperative Society Ltd.⁵
- v. The terms on which the Dominion Fertiliser Co.Ltd., has agreed to sell phosphatic fertiliser to the Otago Rural Trading Society Ltd., and the Rural Cooperative Society Ltd.⁶

2. N.Z.Gazette, No.13, 353, (March 18, 1965).
 3. _____ No.46,1241, (Aug. 4, 1966).
 4. _____ No.53,1442, (Sept. 12, 1966).
 5. _____ No.54,1466, (Aug. 31, 1967).
 6. Ibid.

In the case of the pricing and marketing of hormone weedkillers, the Trade Practices and Prices Commission found :-

- A. That an agreement or arrangement that uniform retail prices be charged for comparable hormone weedkiller preparations existed.
- B. That an agreement or arrangement existed for sales of hormone weedkiller preparations :-
 - (i) To grant to local bodies a discount of 15%
 - (ii) To grant to contractors and certain aerial operators a discount of 10%
 - (iii) Not to grant any discount to Young Farmers' Clubs and (with the exception of sales by Boots the Chemists (NZ)Ltd) to Farm Improvement Clubs
 - (iv) To tender for sales to local bodies only at prices and on terms agreed upon.

In the case of hormone weedkiller preparations an appeal was made to the Trade Practices Appeal Authority, but the appeal was disallowed.

It is possible that a similar type of monopolistic agreement or arrangement exists in the case of veterinary supplies and spare parts for farm machinery.

Even though Sartorius (Chap.2, p.15) suggests that the presence of concentration and of administered prices does not mean there is no competition in farm supply industries, it would seem that hormone weedkiller preparations provide a good example of reduced competition

arising from a collective agreement. The absence of price competition indicates that an oligopolistic industry is present, a feature of which is advertising. Millar suggests (Chap.2, p.17) that advertising should exist to increase sales so that advertising costs are retrieved, and the price cut possible is given to the consumer. However, in the case of hormone weedkiller preparations it would seem that even although these firms have carried out extensive advertising, because prices could not be cut the farmer had to pay more for hormone weedkiller.

The items from II to V and in B (iii) were concerned with the acceptance of orders from rural trading groups. This was a case of industrial organisations being unwilling to trade with trading groups and is an example of the possible pressure which may be exerted on these groups when they first commence operating. As rural trading Groups begin to buy a greater range of inputs, it is likely that further restrictive trade practices will be uncovered.

The cases of fertiliser and hormone weedkiller cited above indicate that a cooperative acting in an imperfectly competitive structural situation can bring about price, output and efficiency dimensions comparable to pure competition as suggested by Knutson (Chap.2, p. 22). The development of rural trading groups in New Zealand has been of advantage not only to farmer members, but because of their pace-making role all farmers have benefitted. This is consistent with Mather's observation (Chap.2, p.24) that cooperatives can have a salutary effect on business practices in their area.

4.3 The Effects of Import Licensing on the New Zealand Economy

There are marked disadvantages to having import licensing over long periods of time. A consideration of a few of the effects import licensing may have on the economy will show these disadvantages :-

- I. As stocks of imported materials are used up spasmodic unemployment may appear due to "bottlenecks" in the economy⁷.
- II. With import licensing opportunities are available for strengthening the monopoly elements within the economy, since the basis of allocation of import licenses cannot be adjusted to a changed situation rapidly enough⁸.
- III. The protection given by import control will tend to increase costs and lower the competitive position of the export industries. Import licensing need not reduce the potential demand for imports, as investment expenditure will be stimulated and there will be increased machinery imports⁹.
- IV. Import licensing is inflationary, whereas inflation may be partly, wholly, or more than off-set when increased tariffs are applied. The effect will depend on the reaction of the home demand for imports, upon the rise in price of the imports and upon the extent to which the extra customs revenue is spent by the Government¹⁰.

7. E.Lundberg and M.Hill, "Australia's Long Term Balance of Payments Problems", Econ.Rec., 34, : 42, (1956).

8. Ibid., 43.

9. Ibid.

10. W.M.Corden, "Import Restrictions and Tariffs : A New Look at Australian Policy", Econ. Rec., 34 : 332 (1958).

It has been estimated that the domestic price level in New Zealand rose by 60% between 1949 and 1959 due to a continual process of inflation caused by excessive wage costs, by tendencies to overspend, and because of import licensing¹¹.

An argument often advanced is that import licensing raises prices less than they would be raised if tariffs were used. The real difference between tariffs and import licensing lies in the fact that with a tariff the Government gets the benefit of the increased price to the consumer, so that the Government can either reduce taxation or offer incentive payments to exporters. However, with import licensing the overseas seller receives a higher price, or margins are absorbed in the marketing chain, In order to spread the availability of the reduced supply of imported goods over the entire year, it is essential to raise retail prices so as to reduce demand¹².

