

HORTICULTURE IN AKAROA COUNTY

by

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PREFACE

This Research Report presents the results of a continuation of work undertaken by the Agricultural Economics Research Unit in the evaluation of resource allocations in the Canterbury area. As such, the report provides a valuable addition to the pool of knowledge which is being accumulated on the Canterbury region.

Banks Peninsula has always been an area of considerable interest for potential development activities. Horticulture has been advanced as a possible important land use. This report provides a starting point for more in-depth research of this possibility. It is anticipated that future research effort will help to bring such development into perspective and provide a basis from which long term land use decisions may be made.

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Mr Devine of the "Akaroa Mail" provided a convenient means of questionnaire distribution and his help is gratefully acknowledged.

My thanks also to the residents of Akaroa County for their assistance with the survey in providing responses to the questions.

The report was typed and sub-edited by my wife, Susan Sheppard, and her assistance has been much appreciated.

SUMMARY

This report presents the results of a survey of horticultural activity in Akaroa County on Banks Peninsula. The survey was undertaken on behalf of the Canterbury Branch of the New Zealand Tree Crops Association with the objective of ascertaining the present degree of horticultural development in Akaroa County. This information was to be used as a basis for further research on the potential of the area for commercial horticultural development.

The questionnaires were distributed to County residents late in December 1980. They were collected by a team from the Agricultural Economics Research Unit (A.E.R.U.) and the Tree Crops Association in mid January. In addition to those collected, a significant further number were received by post.

The results of the questionnaire were analysed in five segments. Respondent profiles and characteristics were established. The crops grown were analysed, the degree of commercial interest was examined and the possible problems of commercial development were summarised. This analysis was carried out for six areas. The total County was used as the main analysis area. Within this, five areas were analysed independently. The areas were Akaroa Township, Takamatua to Barry's Bay, Wainui (from Barry's Bay to the Akaroa Harbour entrance), Pigeon Bay to Okains Bay and Le Bons Bay to North Head. The Summit Road formed the internal dividing line.

The results of the survey indicate a predominance of respondents of 10 years or less residence in the area (50 per cent) with 34 per cent of 21 years or more residence. Those with smaller properties (10 hectares or less) tended to be predominantly the shorter period residents while those with larger properties (100 hectares or more) were predominantly the longer term residents. Stock holding varied

in line with the property size distribution; those with 10 hectares or less mainly having no stock with the larger properties having high stock numbers. A large proportion of respondents indicated they had areas of good drainage (83 per cent) and good water supply (63 per cent). The presence of "favourable areas" (free from frost, warm and north facing, free from damaging winds and free from shading from surrounding slopes) was indicated by 66 per cent of respondents, although subsequent questions indicated that this should be reduced to around 55-60 per cent of respondents.

A wide range of horticultural crops are grown in the area. Berry, pip and stone crops are the most prevalent (92 per cent, 91 per cent and 91 per cent of respondents respectively). Most of this cropping is non-commercial, especially with regard to citrus and sub-tropical crops, where plant numbers per respondent are low (5 or less) indicating a "backyard" production system. These crops were grown in reasonably specific areas. The Wainui area was identified as having a higher proportion of subtropical crop growing while the Akaroa Township area had a higher proportion of citrus crop cultivation.

Berry, nut, pip and stone crops are grown in greater numbers per respondent. These crop types are more suited to the climate of the area and therefore require less care. Also, many of the plants are growing in an untended manner and harvesting is haphazard, generally for domestic use. These crop types grew over a wide area within the County and no particular areas could be identified as particularly favourable.

Commercial interest in horticulture development was limited to 39 per cent of the respondents. Those interested in leasing land or sharefarming were only 14 per cent and 25 per cent respectively. However, 81 per cent of respondents thought the prospects for

successful growing of horticultural crops were favourable or very favourable and 80 per cent of respondents would support in principle the establishment of commercial horticulture in the area.

Transport costs were seen as a problem for commercial development by 53 per cent of respondents. Other problem areas identified were market and labour availability, gorse, lack of water and shelter, development costs and poor roads.

The results allow a number of conclusions to be drawn. The area of land owned appears to be correlated with the degree of interest in commercial horticulture. Respondents with 10 hectares or less and respondents with 250 hectares or more expressed most interest in commercial development. This could be seen as a reflection of the earning capacity of the enterprise. Small land areas require intensive land use techniques, which horticulture provides, in order to earn an adequate income, while on larger properties, areas could be developed for horticulture without affecting the viability or return from current farming operations. Respondents with properties in the 10 to 250 hectare range would not be able to make land available for horticulture without affecting their current operation and the insecurity associated with such development at this time would tend to discourage such ideas.

Present horticultural crop activity in Akaroa County tends to be of a non-commercial nature. Many plants are growing in the County, but with the exception of citrus and subtropical crops, they tend to be grown on an untended, domestic harvest basis. Citrus and subtropical crops are only grown in small entity numbers (mainly 5 plants or less) indicating a "backyard" nature of growing. The transfer of such an activity to a commercial basis may not be practical. The survey, has, however, established that a wide range of crops can be grown. It remains the task of further research to establish whether such production potential can be transferred to a commercial reality.

Many problem areas have not been covered by this research. It was intended that the survey establish what is happening with regard to horticulture in Akaroa County, not what should happen. Production and marketing costs have not been examined and product quality has not been assessed. The degree of interest in commercial horticulture and the present range of horticultural crops provides a basis for further research to be carried out. This should occur before any positive steps are taken to encourage horticultural development in the area.

1. INTRODUCTION

The recent expansion in horticultural activity in New Zealand has led to the development of considerable interest in specific areas that may have a potential for the establishment of a commercial horticulture. Banks Peninsular is one of those areas and the Canterbury Branch of the New Zealand Tree Crops Association has an interest in promoting horticultural activity on Banks Peninsula.

The Association approached the Horticulture, Landscape and Parks Department and the Agricultural Economics Research Unit (A.E.R.U.) at Lincoln College, late in 1980, and proposed that research into the present level and type of horticultural activity on Banks Peninsula be carried out. It was intended that a survey be conducted of Banks Peninsula residents to determine their present involvement in horticulture and their attitude to possible future commercial development. The Association proposed to use the results of such a survey in planning their future activity on Banks Peninsula and the degree of support they were prepared to give to ideas for future development. Following discussions between the Association, the Horticulture Department and the A.E.R.U., it was decided that the A.E.R.U. would carry out the research with the Association and the Horticulture Department providing necessary expertise in reviewing the design of the research from a horticultural point of view. In addition, it was decided that the research should be limited to the Akaroa County, rather than Banks Peninsula.

This Report provides the results of the survey that was carried out. Before doing this, the design of the questionnaire is discussed and, following the result presentation, an analysis of the implications is provided. It is anticipated that this research will form the basis for on-going research by the Canterbury Branch of the New Zealand Tree Crops Association, especially in the identification of specific

microclimate areas for horticultural development and the evaluation of likely production costs and market returns associated with those areas.

2. THE SURVEY

2.1 Selection of Survey Technique

In order to assess the type of wording to be used in a questionnaire, it was necessary to formulate a plan for the effective gathering of the information. An important element in the decision regarding the survey technique was the question of cost. This had to be offset against the effectiveness of the data gathering exercise. As it was considered that the survey should provide only basic information and guidance for future research effort, the cost-data gathering efficiency trade-off was closely evaluated.

The four types of survey considered were the personal interview, telephone interview, postal survey and a combination of the personal interview and postal techniques. The personal interview was considered to be too costly, both in terms of personnel time and associated costs, with regard to the information to be collected. It was considered, however, that this technique would provide the best information.

The telephone interview technique was recognised as the least cost alternative but the information likely to result from such a survey was expected to be only superficial and important areas would not be coverable.

A postal survey was very seriously considered. Such a survey would provide good coverage of the area, in terms of questionnaire distribution, and was thought to be an effective means of gathering information. The return rate of such a questionnaire was not thought likely to be high, however, and the cost of postage for the questionnaire and follow-up reminder notices were a deterrent.

It was considered that an effective survey could be achieved through the combination of the postal and personal interview techniques.

An offer to distribute questionnaires free of charge was received from the "Akaroa Mail". This meant that questionnaires could be distributed throughout Akaroa County to the sample of residents that received the "Akaroa Mail". It was decided to exclude Akaroa Township from this distribution. The "Akaroa Mail", distribution is mainly to permanent residents within the County and, therefore, the questionnaire could be restricted to these residents. This would avoid an extensive distribution to non-permanent residents whose interest in the economic activity of the region could be expected to be low. Approximately 180 questionnaires were distributed on 19 December 1980.

In order to achieve the benefits of personal contact in the collection of information, it was decided that visits should be made to the recipients of the questionnaire. These visits were made during January and the questionnaires were collected at that time. Visits were also made to selected Akaroa township residents so as to complete the Akaroa County coverage. A total of 64 questionnaires were returned.