V. An economy which has full employment with a long term policy of import licensing will have low productivity because it will try to do too many things at once. Prices can be changed according to internal costs with little attention being paid to potential external competition : relatively small markets, short runs of production, and inelastic but expanding demand will create the type of industrial growth that ignores the concepts of comparative costs and the advantages of the New Zealand economy in the international division of labour. The disregard of these

11. C.A.Blyth, Economic Growth 1950-60 (Research Paper No.1, N.Z. Institute of Economic Research : Wellington, N.Z.), 9.

12. W.Candler, "Incentives for Agricultural Production", Proceedings of the Ruakura Farmers' Conference 1964 (Hamilton, N.Z.) 132-133.

economic principles means the rise in real national income will be much lower than it otherwise would have been¹³.

VI. The allocation of import licenses on the basis of a previous year's imports means that the rate at which New Zealand can turn to an alternative source of import supply is greatly slowed down¹⁴.

VII. Import licensing is inequitable since obtaining a license requires an administrative decision about the particular industry or import. The profitability of a proposal is not necessarily the determinant of the success of the application¹⁵.

VIII. Import licensing raises the c.i.f. (landed) value of imports if the foreign exporter can obtain for himself some of the monopoly profits. By appropriating some of the profit there is a tendency for the terms of trade to worsen. In contrast tariffs are more likely to cause the terms of trade to improve¹⁶.

In New Zealand it seems unlikely that import licensing would have a noticeable effect on the terms of trade because :-

(i) Licenses are issued on a global basis and there is probably not much chance of foreigners appropriating monopoly profits.

(ii) New Zealand is too small to have any effect on world price.

13. Lundberg and Hill, op.cit., 43.

14. Candler, op.cit., 131

15. Ibid.

16. Corden, op.cit., 332.

Candler¹⁷ suggests that under import licensing some industries in New Zealand get more than 80% protection. He proposes that there be an upper limit to the protection afforded any industries by either tariffs or import licensing (e.g. 60%). A bounty could be used to give added protection to the industry. Alternatively, licenses could be auctioned to the highest bidder.

4.4. Import Licensing and Farm Inputs

To ensure that New Zealand's overseas payments could be made and sufficient funds be available for essential imports, there have been import control and export licence regulations in existence since December 1938.

With the introduction of the Import Control Regulations of 1938 the import of goods was prohibited except under a licence or exemption. The Import Licensing Control Regulations 1964 (which were related to the authority of the Customs Act 1913) consolidated and amended the 1938 Import Control Regulations and their amendments. Under the Import Licensing Control Regulations 1964, importation into New Zealand of any goods is prohibited except by a written licence, an exemption, or a written permit granted by the Minister of Customs.

The Import Control Regulations are administered through Import Licensing Schedules. Since 1962 there has been a general easing of the Import Control Regulations. The Schedule for 1962 was issued in March 1962 and represented an increase in imports compared to the earlier period of 1962. This schedule was based on the new Customs Tariff which came into force on 1 July 1962.

17. Candler, op.cit., 137, 140.

During the 1963-64 import licensing period commercial and industrial growth expanded rapidly and additional funds of slightly more than \$16m. were made available for further imports, including agricultural tractors.

In the 1965-66 Import Licensing Schedule 90 items, representing imports then valued at \$90m. were exempted from licensing. With this increase about one-third of New Zealand's import trade was free of licensing. The items which were exempted consisted of the following -

- (i) certain raw materials
- (ii) certain consumer goods
- (iii) heavy duty trucks
- (iv) various types of agricultural equipment, e.g. tractors, combine harvesters, corn pickers, pick-up balers, separators and certain spare parts.

Overall, the 1966-67 Schedule was the second highest on record, being exceeded only by that of 1965-66. The 1967-68 Import Licensing Schedule provided for further general reductions in the allocation for licensed imports : allocations were in most cases reduced by 20%.

The 1967-68 Schedule contained the following categories of items:-

- (i) Basic items where the Schedule provides a percentage allocation based either on the amount of a previous period's licenses or on the amount of actual imports made during a previous period.

- (ii) "C" items for which applications for licenses could be considered individually. There was an initial allocation for some "C" items and licenses would have been granted according to the percentage indicated.
- (iii) "D" items for which applications for licenses would be considered only in the most exceptional circumstances.
- (iv) "E" items which are exempt from licensing.
- (v) Applications for items marked \triangle in the Schedule and other applications involving materials and equipment for industry, together with applications for goods of a similar kind to those manufactured in New Zealand in quantity, would be referred to the Department of Industries and Commerce for investigation and recommendation.

4.5 Import Licensing on Specific Agricultural Inputs

An examination was made of the Import Licensing Schedule for the 1967-68 Licensing Period¹⁸ to try to determine the likelihood of local protection of industry. The Import Licensing Schedule was read in conjunction with the Customs Tariff of New Zealand 1962¹⁹.

4.5.1. Agricultural Tractors

These are not subject to import licensing at all : any restriction on imports for agricultural tractors is likely to be for foreign-exchange

18. N.Z. Customs Dept., Import Licensing Schedule : 1967-68 Licensing Period (Wellington : Government Printer) xxxi, 23-74.

19. N.Z. Customs Dept., Customs Tariff of N.Z. 1962 (Wellington : Government Printer) (110-227).

saving reasons rather than protection purposes, as no tractors are manufactured in New Zealand.