2.2 The Questionnaire

The questionnaire was designed to provide information on four areas of interest. (A copy of the questionnaire is attached as Appendix 2). In order to obtain a brief profile of the respondents, questions were asked regarding the length of time the respondent had lived on the property and the area of the property. The respondents farming characteristics were also explored. This involved questions relating to the number and type of livestock on the property, the type of agricultural crops grown, the presence of areas of soil with good drainage, water availability, the presence of favourable horticulture

areas, the presence or absence of shelter, and vehicle and machinery access to the favourable areas.

The third section of the information sought dealt with the growing of horticultural crops. Respondents were asked to identify the crops presently growing on their properties and the number of plants (or area) of the crop. Information on the past yields of the crop and the sprays used was also sought. In addition, data on the crop location topography and contour was gathered.

The present interest and potential future involvement in horticulture were covered in the final section. Information was sought on the attitude toward land leasing, sharefarming and own growing of horticultural crops. In addition, an evaluation of "the prospects for the success of growing horticultural crops on Banks Peninsula" and the likely problems associated with commercial horticulture was asked for.

3. TABLES OF RESULTS

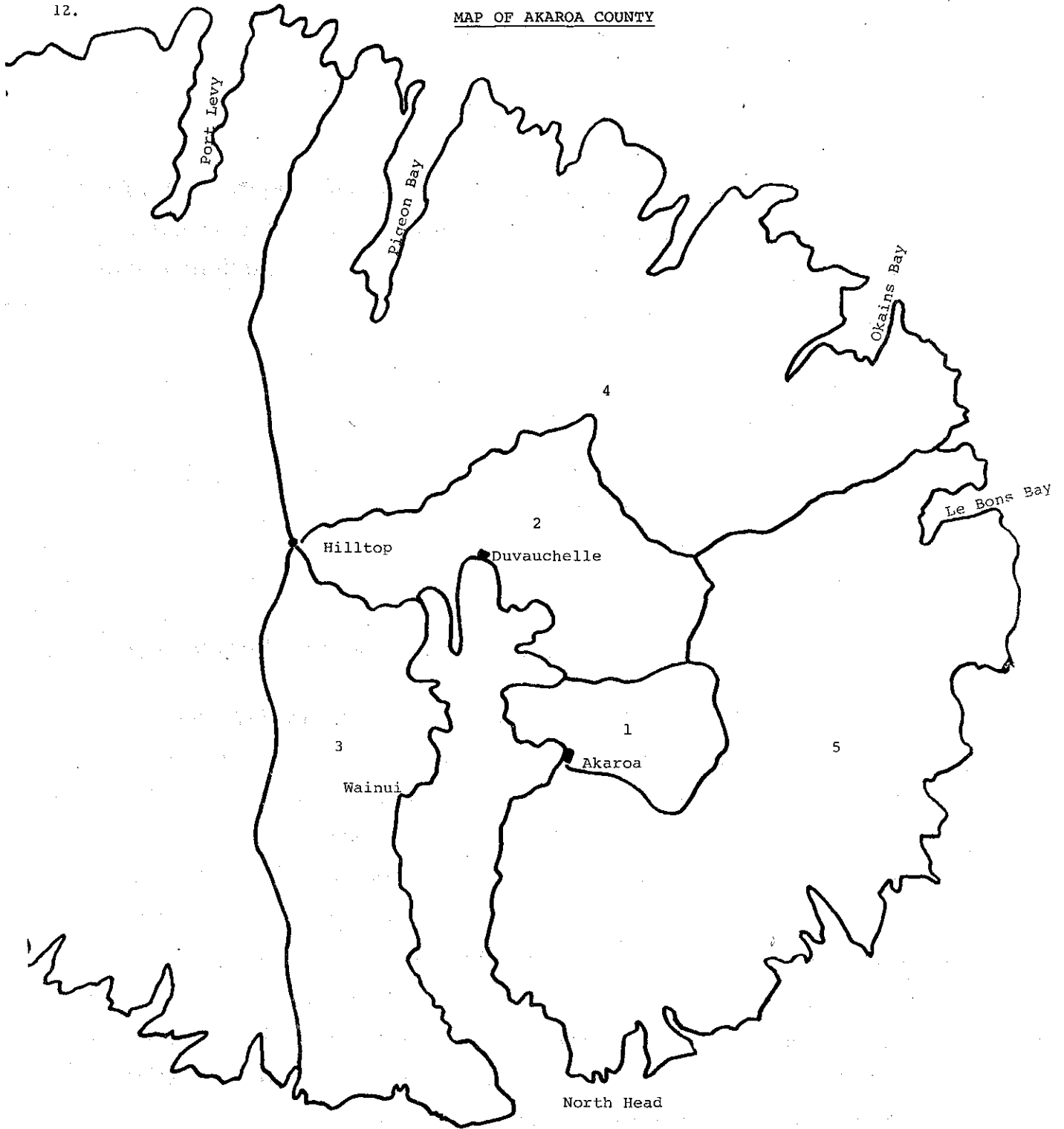
This chapter presents the tables of results for the Akaroa County. In addition to these, tables are given in Appendix 1 for the five areas which the County has been divided into for the purpose of result analysis. The areas are:

1. Akaroa Township
2. Takamatua to Barrys Bay
3. Wainui
4. Pigeon Bay to Okains Bay
5. Le Bons Bay to North Head
6. Akaroa County

The boundaries of these areas are exhibited on the following map.

The areas were decided upon on the basis of the geographical characteristics. Akaroa Township was separately identified as it is a significant urban/semi-urban area where attitudes may be different to the more rural localities. The Takamatua to Barrys Bay area covers the head of the Akaroa harbour and is predominantly north-west to west facing. The Wainui area is on the western side of the harbour and is mainly south-west facing. The outer side of the Peninsula is covered by the two remaining areas. Pigeon Bay to Okains Bay is made up of valleys running toward the north east while Le Bons Bay to North Head is an easterly to south-east facing area. The summit road was taken to be the central dividing line.

MAP OF AKAROA COUNTY



The following tables present the results for Akaroa County incorporating:

- Akaroa Township
- Takamatua to Barrys Bay
- Wainui Area
- Pigeon Bay to Okains Bay
- Le Bons Bay to North Head

3.1 Respondent Profile

TABLE 1
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|--------------------|-------------|------------------|
| % | % | % |
| 50.0 | 15.6 | 34.4 |
| Valid Responses 64 | | |

TABLE 2
Area of Property

| 10 ha ^a or less (25 ac ^b or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|--|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 31.3 | 29.7 | 10.9 | 28.1 |
| Valid Responses 64 | | | |

a. ha - hectares

b. ac - acres

TABLE 3
Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.4 | 4.7 | 3.2 |
| 11-100 ha (26-247 ac) | 18.8 | 3.2 | 7.8 |
| 101-249 ha (248-615 ac) | 1.6 | 0.0 | 9.4 |
| 250 ha or more (616 ac or more) | 6.3 | 7.8 | 14.1 |
| TOTAL | 50.1 | 15.7 | 34.5 |
| Valid Responses | 32 | 10 | 22 |

3.2 Respondent Characteristics

TABLE 4

Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less (25 ac or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|-----------------|----------------------------------|--------------------------|----------------------------|------------------------------------|
| | % | % | % | % |
| No Sheep | 15.6 | 9.4 | 3.2 | 0.0 |
| 1-19 | 7.8 | 1.6 | 0.0 | 0.0 |
| 20-100 | 6.3 | 4.7 | 0.0 | 0.0 |
| 101 or more | 1.6 | 14.1 | 7.8 | 28.1 |
| TOTAL | 31.3 | 29.8 | 11.0 | 28.1 |
| Valid Responses | 20 | 19 | 7 | 18 |
| <hr/> | | | | |
| (b) Cattle | | | | |
| | % | % | % | % |
| No Cattle | 31.3 | 12.5 | 1.6 | 1.6 |
| 1-19 | 0.0 | 7.8 | 1.6 | 1.6 |
| 20-100 | 0.0 | 7.8 | 3.2 | 1.6 |
| 101 or more | 0.0 | 1.6 | 4.7 | 23.4 |
| TOTAL | 31.3 | 29.7 | 11.1 | 28.2 |
| Valid Responses | 20 | 19 | 7 | 18 |

TABLE 5
Good Draining Soil by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 25.0 | 4.7 | 0.0 |
| 101-249 ha (248-615 ac) | 6.3 | 3.2 | 1.6 |
| 250 ha or more (616 ac or more) | 26.6 | 0.0 | 1.6 |
| TOTAL | 82.9 | 7.9 | 3.2 |
| Valid Responses | 53 | 5 | 6 |

TABLE 6
Potential Water Source for Irrigation by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.6 | 9.4 | 6.3 |
| 11-100 ha (26-247 ac) | 20.3 | 7.8 | 1.6 |
| 101-249 ha (248-615 ac) | 4.7 | 4.7 | 1.6 |
| 250 ha or more (616 ac or more) | 21.9 | 6.3 | 0.0 |
| TOTAL | 62.5 | 28.2 | 9.5 |
| Valid Responses | 40 | 18 | 6 |