The Schedule which was examined gives a list of 130 different types of tractors which are approved for importation. In general, the tractors approved for importation are those types of tractors approved for agricultural use and follows the 1963-64 Agricultural Development Conference recommendation that import licensing or farm machinery be removed, if the machinery was not made in New Zealand. The tariff on agricultural tractors ranges from none to 10%.

4.5.2 Agricultural Machinery

On examination of the 1967-68 Licensing Schedule it was found that the following items were exempt from licensing; the tariff ruling appears in brackets after each item and includes the range from the lowest to the highest :-

Cream separators (free), discs (free), some machinery parts (20-55%), combine harvester-threshers (free), pick-up balers (free) corn pickers (not available), sickle-bar mowers (free).

The following items were allocated 100% of their 1966 licenses:-

Disc ploughs (10-40%), ploughs (10-40%), cultivators (10-40%) rotary hoes (10-40%), rotary tillers (10-40%), harrows (10-40%) seed drills (20-50%), seed or fertiliser sowers or distributors combined or separate (20-50%), lime-spreaders (20-50%), potato planters (20-50%), milking machines (free, milking machine parts, excluding rubber parts (free - 32 $\frac{1}{2}$ %). All of these must be

referred to the Department of Industries and Commerce for investigation. Parts of ploughs, other than plough shares (free). This last item does not need to be referred to the Department of Industries and Commerce for investigation.

Applications would be considered only in exceptional circumstances for the following :-

Vacuum pumps suited for use with milking machines (not available), plough shares (free), forage harvesters with cutting width not exceeding 70" (free - 20%), buck rakes (not available), finger-wheel type side-delivery rakes (20%), power-operated rotary-type mowers (15-55%), weed and scrub-cutting mowers ($27\frac{1}{2}$ - 65%).

Applications for licenses would be considered individually in the following cases:-

Potato diggers (20%), hay rakes (20%), swath turners (20%), side delivery rakes (20%), hay and straw presses (free) rotary-type mowers having cutting blades greater than 33" in length ($27\frac{1}{2}$ - 65%). These were all required to be referred to the Department of Industries and Commerce for investigation.

An allocation of 90% of 1966 licenses was provided for in the following items:

Reapers, binders, threshers and harvesters (other than combine harvester-threshers, forage harvesters with cutting width not exceeding 70", and tobacco harvesters (not available), mowers other than those mentioned previously (15-55%), mechanical clippers for sheep-shearing and horse-clipping, and parts (free-10%).

4.5.3 Fencing materials

The following fencing material applications would be considered only in exceptional circumstances:-

Metal fencing posts, standards and droppers (not available), wire-strainers (free - $12\frac{1}{2}\%$), twisted hoop or single flat wire, barbed or not, and loosely twisted double wire, of kinds used for fencing, or iron or steel (free - $12\frac{1}{3}\%$).

A restriction of 80% of the imports of the same goods under 1966 licenses applied to $12\frac{1}{2}$ gauge high tensile fencing wire and galvanized wire Type B (not available).

Applications for licenses for baling wire (not available), barbing wire (free - $12\frac{1}{2}\%$), fencing wire and nail wire (not available), would be considered individually and also referred to the Department of Industries and Commerce for investigation.

4.5.4 Agricultural Chemicals

Insecticides and fungicides specially prepared for use in the preservation of timber were exempt from licensing (not available), while sheep dip, insecticides and fungicides for agricultural purposes etc., put up in packings for retail sale and weedkillers put up in packings for retail sale were only 80% of the 1966 licenses (free- $32\frac{1}{2}\%$).

Insecticides and fungicides for agricultural purposes etc., packed otherwise than for sale by retail (excluding insecticides and fungicides especially prepared for use in timber preservation) and weedkillers were reduced to 90% of their 1966 licenses and also need to be referred to the Department of Industries and Commerce for investigation ($12\frac{1}{2} - 22\frac{1}{2}\%$).

4.5.5 Milking Machine Parts

These would be considered in exceptional circumstances: the tariff ranges from being free to 32%.

4.5.6 Summary

It would seem from this discussion of import licensing that certain types of agricultural machinery may be being protected. Such items as certain machinery parts, disc ploughs, ploughs, cultivators, rotary hoes and tillers, harrows, seed drills, seed or fertiliser distributors, lime spreaders, potato planters and mowers may be costing the New Zealand farmer more than the item costs overseas. This conclusion fits in with the observations of farm machinery distributors (Chap.2, p.19) that small implement manufacture is protected.

It appears that vacuum pumps for milking machines, plough shares, forage harvesters, finger-wheel type side-delivery rakes and power operated rotary-type mowers, wire strainers, twisted loop or single flat wire, barbed or not, and loosely twisted double wire of kinds used for fencing are quite highly protected, as applications for these are considered only in exceptional cases.

It is possible that potato diggers, hay rakes, swath turners, side-delivery rakes, hay and straw presses and rotary-type mowers having cutting blades greater than 33" in length, baling wire, barbing wire, fencing wire and nail-wire are all very highly protected.