TABLE 7
Favourable^a Areas by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.6 | 6.3 | 9.4 |
| 11-100 ha (26-247 ac) | 18.8 | 10.9 | 0.0 |
| 101-249 ha (248-615 ac) | 9.4 | 0.0 | 1.6 |
| 250 ha or more (616 ac or more) | 21.9 | 4.7 | 1.6 |
| TOTAL | 65.7 | 21.9 | 12.6 |
| Valid Responses | 42 | 14 | 8 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 8
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 18.8 | 3.2 | 9.4 |
| 11-100 ha (26-247 ac) | 23.4 | 1.6 | 4.7 |
| 101-249 ha (248-615 ac) | 9.4 | 0.0 | 1.6 |
| 250 ha or more (616 ac or more) | 21.9 | 1.6 | 4.7 |
| TOTAL | 73.5 | 6.4 | 20.4 |
| Valid Responses | 47 | 4 | 13 |

TABLE 9
Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.6 | 6.3 | 9.4 |
| 11-100 ha (26-247 ac) | 17.2 | 6.3 | 6.3 |
| 101-249 ha (248-615 ac) | 7.8 | 1.6 | 1.6 |
| 250 ha or more (616 ac or more) | 20.3 | 3.2 | 4.7 |
| TOTAL | 60.9 | 17.4 | 22.0 |
| Valid Responses | 39 | 11 | 14 |

TABLE 10
^a
Whether Sheltered by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 18.8 | 7.8 | 4.7 |
| 11-100 ha (26-247 ac) | 10.9 | 17.2 | 1.6 |
| 101-249 ha (248-615 ac) | 4.7 | 4.7 | 1.6 |
| 250 ha or more (616 ac or more) | 17.2 | 6.3 | 4.7 |
| TOTAL | 51.6 | 36.0 | 12.6 |
| Valid Responses | 33 | 23 | 8 |

^a

indicates presence of sheltered area on property.

TABLE 11
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 10.9 | 6.3 | 6.3 | 14.1 | 25.0 | 45.3 |
| <u>Valid Responses</u> | | | | | |
| 7 | 4 | 4 | 9 | 16 | 29 |

TABLE 12

Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|------------------------------|---------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 26.6 | 4.7 | | | | 4.6 |
| Blackcurrants | 68.8 | 31.3 | 21.9 | 1.6 | 1.6 | 1.6 |
| Blueberries | 6.3 | 4.7 | | | | 1.6 |
| Boysenberries | 14.1 | 6.3 | 1.6 | | | 3.2 |
| Cape Gooseberries | 42.2 | 26.6 | 9.4 | | | |
| Gooseberries | 67.2 | 37.5 | 12.5 | 4.7 | 1.6 | 1.6 |
| Grapes | 54.7 | 42.2 | | | | 3.2 |
| Loganberries | 6.3 | 3.2 | | | | |
| Mulberries | 20.3 | 20.3 | | | | |
| Raspberries | 45.3 | 3.2 | 6.3 | 7.8 | 3.2 | 17.2 |
| Redcurrants | 45.3 | 31.3 | 3.2 | 3.2 | | |
| Strawberries | 60.9 | 3.2 | 3.2 | 6.3 | 6.3 | 29.7 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 60.9 | 51.6 | 1.6 | | | |
| Lemons | 84.4 | 67.2 | 4.7 | | | |
| Mandarines | 34.4 | 29.7 | | | | |
| Oranges | 32.8 | 28.1 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 15.6 | 12.5 | | | | |
| Chestnuts | 31.3 | 20.3 | 4.7 | 1.6 | | |
| Hazelnuts | 18.8 | 12.5 | 1.6 | | | |
| Walnuts | 78.1 | 29.7 | 17.2 | 7.8 | 1.6 | 7.8 |
| (d) Pip Crops | | | | | | |
| Apples | 82.8 | 26.6 | 25.0 | 10.9 | 3.2 | 6.3 |
| Quince | 31.3 | 28.1 | | | | |
| Rockmellons | 6.3 | 1.6 | 1.6 | | | |
| Tomatoes | 79.7 | 4.7 | 7.8 | 7.8 | 4.7 | 42.2 |
| Watermellons | 3.2 | 3.2 | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 4.7 | 3.2 | 1.6 | | | |
| Feijoas | 32.8 | 26.6 | | 1.6 | | |
| Figs | 32.8 | 25.0 | | | | |
| Kiwifruit | 32.8 | 25.0 | 1.6 | | | 1.6 |
| Loquat | 4.7 | 4.7 | | | | |
| Olives | 6.3 | 6.3 | | | | |
| Passionfruit | 39.1 | 31.3 | | | | |
| Tamarillos | 32.8 | 23.4 | 1.6 | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 59.4 | 46.9 | 3.2 | | | |
| Cherries | 37.5 | 28.1 | 1.6 | 1.6 | | |
| Peaches | 65.6 | 42.2 | 14.1 | | | |
| Plums | 65.6 | 39.1 | 9.4 | 3.2 | | 1.6 |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 37.5 | 1.6 | 1.6 | 9.4 | 4.7 | 9.4 |
| Egg Plant | 9.4 | 4.7 | | | | 1.6 |
| Globe Artichoke | 14.1 | 9.4 | | | | |
| Mushrooms | 25.0 | | | | | |
| Peppers | 29.7 | 14.1 | 9.4 | 1.6 | | |
| Yams | 34.4 | 3.2 | 9.4 | 6.3 | 1.6 | 6.3 |
| Zucchinis | 26.6 | 14.1 | 4.7 | | | 1.6 |

Valid Responses 64

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent shown.

TABLE 13

Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|------------------|-------|--------|------|------|-------|-------------|-----------|
| | % | % | % | % | % | % | % |
| 10 years or less | 46.9 | 43.8 | 42.2 | 45.3 | 45.3 | 37.5 | 39.1 |
| 11-20 years | 14.1 | 10.9 | 10.9 | 12.5 | 14.1 | 7.8 | 12.5 |
| 21 years or more | 31.3 | 31.3 | 31.3 | 32.8 | 31.3 | 25.0 | 29.7 |
| TOTAL | 92.3 | 86.0 | 84.4 | 90.6 | 90.7 | 70.3 | 81.3 |
| Valid Responses | 59 | 55 | 54 | 58 | 58 | 45 | 52 |
| Total Responses | 64 | | | | | | |

TABLE 14
Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 25.0 | 7.8 | 10.9 | 48.4 | 7.8 |
| Citrus | 23.4 | 7.8 | 7.8 | 46.9 | 14.1 |
| Nut | 20.3 | 7.8 | 9.4 | 46.9 | 15.6 |
| Pip | 21.9 | 9.4 | 10.9 | 48.4 | 9.4 |
| Stone | 23.4 | 9.4 | 9.4 | 48.4 | 9.4 |
| Subtropical | 17.2 | 9.4 | 6.3 | 37.5 | 29.7 |
| Vegetable | 20.3 | 7.8 | 9.4 | 39.1 | 23.5* |

Valid Responses 64

* includes 4.7% no response.

TABLE 15
Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 12.5 | 6.3 | 26.6 | 4.7 | 42.2 | 7.8 |
| Citrus | 12.5 | 7.8 | 28.1 | 3.2 | 34.4 | 14.1 |
| Nut | 10.9 | 7.8 | 23.4 | 3.2 | 39.1 | 15.6 |
| Pip | 12.5 | 6.3 | 29.7 | 3.2 | 39.1 | 9.4 |
| Stone | 10.9 | 6.3 | 31.3 | 4.7 | 37.5 | 9.4 |
| Subtropical | 9.4 | 7.8 | 23.4 | 1.6 | 28.1 | 29.7 |
| Vegetable | 9.4 | 6.3 | 26.6 | 4.7 | 34.4 | 18.8 |

Valid Responses 64

TABLE 16

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 m or less (50 ft or less) | 16-30 m (51-100 ft) | 31-121 m (101-399 ft) | 122-300 m (400-999 ft) | 301 m or more (1 000 ft or more) | No Response | Not Applicable |
|--------------------|----------|---------------------------------|------------------------|--------------------------|---------------------------|-------------------------------------|----------------|-------------------|
| | % | % | % | % | % | % | % | % |
| Berry | 3.2 | 9.4 | 3.2 | 23.4 | 9.4 | 4.7 | 39.1 | 7.8 |
| Citrus | 3.2 | 9.4 | 3.2 | 26.6 | 9.4 | 1.6 | 32.8 | 14.1 |
| Nuts | 3.2 | 10.9 | 3.2 | 26.6 | 9.4 | 3.2 | 28.1 | 15.6 |
| Pip | 3.2 | 10.9 | 3.2 | 26.6 | 9.4 | 3.2 | 34.4 | 9.4 |
| Stone | 3.2 | 10.9 | 3.2 | 26.6 | 9.4 | 3.2 | 34.4 | 9.4 |
| Subtropical | 1.6 | 7.8 | 1.6 | 20.3 | 9.4 | 1.6 | 28.1 | 29.7 |
| Vegetable | 3.2 | 9.4 | 3.2 | 20.3 | 9.4 | 4.7 | 31.3 | 18.8 |
| Valid Responses 64 | | | | | | | | |

3.4 Commercial Interest

TABLE 17

Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 14.1 | 10.9 | 6.3 |
| 11-100 ha (26-247 ac) | 7.8 | 15.6 | 6.3 |
| 101-249 ha (248-615 ac) | 1.6 | 7.8 | 1.6 |
| 250 ha or more (616 ac or more) | 15.6 | 10.9 | 1.6 |
| TOTAL | 39.1 | 45.2 | 15.8 |
| Valid Responses | 25 | 29 | 10 |

TABLE 18

Willingness to Lease Land by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 1.6 | 21.9 | 7.8 |
| 11-100 ha (26-247 ac) | 3.2 | 21.9 | 4.7 |
| 101-249 ha (248-615 ac) | 3.2 | 6.3 | 1.6 |
| 250 ha or more (616 ac or more) | 6.3 | 18.8 | 3.2 |
| TOTAL | 14.3 | 68.9 | 17.3 |
| Valid Responses | 9 | 44 | 11 |

TABLE 19
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 7.8 | 15.6 | 7.8 |
| 11-100 ha (26-247 ac) | 4.7 | 17.2 | 7.8 |
| 101-249 ha (248-615 ac) | 1.6 | 7.8 | 1.6 |
| 250 ha or more (616 ac or more) | 10.9 | 12.5 | 4.7 |
| TOTAL | 25.0 | 53.1 | 21.9 |
| Valid Responses | 16 | 34 | 14 |

^a Sharefarm defined as sharing with approved growers

TABLE 20
Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous | No Response |
|------------------------------------|-----------------|------------|---------|--------------|------------|-------------|
| | % | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 14.1 | 3.2 | 0.0 | 0.0 | 1.6 |
| 11-100 ha (26-247 ac) | 9.4 | 14.1 | 3.2 | 0.0 | 1.6 | 1.6 |
| 101-249 ha (248-615 ac) | 0.0 | 7.8 | 0.0 | 0.0 | 0.0 | 3.2 |
| 250 ha or more (616 ac or more) | 6.3 | 17.2 | 4.7 | 0.0 | 0.0 | 0.0 |
| TOTAL | 28.2 | 53.2 | 11.1 | 0.0 | 1.6 | 6.4 |
| Valid Responses | 18 | 34 | 7 | 0 | 1 | 4 |

TABLE 21
Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 0.0 | 6.3 |
| 11-100 ha (26-247 ac) | 23.4 | 4.7 | 1.6 |
| 101-249 ha (248-615 ac) | 6.3 | 0.0 | 4.7 |
| 250 ha or more (616 ac or more) | 25.0 | 1.6 | 1.6 |
| TOTAL | 79.7 | 6.3 | 14.2 |
| Valid Responses | 51 | 4 | 9 |

3.5 Problems

TABLE 22

Problems of Developing Horticulture in Akaroa County

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 18.8 | 53.1 | 21.9 | 29.7 | 14.1 | 9.4 | 4.7 | 3.2 | 18.8 | 9.4 |
| <u>Valid Responses</u> | | | | | | | | | |
| 12 | 34 | 14 | 19 | 9 | 6 | 3 | 2 | 12 | 6 |

Total Responses 64

4. ANALYSIS OF RESULTS

This analysis has been carried out from the point of view of the total County. This means that the results given in section 3 form the basis of the comments made. Significant regional differences are referred to, where these occur.

4.1 Respondent Profile

(Tables 1-3)

Exactly half of the respondents had lived on their present properties for 10 years or less while a third had lived there for 21 years or more. The proportion of the respondents of 10 years or less residence rose to 75 per cent in Akaroa township, with only 8 per cent of 21 years or more residence, while in Area 4 (Pigeon Bay to Okains Bay), the situation was reversed with 70 per cent of respondents of 21 years or more residence and only 10 per cent resident for 10 years or less.

Property areas were well distributed with approximately 30 per cent in each of the 10 hectare or less, 11-100 hectare and over 250 hectare groups. Akaroa township respondents exhibited an ownership pattern of all less than 100 hectares while the Pigeon Bay to Okains Bay and Le Bons Bay to North Head areas had a much higher proportion of properties of over 100 hectares.

A high proportion of the respondents of less than 10 years residence were on properties of less than 100 hectares (42.2 per cent out of a possible 50.1 per cent of the respondents) while 23.5 per cent of a possible 34.5 per cent of the respondents were of more than 21 years residence and on properties of over 100 hectares.

4.2 Respondent Characteristics

(Tables 4-11)

Of the respondents, 28 per cent had no sheep, these being mainly the less than 10 hectare property owners, while 52 per cent had more than 100 sheep (half of these being on the 250 hectare or greater properties). In terms of cattle ownership, 47 per cent of the respondents had no cattle, while 30 per cent had over 100 cattle. The emphasis was on a high proportion of non-cattle owners on small properties and a high proportion of cattle owners on large properties.

Regional differences again exposed the Akaroa township respondents as a high proportion of non-stock owners while the Pigeon Bay to Okains Bay and Le Bons Bay to North Head respondents were predominantly stock owning.

In order to assess the water situation, both in terms of drainage and supply, responses were sought covering this area. Of the respondents, 83 per cent indicated that they had significant areas of good draining soil while 63 per cent indicated that they had water available for irrigation. All areas had a similar response to the drainage question but, with regard to irrigation water supply, a higher proportion of respondents from the Pigeon Bay to Okains Bay and Le Bons Bay to North Head areas indicated they had a potential irrigation source (70 per cent and 75 per cent respectively).

"Favourable areas" were defined as being areas which are free from frost, warm and north facing, free from damaging winds and free from shading from surrounding slopes. Two thirds of the respondents indicated that they had such areas and of these, all indicated that they had vehicle and farm machinery access to these areas. The proportion

of Pigeon Bay to Okains Bay respondents with such areas and adequate access was higher at 90 per cent while the Wainui area was lower at 54 per cent.

As a check on the response to the questions regarding "favourable areas", a further question regarding shelter specifically was asked. Only 52 per cent of respondents indicated that they had significant sheltered areas on their properties (in contrast to the 66 per cent who considered they had areas free from damaging winds). This may not be a conflict, however, as if an area is free from damaging winds, it might be considered not to need shelter. It should be considered, therefore, that about 55-60 per cent of respondents considered that they had areas which could be defined as being useful for horticulture. The proportion of Wainui respondents who considered they had adequately sheltered areas was only 23 per cent, however (versus 54 per cent with "favourable areas"), and the question of shelter in this area should therefore receive more consideration. The question with regard to type of shelter received a low response rate (45 per cent with no response) and the results are therefore less useful. However, the predominant means of shelter was identified as "both hills and trees". Trees on their own were cited at a higher proportion by Takamatua to Barrys Bay respondents and Le Bons Bay to North Head respondents reflecting the impact of southerly winds on land exposed to this direction.

4.3 Crops

(Tables 12-16)

4.3.1 Berry Crops

Of the total respondents, 92 per cent were growing some form of berry crop. Over the five areas, the percentage ranged from 80 per cent to 100 per cent of the respondents. The main berry crops

grown are blackcurrants, gooseberries, grapes and strawberries, with in excess of 50 per cent of respondents growing them. Other important berry crops are Cape Gooseberries (42 per cent), Raspberries and Redcurrants (both 45 per cent), Blackberries (27 per cent) and Mulberries (20 per cent). In addition, Blueberries, Boysenberries and Loganberries are grown.

Regional differences that show up include a lower popularity of grapes in the Wainui and Pigeon Bay to Okains Bay areas (both at about 40 per cent of respondents), and a higher proportion of respondents growing Cape Gooseberries in the Pigeon Bay to Okains Bay and Le Bons Bay to North Head areas (60 per cent and 50 per cent respectively). Raspberries and Boysenberries were grown by a greater proportion of respondents in the Wainui and Pigeon Bay to Okains Bay areas.

4.3.2 Citrus Crops

Citrus crops were grown by 86 per cent of the respondents. Grapefruit were grown by 61 per cent of respondents and Lemons were grown by 84 per cent of respondents. Mandarins and Oranges were grown by a third of the respondents. In Akaroa Township, the proportion of respondents growing Grapefruit and Lemons rose to 75 per cent and 92 per cent respectively while in the Takamatua to Barrys Bay area, the proportion of respondents growing Grapefruit fell to 48 per cent. Only 38 per cent of Le Bons Bay to North Head area respondents grew grapefruit.