The agricultural chemical industry may be protected to some extent: most items in this category seem to have a tariff in the range of being free to 20%.

Milking machine rubberware may also be highly protected; even although there was no cut in import licence allocation in the 1967-68 period, there is a relatively high tariff now in existence.

It is difficult to compare the price of imported items and the retail price in the country of origin and so get some idea of the likely extent of protection. The 1963-64 Agricultural Development Conference²⁰ endeavoured to account for the disparities between United Kingdom and New Zealand user prices and found the margin was substantial on some individual items, but did not know whether these margins were the result of policies followed by New Zealand distributors or by overseas manufacturers.

4.6 The Agricultural Development Conference and Protection of Local Industry

The Farm Costs Working Party of the Agricultural Development Conference²¹ in discussing protection by tariffs and import licensing, made the following recommendations :

- I. That import licensing be replaced as far as possible by the tariff as a protective measure
- II. That where tariff protection is deemed necessary or where special circumstances require maintenance of import licensing, the protection offered should not exceed a reasonable level.
- III. That a full enquiry be undertaken into the local wool-pack industry. Such an enquiry should include its strategic

20. Report of the Agricultural Development Conference, op.cit., 157-158.

21. Ibid., 169.

significance, its regional, social and economic implications, and the availability of alternative raw materials

- IV. That import licensing of farm machinery or licensing of other goods used predominantly by farmers for productive purposes should be removed if the machinery or goods are not made in New Zealand
- V. That where it is deemed necessary to institute or maintain protection of local manufacturers of farm inputs, there should be reasonable prospects that they will be capable of economic production, and that they will keep the prices, quality and suitability of their products competitive with imports.

As a result of these recommendations many types of farm machinery and equipment were exempted from import licensing during 1965. However, little else has been done to implement the recommendations of the Conference, and it would appear that there is still some measure of protection being afforded certain New Zealand farm inputs, e.g. milking machine rubberware and small implements.

The protection afforded certain farm supply industries in that overseas firms cannot enter the New Zealand market because of import licensing means, on Bain's ease of entry criterion (Chap.2, p.16), that the monopoly (or oligopoly) is absolute. Milking rubberware provides an example; from the analysis of the Import Licensing Schedule carried out and the New Zealand Industrial Production Statistics 1965-66²²

22 N.Z. Dept. of Statistics, N.Z. Industrial Production 1965-66 (Wellington : Government Printer), 183.

it seems that this particular input is produced by a highly oligopolistic industry²³.

Looking at the situation in New Zealand in view of Rhode's analysis (Chap.2, p.18) the non-atomistic nature of the agricultural chemical and farm machinery industries has not promoted improved product design and aggressive selling. Farm supply firms have not found it necessary to invest in research as there is no potential competition and possession of an absolute monopoly presents no marketing problems. Since firms either possess the whole market or share it with a few other firms who hold import licenses, there is little need to see that their product is equivalent in price or quality to similar overseas products before it is placed on the market. It appears to the author that because of import licensing, some evaluation of price-quality alternatives is necessary.

4.7 Conclusion

Any firm conclusions which may be drawn from the preceding discussion would be unwarranted as there are many factors to be taken into consideration in analysing the effects of import licensing and tariffs on the cost of farm inputs.

The Agricultural Development Conference²⁴ in looking at the disparity between the United Kingdom and New Zealand user prices for farm machinery found about one-quarter of the differential in the prices, or 9% of the total cost between that paid by United Kingdom and New

23 Evidence for this view is obtained from the fact that individual statistics for milking rubberware were not available for publication, indicating to the author that there are only a few firms (2-4) present in this industry.

24. Report of the Agricultural Development Conference, op.cit., 158.

Zealand farmers was left unexplained. The Farm Costs Working Party concluded that some part of this difference was explained by slightly lower distributors' margins in the United Kingdom, with the balance presumed to be due to differences in ex-factory selling prices and export prices in the United Kingdom. On Sartorius' criterion (Chap.2 p.15), it would seem that there is workable competition present in the farm machinery market, since this industry appears to be setting approximately the lowest possible cost for the goods it is producing and distributing.

The Conference felt that the way to overcome the problem of knowing whether the margin on some individual items was due to the policies followed by New Zealand distributors or by overseas manufacturers was to promote more competition in the farm machinery field. It was considered by the Farm Costs Working Party that this would be best achieved by the abolition of import licensing on farm machinery not made in New Zealand.

In view of the protection afforded by import licensing with little need to see if a product is equivalent in price and quality to similar products, it would seem that some evaluation of price-quality alternatives both within New Zealand and between New Zealand and other countries is needed. Even although legislation and Standards are in existence, the "highest-quality for dollar value" input may not be being provided for New Zealand farmers.

With the recent development of cooperative supply organisations, it is likely that there will be a greater amount of competition between

the various farm supply firms. The recent rulings of the Trade Practices and Prices Commission in regard to fertiliser and hormone weedkillers is an example of the difficulty cooperative supply groups may have in getting into the farm supply market. It seems supply cooperatives throughout the world have had difficulty in taking over any of the distribution of farm machinery, since the farm machinery industry has its own well-established distribution channels.