4.3.3 Nut Crops

Eighty-six per cent of respondents were growing nut crops. Walnuts are the predominant nut crop with 78 per cent of respondents

growing Walnuts. Chestnuts are grown by 32 per cent of respondents and Hazelnuts and Almonds are grown by 19 per cent and 16 per cent of respondents respectively. Chestnuts are more popular in the Pigeon Bay to Okains Bay area (50 per cent of respondents) and less popular in the Wainui area (15 per cent of respondents). Hazelnuts were grown by only 5 per cent of respondents in the Takamatua to Barrys Bay area while Almonds were grown by 30 per cent of Wainui area respondents. No Pigeon Bay to Okains Bay respondents grew Almonds.

4.3.4 Pip Crops

Of the total respondents, 91 per cent were growing pip crops. Apples were grown by 83 per cent of respondents and Quince were grown by 31 per cent of respondents. The proportion of Akaroa Township respondents growing Quince was only 8 per cent while 70 per cent of Pigeon Bay to Okains Bay respondents grew Quince. Watermellons and Rockmellons were grown by only 3 per cent and 6 per cent of respondents respectively.

4.3.5 Subtropical Crops

Seventy per cent of respondents were growing subtropical crops. The most important subtropical crops were Passionfruit (39 per cent of respondents) and Feijoas, Figs, Kiwifruit and Tamarillos (33 per cent of respondents each). Avacadoes, Loquats and Olives are also grown. Subtropical crops were most favoured in the Wainui area with over half of the respondents growing Passionfruit and Tamarillos, 38 per cent growing Feijoas and Kiwifruit and 46 per cent growing Figs. Also of significance was the Pigeon Bay to Okains Bay area

where the percentages were higher than the average. Avacados and Olives are grown in Akaroa Township, the Wainui area and Pigeon Bay to Okains Bay area and Loquats are grown in Akaroa Township, the Wainui area, and Le Bons Bay to North Head area.

4.3.6 Stone Crops

Stone crops were grown by 91 per cent of respondents. Apricots, Peaches and Plums are the predominant crops (59 per cent, 66 per cent and 66 per cent of respondents respectively) and Cherries are grown by 38 per cent of respondents. All areas exhibited a similar response pattern to the average for all the stone crops.

4.3.7 Vegetable Crops

Only the less common types of vegetables were listed on the questionnaire and 81 per cent of respondents were growing at least one of them. In excess of a quarter of respondents were growing Asparagus, Pepper, Yams and Zucchinis. Egg Plant and Globe Artichoke were grown by 9 per cent and 14 per cent of respondents respectively.

4.3.8 Location of Crops

Only half of the respondents gave an answer to the questions regarding the topography of their crop growing area and the height above sea level (contour). Of those who answered the questions, approximately half indicated that their crops were growing on gentle slopes (less than 30 degrees). Some indicated that they were growing their crops on steep slopes (greater than 30 degrees) but the proportion growing subtropical crops on such areas was significantly lower.

Half of those who answered the question on contour indicated that they were growing their crops at between 31 and 121 metres above sea level while about 10 per cent (of those who answered) were growing their crops at above 300 metres above sea level (including one respondent growing a subtropical crop).

4.4 Commercial Interest

(Tables 17-21)

Only 39 per cent of respondents indicated an interest in growing horticultural crops commercially; 14 per cent on properties of 10 hectares or less and 15 per cent on properties of 250 hectares or more. The proportion rose to 70 per cent and 50 per cent in the Pigeon Bay to Okains Bay and Le Bons Bay to North Head areas respectively, mainly from respondents on 250 hectare or more properties. In the Takamatua to Barrys Bay and Wainui areas, the proportion fell to 29 per cent and 23 per cent respectively.

Only 14 per cent of respondents were willing to lease land. In the Wainui and Pigeon Bay to Okains Bay areas, the proportion was 31 per cent and 20 per cent respectively while in Akaroa Township, Takamatua to Barrys Bay and Le Bons Bay to North Head areas, the proportions were 0 per cent, 10 per cent and 13 per cent respectively.

Twenty-five per cent of respondents were willing to sharefarm (11 per cent from the 250 hectare or more properties). The proportion ranged from 17 per cent in Akaroa Township (a reflection of the smaller properties) to 38 per cent in the Le Bons Bay to North Head area (all from 250 hectare or more properties).

Eighty-one per cent of respondents thought that the prospects for success of growing horticultural crops on Banks Peninsula were favourable or very favourable, 11 per cent were neutral and one respondent thought prospects were "disastrous" (6 per cent did not respond). Akaroa Township, Pigeon Bay to Okains Bay and Le Bons Bay to North Head respondents were more optimistic (92 per cent, 90 per cent and 100 per cent respectively, with a favourable or very favourable opinion), with Takamatua to Barrys Bay and Wainui respondents being less optimistic (72 per cent and 69 per cent respectively with a favourable or very favourable opinion).

In terms of their willingness to support in principle, the establishment of commercial horticulture, 80 per cent indicated in the affirmative. Both Akaroa Township and Le Bons Bay to North Head respondents gave a 100 per cent "yes" response, 67 per cent and 69 per cent of Takamatua to Barrys Bay and Wainui respondents, respectively, were willing to support and 80 per cent of Pigeon Bay to Okains Bay respondents also had a positive response.

4.5 Problems

(Table 22)

Respondents were asked to list any problems they foresaw associated with the development of horticulture in Akaroa County. Transport costs were cited by 53 per cent of respondents as being a problem, finding markets and labour availability were seen by 30 per cent and 22 per cent of respondents (respectively) as problems and 19 per cent thought gorse was a problem. Water supply and lack of shelter were cited by only 14 per cent and 5 per cent of respondents (respectively) as potential problems. Cost of development was seen by 9 per cent of respondents as a problem and poor roads were

considered a problem by 3 per cent of respondents. A range of other problems were cited by 19 per cent of respondents. Only 9 per cent of respondents thought there would be no problems with horticultural development.

Regional differences that were exhibited included a higher proportion of respondents in the Wainui area identifying water supply as a problem (39 per cent) and 15 per cent of respondents from the same area identifying lack of shelter as a problem. Gorse was seen as a more significant problem in the Le Bons Bay to North Head area (38 per cent of respondents). Labour availability and cost was seen as a problem in the Wainui, Pigeon Bay to Okains Bay and Le Bons Bay to North Head areas (39 per cent, 40 per cent and 38 per cent of respondents respectively).

5. CONCLUSIONS

5.1 Respondent Profiles and Characteristics

A large proportion of the respondents had lived on their properties for less than 10 years; they generally had properties of 10 hectares or less. This situation reflects the considerable increase in the popularity of semi-urban/semi-rural land occupation over recent years and the reasonably high level of land ownership transfer in the area.

The high proportion of small property respondents has a correlation in the high number of properties with few livestock. Small properties do not lend themselves to extensive livestock management for the purpose of earning an income and this is reflected in the survey results.

Prior to the analysis of survey results, it was expected that water supply would be a serious problem over most of the area. A high proportion of respondents (63 per cent) suggested, however, that they did have a potential irrigation source. This level of response must be considered in the light of the respondent experience, however. The major water use for many respondents over the past will have been the provision of stock water. Requirements for this purpose will be much lower than the requirement for horticultural irrigation and therefore the positive response level must be considered in this light.

The proportion of respondents indicating the presence of "favourable areas" (66 per cent) must be considered in the light of a subsequent question on the availability of shelter. The proportion with sheltered areas was 52 per cent, indicating a possible problem with the level of the response indicating the presence of "favourable

areas". Based on this, it would probably be more useful to expect that about 55-60 per cent of respondents have "favourable areas". The size of such areas might be expected to differ according to the size of the respondent's landholding. This aspect was not enquired into, but the results could form a basis for useful further investigation.

5.2 Crops

The results of the survey indicate that a wide range of horticultural activity takes place in Akaroa County. This activity is largely of a non-commercial nature, however, and therefore the areas of crops and the number of plants per establishment are small. Much of the production is not harvested, e.g. walnuts and apples, with only that required for domestic use being gathered. Also, many of the plants are growing in an untended state on farmland areas which are used for the grazing of livestock. These comments apply mainly to the crop types where general climatic conditions could be expected to encourage their growth.

With regard to the more exotic crops of a subtropical nature and citrus crops, individual attention is required. These crops are grown in very small concentrations of up to 5 plants (sometimes more) and are located very specifically and individually cared for. This type of treatment may not be possible where production is contemplated on a commercial scale. The creation of artificial microclimate conditions to enable the growth of such crops, while being possible on a small scale, may not be feasible for a larger scale commercial operation. Where favourable areas exist naturally (66 per cent of respondents indicated they have favourable areas), the development of a commercial production system may be viable.

A very high proportion of respondents were involved in growing crops of one type or another (70 per cent for subtropical to 92 per cent for berry crops). These proportions do not imply that this proportion of Akaroa County residents are growing horticultural crops. As the questionnaire was more likely to have elicited a response from people who are inclined to consider horticulture as an alternative land use, these proportions are likely to be higher than that for the total population. The results do confirm a high level of horticultural activity, however, and therefore suggest that a higher level of activity (amongst non-respondents) is possible given the existence of favourable conditions.

The survey was not specific enough to enable the identification of key areas for the production of specific crops but indications of the better areas, from the regional differences, can be observed.

Berry crops are grown over all areas and regional analyses need to be done on a per crop basis. Grapes were not favoured in the Wainui area, possibly as a result of shading from the north and therefore lower sunshine hours. It is not reasonable to draw other conclusions in the berry crop area as the results do not reveal large enough regional differences.

Citrus crops were grown more predominantly in the Akaroa Township area and less on the south facing areas. The predominance in Akaroa Township probably reflects the need for more individual attention and winter shelter in order to achieve an acceptable crop. All respondents (except one), were growing less than five plants, reflecting the essentially back-garden aspect of this form of crop.

Nut crops, especially walnuts, were widespread over the County. Many of the trees are very old and were not planted by the present residents. The trees are self sustaining in many cases, no

attention being given to them or to a systematic harvest from them. This would indicate that the production of nuts, especially walnuts, would not appear to be a very difficult proposition in this area. The survey did not attempt to discover the quality of the product from the trees and this would need to be more fully explored. Almonds are not a particularly favoured crop in the County, probably indicating the need for better growing conditions than are available.

Apple trees are in abundance in Akaroa County, reflecting the ease with which such crops are grown in this area. Comments regarding quality achieved are not able to be made, however.

An important result of the survey was the high proportion of respondents growing subtropical crops (70 per cent). The Wainui area recorded the highest levels and a wide range of crops. Climatic conditions in this area could therefore be considered relatively favourable, at least in specific parts of it. Most of the respondents were only growing very small numbers of plants of these crops and the extension of the results to a commercial operation would need to be treated with caution, however. This level of interest could, however, be further examined and possible commercial size sites may be available.

Stone crops are widely grown in the area with a significant number of respondents growing more than five trees. Some of these crop areas have been worked commercially but results have apparently been disappointing. The ability of the trees to grow is unquestioned, however, crop quality may be a problem.

5.3 Commercial Interest

The survey was intended to provide information on the horticultural activity of the area. This has been successful in terms of

providing information on the range of crops grown and the general areas where specific crops are more common. In addition, information on the type of land holder who is involved in horticulture has been gathered. It appears that those land holders with either small properties (i.e. 10 hectares or less) or large properties (i.e. 250 hectares or more) are the ones likely to be involved in horticulture and interested in commercial development. It could be suggested that this is a result of two things. If a land holder has 10 hectares or less, the achievement of a satisfactory income from traditional forms of agriculture is not likely. Therefore, the land holder is more likely to be interested in new ways of obtaining an income through more intensive use of his limited land resource. This can possibly be achieved through a horticultural crop. On the other hand, the land holder with a large area can afford to make a portion of his property available for horticultural use without seriously affecting the viability of, and income from, his traditional farming operation. It could further be postulated that the small land holder is viewing horticulture as a sole income source on which he is dependent whereas the large landholder views horticulture as a speculative investment. These conclusions are reinforced by the degree of interest exhibited in commercial horticulture (Table 17) where the large and small land holders were the strongest supporters. The intermediate group of land holders (11-249 hectares) were less interested in horticulture. It could be suggested that they are able to extract an adequate income from traditional agriculture and, because their landholdings are relatively small, they do not have the flexibility necessary to introduce a horticultural area without severely affecting their present system. The future development of commercial horticulture could therefore be expected to be with the small and large land holders of the area, rather than the intermediate ones.

Interest in commercial growing was not strong, however, with only 39 per cent of respondents expressing such interest. The

concepts of leasing and sharefarming were even less well supported, although 81 per cent of respondents though prospects for the commercial success of horticulture in the area were favourable. As well, 80 per cent of respondents were willing to support commercial development in principle. This type of response indicates that the respondents are happy to give "moral support" to the idea of commercial development but do not see income from such an activity as a satisfactory return on the required investment of capital and labour. It may also indicate a lack of information on the means of growing horticultural crops successfully. The response to the question on possible problems revealed a reasonable degree of problem definition by respondents. This, combined with a high level of support, could indicate that potential horticultural crop producers have evaluated the opportunities available and have concluded that commercial horticultural development is not feasible.

5.4 Further Study

This survey has done nothing more than provide a starting point for a more in-depth analysis of the potential of the area. The results of the survey indicate that many horticultural crops are grown in Akaroa County and that their distribution is widespread. This information can be used as a basis for further research on the climatic conditions under which the crops are grown and, from there, the assessment of the extent of such climatic conditions favourable to horticulture.

The establishment of the fact that horticultural plants will grow in the area does not mean that this activity should necessarily be encouraged. Production of a product does not mean that it is assured of economic success. If production costs plus marketing costs from

this area exceed those of competing regions, the economic desirability of horticultural development must be questioned. This study has contributed nothing to the understanding of comparative production/marketing costs and therefore cannot be used as a basis for commercial development. Much more research into these areas is required before any commercial development is undertaken. The study does indicate that based on current evidence, such further research should be undertaken. Some growers are attempting to establish commercial operations in the area and the need for further information is therefore strongly indicated.

APPENDICES

APPENDIX 1

Tables of Results by Area

1.1 AKAROA TOWNSHIP

1.1.1 Respondent Profile

TABLE 1
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|------------------|-------------|------------------|
| % | % | % |
| 75.0 | 16.7 | 8.3 |

Valid Responses 12

TABLE 2
Area of Property

| 10 ha ^a or less (25 ac ^b or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|--|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 58.3 | 41.7 | 0.0 | 0.0 |

Valid Responses 12

^a ha - hectares

^b ac - acres

TABLE 3

Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 41.7 | 16.7 | 0.0 |
| 11-100 ha (26-247 ac) | 33.3 | 0.0 | 8.3 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> |
| TOTAL | 75.0 | 16.7 | 8.3 |
| Valid Responses | 9 | 2 | 1 |

1.1.2 Respondents Characteristics

TABLE 4
Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less | 11-100 ha | 101-249 ha | 250 ha or more |
|-----------------|----------------|-------------|--------------|------------------|
| | (25 ac or less | (26-247 ac) | (248-615 ac) | (616 ac or more) |
| | % | % | % | % |
| No Sheep | 33.3 | 16.7 | 0.0 | 0.0 |
| 1-19 | 8.3 | 0.0 | 0.0 | 0.0 |
| 20-100 | 16.7 | 8.3 | 0.0 | 0.0 |
| 101 or more | 0.0 | 16.7 | 0.0 | 0.0 |
| TOTAL | 58.3 | 41.7 | 0.0 | 0.0 |
| Valid Responses | 7 | 5 | 0 | 0 |
| <hr/> | | | | |
| (b) Beef Cattle | | | | |
| No cattle | 58.3 | 25.0 | 0.0 | 0.0 |
| 1-19 | 0.0 | 16.7 | 0.0 | 0.0 |
| 20-100 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101 or more | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL | 58.3 | 41.7 | 0.0 | 0.0 |
| Valid Responses | 7 | 5 | 0 | 0 |

TABLE 5
Good Draining Soil by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 50.0 | 0.0 | 8.3 |
| 11-100 ha (26-247 ac) | 33.3 | 8.3 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 83.3 | 8.3 | 8.3 |
| Valid Responses | 10 | 1 | 1 |

TABLE 6
Potential Water Source for Irrigation by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 16.7 | 33.3 | 8.3 |
| 11-100 ha (26-247 ac) | 41.7 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 58.4 | 33.3 | 8.3 |
| Valid Responses | 7 | 4 | 1 |

TABLE 7
Favourable^a Areas by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 25.0 | 8.3 |
| 11-100 ha (26-247 ac) | 33.3 | 8.3 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 58.3 | 33.3 | 8.3 |
| Valid Responses | 7 | 4 | 1 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 8
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 33.3 | 8.3 | 16.7 |
| 11-100 ha (26-247 ac) | 33.3 | 0.0 | 8.3 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 66.6 | 8.3 | 25.0 |
| Valid Responses | 8 | 1 | 3 |

TABLE 9
Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 16.7 | 16.7 |
| 11-100 ha (26-247 ac) | 25.0 | 8.3 | 8.3 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 50.0 | 25.0 | 25.0 |
| Valid Responses | 6 | 3 | 3 |

TABLE 10
^a
Whether Sheltered by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 50.0 | 8.3 | 0.0 |
| 11-100 ha (26-247 ac) | 33.3 | 8.3 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 83.3 | 16.6 | 0.0 |
| Valid Responses | 10 | 2 | 0 |

^a indicates presence of sheltered area on property.