Farm supply cooperatives may be more successful in entering fields which are not associated with heavy industry, viz., drenches, vaccines, weedkillers and so improve the market for these particular inputs. There would appear to be no difficulties in entering the market for drenches and vaccines judging by the cases which have appeared before the Trade Practices and Prices Commission.

It is accepted theory that a cooperative entering a market tends to make the market more competitive²⁵. This could be a quick and easy way of ensuring the mark-ups on certain goods are kept as low as possible, and any possible restrictive trade practices could be referred to the Trade Practices and Prices Commission for consideration.

25. R.D.Knutson, "Cooperatives and the Competitive Ideal", J.Fm.Econ., 48: 113, (Aug. 1966).

CHAPTER 5

S U M M A R Y A N D S U G G E S T I O N S

5.1 Introduction

Given the trend of increasing dependence of primary industry on secondary industry for its inputs, a farmer will experience greater difficulty in making the correct decision on the most appropriate inputs to purchase to obtain a least cost combination. When many of the inputs he must purchase consist of slightly differentiated brands, increasingly sophisticated in design and with a wide price range, then an informed decision will achieve significant economic gains. It appears then that some extension work is required to assist the farmer in his input selection.

Technical extension services were originally provided by Government, but in recent years these extension services have been supplemented by the development of the Farm Improvement Club movement on a cooperative basis.

It would seem that the one sure way of ensuring that a particular industry will commence policing itself, is for some of the users of its particular product or service to begin to unite to attain self-protection. This form of cooperative action is well shown in the electrification of the rural areas of the United States. It was only when farmers had formed cooperatives to undertake this electrification that companies entered this field.

In New Zealand cooperative bargaining to obtain discounts and other concessions is already being used by Farm Improvement Clubs, Cooperative Dairy Companies and Producer Boards (e.g. in bulk buying and in negotiations on freight rates). Federated Farmers appears to be both a bargaining cooperative in its enquiries into the cost of certain farm inputs (e.g. polythene) and it has also expressed some interest in farm input evaluation in its suggestions that the Consumer Council do some comparative tests on certain farm inputs, e.g. stock remedies, farm machinery.

5.2 Possible Organisations to develop a Farm Input Evaluation Service

The farmer buys as an individual and in small quantities, so it is reasonable that he be offered some guidance in selecting the most productive input to combine with the other inputs on his particular farm. To enable a farmer to select the most productive input from a range of inputs it is necessary to have some form of comparative testing service available to specify a best buy per \$ spent.

Legislation is in existence which prevents the farmer from being sold inferior goods, e.g. the Animal Remedies Act (1967), the Stock Foods Act (1946), and the Agricultural Chemicals Act (1959), but this legislation merely establishes a minimum requirement that selected inputs must attain.

5.2.1 Government Departments

It would seem that the officers of the Department of Agriculture in their extension activities make recommendations of particular brands or makes of inputs on an unofficial basis. The extension

officer is in a suitable position to make such recommendations because he mixes with a large number of farmers in a district and comes to know the brands or makes of inputs which cause the least trouble.

Accepted Government policy prevents a Government Department from publicly recommending a brand or make of input. The Consumer Council has indicated¹ that if Government Departments were willing to release any test information they had on farm inputs, the Council would be willing to use the results of these tests to recommend certain brands to the farmer. Enquiries by the author suggest that Government Departments would not be willing to release the results of any tests they had carried out for use by the Consumer Council. However, it is highly probably that Government Departments would be willing to do certain tests under the direction of the Consumer Council, the Consumer Council then using the results of these tests to recommend a "best buy".

5.2.2 The New Zealand Agricultural Engineering Institute

Already there is in existence in New Zealand an Agricultural Engineering Institute concerned with carrying out standardised tests on farm machinery and some other farm inputs. Recently the Institute has become more interested in comparative testing.

The association of the New Zealand Agricultural Engineering Institute with the Department of Agriculture means that there is already in existence a report network for complaints and a distribution network for results. The Institute, while being financed by annual

1. Personal communication with N.Z. Consumer Council, Wellington, N.Z.

grants from the Department of Agriculture, in in fact a University-administered organisation. It is thus in a position to make mention of brand-names in its reports. Alternatively, the Institute could be a testing authority and leave the Consumer Council to draw conclusions and mention particular brand names.

The scheme devised by the National Institute of Agricultural Engineering in the United Kingdom to enable the development of a "Report for Users" scheme met with failure. To enable a similar type of scheme to be set in operation in New Zealand a suitable amount of money would need to be made available continuously to enable long-term tests to be carried out. The New Zealand Agricultural Engineering Institute has indicated a willingness to participate in comparative testing if a suitable and continuous supply of finance is available to it.

5.2.3 Consumer Council

It would seem from the survey discussed in Chapter 4 that the Consumer Council would be the most appropriate testing organisation since it is already associated with comparative testing, and a large number of farmers are familiar with the services offered by the Council (78% of the farmers contacted in the survey). In addition, 32% of the farmers were "Consumer" subscribers and the Council was suggested as a possible testing organisation by approximately half the farmers in the survey.