TABLE 11
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 0.0 | 8.3 | 0.0 | 16.7 | 58.3 | 16.7 |
| <u>Valid Responses</u> | | | | | |
| 0 | 1 | 0 | 2 | 7 | 2 |

1.1.3 Crops

TABLE 12
Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|-----------------------|---------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 41.7 | | | | | 8.3 |
| Blackcurrants | 66.7 | 41.7 | 8.3 | | | |
| Blueberries | 8.3 | 8.3 | | | | |
| Boysenberries | 0.0 | | | | | |
| Cape Gooseberries | 41.7 | 16.7 | 8.3 | | | |
| Gooseberries | 75.0 | 33.3 | 8.3 | 8.3 | | |
| Grapes | 58.3 | 41.7 | | | | |
| Loganberries | 0.0 | | | | | |
| Mulberries | 0.0 | | | | | |
| Raspberries | 25.0 | | | 8.3 | 8.3 | 8.3 |
| Redcurrants | 25.0 | 8.3 | | | | |
| Strawberries | 33.3 | 8.3 | | 8.3 | | 8.3 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 75.0 | 66.7 | | | | |
| Lemons | 91.7 | 58.3 | 8.3 | | | |
| Mandarines | 33.3 | 33.3 | | | | |
| Oranges | 33.3 | 33.3 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 16.7 | 8.3 | | | | |
| Chestnuts | 41.7 | 16.7 | 16.7 | | | |
| Hazelnuts | 33.3 | 8.3 | 8.3 | | | |
| Walnuts | 83.3 | 25.0 | | 8.3 | | 25.0 |
| (d) Pip Crops | | | | | | |
| Apples | 75.0 | 8.3 | 8.3 | 16.7 | 8.3 | |
| Quince | 8.3 | | | | | |
| Rockmellons | 8.3 | | 8.3 | | | |
| Tomatoes | 58.3 | 8.3 | | 8.3 | | 16.7 |
| Watermellons | 0.0 | | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 8.3 | | 8.3 | | | |
| Feijoas | 58.3 | 41.7 | | | | |
| Figs | 41.7 | 16.7 | | | | |
| Kiwifruit | 50.0 | 33.3 | | | | |
| Loquat | 8.3 | 8.3 | | | | |
| Olives | 16.7 | 16.7 | | | | |
| Passionfruit | 58.3 | 33.3 | | | | |
| Tamarillos | 25.0 | 16.7 | | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 66.7 | 66.7 | | | | |
| Cherries | 50.0 | 33.3 | | 8.3 | | |
| Peaches | 58.3 | 16.7 | 16.7 | | | |
| Plums | 58.3 | 16.7 | 8.3 | 8.3 | | |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 25.0 | | | 8.3 | | |
| Egg plant | 8.3 | 8.3 | | | | |
| Globe Artichoke | 16.7 | 8.3 | | | | |
| Mushrooms | 25.0 | | | | | |
| Peppers | 33.3 | 16.7 | 8.3 | | | |
| Yams | 8.3 | | | | | |
| Zucchini | 25.0 | 16.7 | | | | |
| Valid Responses 12 | | | | | | |

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent grown.

TABLE 13

Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|--------------------|-------|--------|------|------|-------|-------------|-----------|
| | % | % | % | % | % | % | % |
| 10 years or less | 66.7 | 66.7 | 66.7 | 66.7 | 58.3 | 75.0 | 33.3 |
| 11-20 years | 16.7 | 16.7 | 8.3 | 8.3 | 8.3 | 16.7 | 16.7 |
| 21 years or more | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| TOTAL | 91.7 | 91.7 | 83.3 | 83.3 | 74.9 | 100.0 | 58.3 |
| Valid Responses | 11 | 11 | 10 | 10 | 9 | 12 | 7 |
| Total Responses 12 | | | | | | | |

TABLE 14
Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 50.0 | 8.3 | 25.0 | 8.3 | 8.3 |
| Citrus | 50.0 | 8.3 | 16.7 | 16.7 | 8.3 |
| Nut | 33.3 | 8.3 | 25.0 | 16.7 | 16.7 |
| Pip | 33.3 | 8.3 | 25.0 | 16.7 | 16.7 |
| Stone | 41.7 | 8.3 | 16.7 | 8.3 | 25.0 |
| Subtropical | 50.0 | 8.3 | 16.7 | 25.0 | 0.0 |
| Vegetable | 33.3 | 8.3 | 16.7 | 0.0 | 41.7 |

Valid Responses 12

TABLE 15
Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 25.0 | 16.7 | 16.7 | 0.0 | 33.3 | 8.3 |
| Citrus | 25.0 | 25.0 | 16.7 | 0.0 | 25.0 | 8.3 |
| Nut | 8.3 | 25.0 | 16.7 | 0.0 | 33.3 | 16.7 |
| Pip | 16.7 | 16.7 | 16.7 | 0.0 | 33.3 | 16.7 |
| Stone | 16.7 | 16.7 | 16.7 | 0.0 | 25.0 | 25.0 |
| Subtropical | 25.0 | 25.0 | 16.7 | 0.0 | 33.3 | 0.0 |
| Vegetable | 8.3 | 16.7 | 16.7 | 0.0 | 16.7 | 41.7 |

Valid Responses 12

TABLE 16

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 m or less | 16-30 m | 31-121 m | 122-300 m | 301 m or more | No | Not |
|-------------|----------|-----------------|-------------|--------------|--------------|--------------------|----------|------------|
| | | (50 ft or less) | (51-100 ft) | (101-399 ft) | (400-999 ft) | (1 000 ft or more) | Response | Applicable |
| | % | % | % | % | % | % | % | % |
| Berry | 0.0 | 8.3 | 8.3 | 33.3 | 0.0 | 0.0 | 41.7 | 8.3 |
| Citrus | 0.0 | 8.3 | 8.3 | 41.7 | 0.0 | 0.0 | 33.3 | 8.3 |
| Nuts | 0.0 | 8.3 | 8.3 | 41.7 | 0.0 | 0.0 | 25.0 | 16.7 |
| Pip | 0.0 | 8.3 | 8.3 | 33.3 | 0.0 | 0.0 | 33.3 | 16.7 |
| Stone | 0.0 | 8.3 | 8.3 | 33.3 | 0.0 | 0.0 | 25.0 | 25.0 |
| Subtropical | 0.0 | 8.3 | 8.3 | 33.3 | 0.0 | 0.0 | 50.0 | 0.0 |
| Vegetable | 0.0 | 8.3 | 8.3 | 16.7 | 0.0 | 0.0 | 25.0 | 41.7 |

Valid Responses 12

1.1.4 Commercial Interest

TABLE 17

Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No | No Response |
|------------------------------------|------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 25.0 | 8.3 |
| 11-100 ha (26-247 ac) | 16.7 | 16.7 | 8.3 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> |
| TOTAL | 41.7 | 41.7 | 16.6 |
| Valid Responses | 5 | 5 | 2 |

TABLE 18

Willingness to Lease Land by Area

| Area | Yes | No | No Response |
|------------------------------------|------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 50.0 | 8.3 |
| 11-100 ha (26-247 ac) | 0.0 | 33.3 | 8.3 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> |
| TOTAL | 0.0 | 83.3 | 16.6 |
| Valid Responses | 0 | 10 | 2 |

TABLE 19
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 8.3 | 33.3 | 16.7 |
| 11-100 ha (26-247 ac) | 8.3 | 16.7 | 16.7 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 |
| TOTAL | 16.6 | 50.0 | 33.4 |
| Valid Responses | 2 | 6 | 4 |

^a Sharefarm defined as sharing with approved growers

TABLE 20
Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous |
|------------------------------------|-----------------|------------|---------|--------------|------------|
| | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 25.0 | 25.0 | 8.3 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 16.7 | 25.0 | 0.0 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL | 41.7 | 50.0 | 8.3 | 0.0 | 0.0 |
| Valid Responses | 5 | 6 | 1 | 0 | 0 |

TABLE 21
Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes % | No % |
|------------------------------------|----------|---------|
| 10 ha or less (25 ac or less) | 58.3 | 0.0 |
| 11-100 ha (26-247 ac) | 41.7 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 0.0 |
| TOTAL | 100.0 | 0.0 |
| Valid Responses 12 | | |

1.1.5 Problems

TABLE 22

Problems of Developing Horticulture in Akaroa

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 16.7 | 58.3 | 0.0 | 25.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 |
| <u>Valid Responses</u> | | | | | | | | | |
| 2 | 7 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 2 |

1.2 TAKAMATUA TO BARRYS BAY

1.2.1 Respondent Profile

TABLE 23
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|------------------|-------------|------------------|
| % | % | % |
| 52.4 | 9.5 | 38.1 |

Valid Responses 21

TABLE 24
Area of Property

| 10 ha ^a or less (25 ac ^b or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|--|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 38.1 | 33.3 | 14.3 | 14.3 |

Valid Responses 21

^a ha - hectares

^b ac - acres

TABLE 25
Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.8 | 4.8 | 9.5 |
| 11-100 ha (26-247 ac) | 23.8 | 0.0 | 9.5 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 14.3 |
| 250 ha or more (616 ac or more) | <u>4.8</u> | <u>4.8</u> | <u>4.8</u> |
| TOTAL | 52.4 | 9.6 | 38.1 |
| Valid Responses | 11 | 2 | 8 |