The Consumer Council is concerned with comparative testing for the entire consuming community and cannot limit its activities to the farming sector, although from time to time it has considered tests which

would be directly applicable to the farming community. If sufficient finance was available the Council has indicated a desire to carry out comparative tests on farm inputs. In view of the effect consumer associations have had on the quality of certain household inputs² it would seem that the Consumer Council is a useful organisation to provide not only an impartial guide for farmers, but also to help improve the quality of all inputs offered to farmers.

5.2.4 Federated Farmers

It would appear that Federated Farmers is an appropriate organisation to carry out a farm input evaluation service because approximately 70% of farmers are subscribing members and it has already suggested that comparative testing of some farm inputs be carried out³.

However, it seems that even although there is a large subscribing membership, active membership may be as low as 10%, and if the subscription was increased to finance an input evaluation service, subscriptions would probably drop substantially below 70%, thus making an extensive testing service infeasible and defeating the very basis of Federated Farmers, i.e. to speak for the overwhelming majority of farmers.

6.2.5 Agricultural Cooperative Trading Companies

At the present time agricultural cooperative trading companies (or rural trading groups) are making rapid progress in the supplying of inputs to farmers. However, while being a most vibrant farming organisation, the agricultural cooperative supply movement is not yet sufficiently

2. C.Fulop, Competition for Consumers (Institute of Economic Affairs, London: Deutsch, 1964), 225.

3. Straight Furrow, 22 : 27, (July 18, 1962).
 _____, 22 : 31, (Aug. 22, 1962).
 _____, 22 : 25, (October 3, 1962).
 _____, 23 : 15, (May 15, 1963)
 _____, 24 : 18 (May 20, 1964)

large, nor does it contain enough farmers to set up a farm input evaluation service for New Zealand farmers.

Agricultural cooperative trading companies can do a good deal to help in the farm input "consumer movement" by practising selective buying. At the present time, cooperative trading companies are not sufficiently large to practise selective buying. However, on the recommendations of cooperative supply group members it could be possible for a trading company to purchase one particular input brand rather than another.

Co-ordination of the preferences of members of agricultural cooperative trading companies on a national basis could be a useful basis for registering approval or disapproval of a particular brand of input. The problem with an organisation of this nature is that any opinion expressed may tend to be biased, since the opinions expressed represent only one particular group of farmers. An organisation which would process a large number of farmers' opinions on a national basis could be a transitional type of organisation between the present stage with little available knowledge on farm inputs, and a full scale input evaluation service.

At the local level Farm Improvement Clubs, which usually belong to the agricultural cooperative trading company movement, could organise a useful service by providing lists of dealers, machinery repair groups etc., which offer the best services to the farming community. This service could be organised relatively easily by carrying out a survey amongst all the farmer members in the district. A guide to the

services available in a district would be of great assistance to the farmers as they could then select a particular dealer etc., without going through the time consuming process of "shopping around".

5.3 The Most Appropriate Organisation to do Farm Input Testing

The author feels that the Consumer Council in association with the New Zealand Agricultural Engineering Institute could carry out comparative tests on certain farm inputs. Use could be made of certain Government Departments (Department of Agriculture and Department of Scientific and Industrial Research), Universities and chemical analysis laboratories to carry out tests, as is now the policy of the Consumer Council. It would then be possible for the Consumer Council to use the results of these tests to make recommendations as to the "Best Buy".

The Consumer Council, in association with the Farm Improvement Club Movement, could make recommendations as to the "best buy" on the basis of the test results, using the Consumer Council with its experience of comparative testing, and the Farm Improvement Club Movement with its knowledge of farming and the conditions under which the particular input is to be used. The Farm Improvement Club Movement would seem to be the most appropriate farming organisation to work with the Consumer Council, because it appears to the author to be the only farming organisation in existence in New Zealand that has extensive contact with farmers and is independent of Government.

5.4 Financing a Farm Input Evaluation Service

The author feels that a Government grant is necessary to finance a farm input evaluation service, possibly supplemented by grants made by

the Producer Boards, as is the case with the Dairy Research Institute and the Meat and Wool Board's Economic Service. Even although 71% of the farmers contacted in the present survey were willing to pay for a farm input evaluation service there is the problem of ensuring that these farmers continue to be subscribing members to the service regardless of the economic situation of the farming industry. A grant made available annually by the Government would enable continued input testing to be carried out, with farmers having the option of obtaining the results by buying the magazine produced by the testing organisation. Income from magazine sales could be used to increase the number and range of the tests performed.

A further alternative, in which the scheme was compulsory for all farmers would be via a levy on produce, but it is extremely difficult to obtain general farmer approval for this course of action and the Government would be unwilling to introduce a compulsory levy without such general support. The author feels a Government grant is justified because of the savings which would be realised for the entire economy if a farm input evaluation service were successfully instigated.

The total value of inputs moving from secondary industry into primary industry is approximately \$60m. annually, which is a large investment for New Zealand (just less than one half of the cost of the Manapouri power project of \$132m).

From Chapter 1 it would seem that in the vicinity of \$34m (of which \$14m. represents wages) is invested annually in fencing. If a cheaper fencing design or cheaper fencing materials were used it would

seem that some savings in cost could be realised. In addition to possible savings in cost, there are also likely to be labour-saving economics, both from the use of less labour and from the combination of labour with a high quality input, thus reducing maintenance and replacement costs. This additional labour could be re-employed in other positions in the agricultural sector or be made available to other sectors of the economy.

Apart from a more critical and informed decision it would seem to the author that if the farm operator had the guidance available from a farm input evaluation service, he would spend less time in deciding whether or not to buy a particular brand of input and would have more time available to think about other problems concerning his farm business. In addition, the cost of certain inputs could be reduced as there will be less need for advertising and on-farm salesmen, the farmer having an impartial guide available directly from the farm input evaluation service.

The possibility of saving several million dollars directly from the instigation of a farm input evaluation service, as well as the efficiencies resulting from better informed decision making by farm operators and the lower operating costs of farm supply businesses, has lead the author to suggest that a Government grant of \$50,000 (the intital grant to the New Zealand Agricultural Engineering Institute was \$30,000) be made available annually to the Consumer Council to enable it to carry out the comparative testing of farm inputs.

5.5 The Distribution of Testing Service Information

The author suggests the distribution of testing service information in a magazine form for those farmers who want to become subscribing members. By this means only those farmers who require this particular type of information need subscribe to the service.

To enable district variations in the use of particular inputs to be accounted for, it would be useful to discuss reports on testing in discussion groups so that the reasons for the particular input being commended or condemned are known to the farmers. The suitability of the particular input to the particular district could then be discussed. Discussion developed in this manner would tend to make farmers more conscious of what they were buying.

5.6 Recommendations on Veterinary Supplies

There is evidence of some dissatisfaction with veterinary supplies because of the number of farmers who felt there was a need for tests to be carried out on dips, drenches and general veterinary supplies (see Chapter 4). The Animal Remedies Act (1967) appears to be fulfilling its purpose⁴ and with the intensive non-price competition most apparent in the market for a large number of veterinary supplies, it would seem any rapid deterioration in product value would be detected and business would suffer as a result. Labelling (see Chapter 4) appears to be adequate in indicating the contents and possible dangers of preparations.

Difficulties associated with the use of veterinary supplies seem to

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4. Personal communication with Veterinary School, Massey University, Palmerston North, N.Z.

occur when critical proportions of the preparation have to be considered. Problems also arise because of the greater specificity of the drugs now on the market and wrong diagnoses by farmers. It would appear to the author that there is an extension problem associated with the use of veterinary supplies by farmers, but this problem is beyond the scope of the present study.

5.7 Recommendations on Fencing Supplies

Steel fencing supplies (both fencing wire and wire posts) are stated to be made from high grade ('A') galvanized wire⁵, but staples etc., may be manufactured from lower quality materials. Dissatisfaction with fencing seems mainly associated with the suitability of different types of fencing and the possible cost reductions which could be obtained from different forms of fencing^{6,7,8}.

The author suggests that the proposed farm input evaluation service look into the various designs of staples available on the market and also the quality of wire used in staple manufacture.

Different fencing designs and types of fencing material (8 gauge v 12 $\frac{1}{2}$ gauge wire, concrete v wooden posts) could be used in trials to investigate such factors as strength of fence, length of life, optimum distance between posts, the stock holding capacity of the fence etc.

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5. Personal communication with Eclipse Wire (Palmerston North) Ltd., Palmerston North, N.Z.
 6. H.C.H.Pearse and K.R.Humphries, "Reducing Fencing Costs on Hill Country", Massey Sheepfarming Annual 1966 (Palmerston North, N.Z.) 225-233.
 7. H.C.H.Pearse, "Fencing Efficiency", Farm Forestry, 8: 3-24 (1966).
 8. 1967 "Soil-Con" Fencing : the fence with a future (A leaflet produced by the Ministry of Works, Palmerston North, N.Z.).

Tests could also be carried out to find the most efficient, least-cost fence for different farm types, viz., hill-country sheep, low-land fat lamb, mixed sheep and cropping, and dairy farms. These tests could be just an extension of the tests on fencing at present being carried out by the New Zealand Agricultural Engineering Institute.

5.8 Recommendations on Agricultural Machinery

At the present time the New Zealand Agricultural Engineering Institute is beginning a number of testing projects, but these projects involve standardised tests rather than comparative tests. Standardised tests involve putting an input through a set test procedure with the performance of the input for each aspect of the test being noted in technical terms: results usually appear in the absolute terms, e.g. 40 brake horse-power. In contrast, with comparative tests an input is put through a test procedure and performance for each aspect of the test is compared with the performance of other brands of that input for that particular test: results appear often in relative terms, e.g. good, fair, poor.

It would seem that in association with the comparative test approach of the Consumer Council, comparative tests could be carried out on agricultural machinery by the New Zealand Agricultural Engineering Institute. The author suggests that a farm input evaluation service look into those aspects of machinery design and manufacture which can cause man-hours to be wasted due to machinery stoppages. Standardised tests are the most appropriate tests for discovering engineering defects.

However, tests to compare machines on such things as ease of hitching to the tractor and manoeuvrability of the machine, ease of operation of the machine (e.g. dust problems), ease of fitting new parts, ease in servicing the machine, the sensitivity and ease of adjustment control and the layout of the instruction booklet could be undertaken. A postal questionnaire could also be used to ascertain user experience on various points, the user classifying performance aspects as 'good', 'fairly good', 'fair' or 'poor'.

It must be remembered that agricultural machinery is used under a variety of conditions in New Zealand. However, the author feels that the relevance of a Consumer Council/Agricultural Engineering Institute report to a particular district could well be discussed at discussion groups and similar farmer meetings.

The most productive machinery for a particular farm is a matter for the farmer to decide. The information provided by a farm input evaluation service would be just another, but an impartial source of information for the farmer.

It is difficult to ascertain from the Import Licensing Schedule and the Customs Tariff of New Zealand the extent of import licensing and tariff protection which exists in New Zealand. However, it appears to the author that there is a good deal of protection of small implement manufacture in New Zealand.

5.9 Recommendations on General Farm Supplies

The author feels that the items suggested by farmers in Chapter 4 as in need of testing could be tested by the Consumer Council section of

the Consumer Council/New Zealand agricultural Engineering Institute partnership. Such inputs as stock licks and foods could be chemically analysed to see if the contents were as indicated on the label and possibly a recommendation could be made on the value of the particular preparation for farmers in some particular areas.

An input such as milking machine rubberware could be tested for length of life, perishability and ability to withstand various milking machinery cleansers.

The author considers that a large number of farm supplies could be tested relatively easily in a few simple tests carried out with the cooperation of farmers, e.g. teat salves, tail-tags. Tests on this type of input could be a means of proving the value of a farm input evaluation service to the farmer.

5.10 Summary

The author suggests that because of the possible savings both in labour and in overseas funds which could be realised from having a farm input evaluation service, a Government grant of \$50,000 be made to the Consumer Council to enable it to extend its activities into the field of farm input evaluation.

Both the Consumer Council and the New Zealand Agricultural Engineering Institute are keen to begin comparative testing of farm inputs if sufficient finance is available. The New Zealand Agricultural Engineering Institute in association with Government Departments and Universities could conduct a large range and number of tests. The

Consumer Council, in association with representatives from the Farm Improvement Club movement, could take the responsibility of using the test results to recommend a "best buy" for the farmer.

The author considers that a farm input evaluation service should be initiated on the basis of a Government grant as was the case for both the Consumer Council and the New Zealand Agricultural Engineering Institute. These two organisations have both become independent organisations with some subscribing members, but are completely free from any Government influence and largely immune from pressure from manufacturing organisations.

The author suggests that Farm Improvement Clubs or local rural trading groups begin to look more toward the particular services offered in their district with a view to giving farmers a guide as to the best available. This suggestion applies particularly to analyses of services such as those offered by machinery salesmen, shearing contractors, and aerial and truck topdressing companies. Some assessment of these services would enable the farmer to at least know of alternatives available in his district and would be a force making for more effective competition.

The author feels there is an extension problem in regard to the use of veterinary supplies by farmers because the drugs now on the market are more specific than formerly, and it is also necessary to consider the correct proportions to be used. Problems may be further compounded if the farmer makes an incorrect diagnosis.

The quality of fencing supplies, apart from staples, appears to

be adequate, but difficulties appear to be arising as to the best type of fencing to use and possible cost reductions available from different forms of fencing.

Farm machinery appears to the author to offer the greatest scope for carrying out comparative tests, because from the survey data reported in Chapter 4, it is posing many problems for farmers. It would seem that relatively simple tests on the ease of operation and servicing of the machine could be carried out to compare different makes of machinery.

To initiate a farm input evaluation service the author suggests that those inputs which require simple short-term tests be tested first, e.g. milking machine rubberware, ear-tags. The short-term nature of the tests required would enable results of these tests to be available to the farmer soon after the testing service was instigated, thus helping to prove the value of the service to the farmer and the entire community.

Import licensing needs to be closely considered, not only in its impact on the general cost structure of the economy, but also because of its impact on the cost of certain protected farm inputs. If the present system of import licensing is to continue, the author feels a farm input evaluation service should conduct periodic surveys into the extent of protection of locally manufactured inputs.

5.11 Conclusion

Farmers have indicated a desire for input evaluation, with a promise of financial backing. The Consumer Council and the New Zealand

Agricultural Engineering Institute are prepared to enter such a scheme. The initiative must essentially come from a farmer organisation such as Federated Farmers. Government participation, in the form of a grant would be required to set the scheme in operation. The author feels that if the scheme was successful it would not only save overseas funds and help improve the quality of inputs offered to farmers, but would also assist in maintaining the lowest possible cost structure for the farmer.

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