1.2.2. Respondent Characteristic

TABLE 26

Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less (25 ac or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|-----------------|----------------------------------|--------------------------|----------------------------|------------------------------------|
| | % | % | % | % |
| No sheep | 19.0 | 4.8 | 9.5 | 0.0 |
| 1-19 | 9.5 | 0.0 | 0.0 | 0.0 |
| 20-100 | 4.8 | 9.5 | 0.0 | 0.0 |
| 101 or more | 4.8 | 19.0 | 4.8 | 14.3 |
| TOTAL | 38.1 | 33.3 | 14.3 | 14.3 |
| Valid Responses | 8 | 7 | 3 | 3 |
| <hr/> | | | | |
| (b) Cattle | | | | |
| | % | % | % | % |
| No cattle | 38.1 | 9.5 | 4.8 | 0.0 |
| 1-19 | 0.0 | 9.5 | 0.0 | 0.0 |
| 20-100 | 0.0 | 14.3 | 4.8 | 0.0 |
| 101 or more | 0.0 | 0.0 | 4.8 | 14.3 |
| TOTAL | 38.1 | 33.3 | 14.4 | 14.3 |
| Valid Responses | 8 | 7 | 3 | 3 |

TABLE 27
Good Draining Soil by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|-------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.8 | 0.0 | 14.3 |
| 11-100 ha (26-247 ac) | 33.3 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 9.5 | 0.0 | 4.8 |
| 250 ha or more (616 ac or more) | 14.3 | 0.0 | 0.0 |
| | <u>80.9</u> | <u>0.0</u> | <u>19.1</u> |
| Valid Responses | 17 | 0 | 4 |

TABLE 28
Potential Water Source for Irrigation by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|-------------|-------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.8 | 0.0 | 14.3 |
| 11-100 ha (26-247 ac) | 23.8 | 4.8 | 4.8 |
| 101-249 ha (248-615 ac) | 4.8 | 4.8 | 4.8 |
| 250 ha or more (616 ac or more) | 9.5 | 4.8 | 0.0 |
| TOTAL | <u>61.9</u> | <u>14.4</u> | <u>23.9</u> |
| Valid Responses | 13 | 3 | 5 |

TABLE 29
Favourable^a Areas by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.8 | 0.0 | 14.3 |
| 11-100 ha (26-247 ac) | 19.0 | 14.3 | 0.0 |
| 101-249 ha (248-615 ac) | 9.5 | 0.0 | 4.8 |
| 250 ha or more (616 ac or more) | 14.3 | 0.0 | 0.0 |
| TOTAL | 66.6 | 14.3 | 19.1 |
| Valid Responses | 14 | 3 | 4 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 30
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 19.0 | 0.0 | 19.0 |
| 11-100 ha (26-247 ac) | 28.6 | 0.0 | 4.8 |
| 101-249 ha (248-615 ac) | 9.5 | 0.0 | 4.8 |
| 250 ha or more (616 ac or more) | 9.5 | 4.8 | 0.0 |
| TOTAL | 66.6 | 4.8 | 28.6 |
| Valid Responses | 14 | 1 | 6 |

TABLE 31
Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 14.3 | 4.8 | 19.0 |
| 11-100 ha (26-247 ac) | 23.8 | 0.0 | 9.5 |
| 101-249 ha (248-615 ac) | 9.5 | 0.0 | 4.8 |
| 250 ha or more (616 ac or more) | 14.3 | 0.0 | 0.0 |
| TOTAL | 61.9 | 4.8 | 33.3 |
| Valid Responses | 13 | 1 | 7 |

TABLE 32
^a
Whether Sheltered by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 19.0 | 4.8 | 14.3 |
| 11-100 ha (26-247 ac) | 9.5 | 23.8 | 0.0 |
| 101-249 ha (248-615 ac) | 9.5 | 0.0 | 4.8 |
| 250 ha or more (616 ac or more) | 9.5 | 4.8 | 0.0 |
| TOTAL | 47.5 | 33.4 | 19.1 |
| Valid Responses | 10 | 7 | 4 |

^a indicates presence of sheltered area on property.

TABLE 33
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 9.5 | 4.8 | 4.8 | 9.5 | 19.0 | 61.9 |
| <u>Valid Responses</u> | | | | | |
| 2 | 1 | 1 | 2 | 4 | 13 |

1.2.3 Crops

TABLE 34
Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|-----------------------|------------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 33.3 | 4.8 | | | | |
| Blackcurrants | 66.7 | 14.3 | 33.3 | 4.8 | | |
| Blueberries | 4.8 | 4.8 | | | | |
| Boysenberries | 14.3 | 9.5 | | | | |
| Cape Gooseberries | 33.3 | 19.0 | 14.3 | 9.5 | | |
| Gooseberries | 57.1 | 28.6 | 14.3 | | | 4.8 |
| Grapes | 61.9 | 47.6 | | | | |
| Loganberries | 9.5 | 4.8 | | | | |
| Mulberries | 14.3 | 14.3 | | | | |
| Raspberries | 57.1 | 4.8 | 9.5 | 9.5 | 4.8 | 23.8 |
| Redcurrants | 42.9 | 23.8 | | 4.8 | | |
| Strawberries | 76.2 | | 4.8 | 9.5 | 4.8 | 42.9 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 47.6 | 38.1 | | | | |
| Lemons | 76.2 | 61.9 | | | | |
| Mandarines | 33.3 | 23.8 | | | | |
| Oranges | 28.6 | 23.8 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 14.3 | 14.3 | | | | |
| Chestnuts | 28.6 | 23.8 | | | | |
| Hazelnuts | 4.8 | 4.8 | | | | |
| Walnuts | 76.2 | 28.6 | 19.0 | 4.8 | | |
| (d) Pip Crops | | | | | | |
| Apples | 90.5 | 42.9 | 19.0 | 9.5 | | 9.5 |
| Quince | 33.3 | 28.6 | | | | |
| Rockmellon | 0.0 | | | | | |
| Tomatoes | 85.7 | 4.8 | 9.5 | 4.8 | 9.5 | 42.9 |
| Watermellon | 4.8 | 4.8 | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 0.0 | | | | | |
| Feijoas | 19.0 | 19.0 | | | | |
| Figs | 19.0 | 14.3 | | | | |
| Kiwifruit | 28.6 | 28.6 | | | | |
| Loquat | 0.0 | | | | | |
| Olives | 0.0 | | | | | |
| Passionfruit | 19.0 | 19.0 | | | | |
| Tamarillos | 19.0 | 14.3 | | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 57.1 | 47.6 | | | | |
| Cherries | 23.8 | 19.0 | | | | |
| Peaches | 71.4 | 52.4 | 9.5 | | | |
| Plums | 61.9 | 42.9 | 9.5 | | | |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 28.6 | | 4.8 | | 4.8 | 19.0 |
| Egg Plant | 4.8 | | | | | 4.8 |
| Globe Artichokes | 4.8 | 4.8 | | | | |
| Mushrooms | 19.0 | | | | | |
| Peppers | 33.3 | 14.3 | 9.5 | | | |
| Yams | 42.9 | | 9.5 | 4.8 | 4.8 | 9.5 |
| Zucchini | 0.0 | | | | | |
| Valid Responses 21 | | | | | | |

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent grown.

TABLE 35

Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|------------------|-------|--------|------|------|-------|-------------|-----------|
| | % | % | % | % | % | % | % |
| 10 years or less | 47.6 | 42.9 | 47.6 | 52.4 | 52.4 | 28.6 | 47.6 |
| 11-20 years | 9.5 | 0.0 | 9.5 | 9.5 | 9.5 | 0.0 | 4.8 |
| 21 years or more | 33.3 | 33.3 | 28.6 | 33.3 | 33.3 | 23.8 | 28.6 |
| TOTAL | 90.4 | 76.2 | 85.7 | 95.2 | 95.2 | 52.4 | 81.0 |
| Valid Responses | 19 | 16 | 18 | 20 | 20 | 11 | 17 |
| Total Responses | 21 | | | | | | |

TABLE 36
Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 28.6 | 4.8 | 14.3 | 42.9 | 9.5 |
| Citrus | 23.8 | 4.8 | 9.5 | 38.1 | 23.8 |
| Nut | 23.8 | 9.5 | 9.5 | 42.9 | 14.3 |
| Pip | 28.6 | 9.5 | 14.3 | 42.9 | 4.8 |
| Stone | 28.6 | 9.5 | 14.3 | 42.9 | 4.8 |
| Subtropical | 14.3 | 9.5 | 4.8 | 23.8 | 47.6 |
| Vegetable | 28.6 | 4.8 | 14.3 | 19.0 | 33.3* |

Valid Responses 21

* Includes 14.3 per cent with no response.

TABLE 37
Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 4.8 | 0.0 | 33.3 | 0.0 | 52.4 | 9.5 |
| Citrus | 4.8 | 0.0 | 28.6 | 0.0 | 42.9 | 23.8 |
| Nut | 4.8 | 0.0 | 28.6 | 0.0 | 52.4 | 14.3 |
| Pip | 4.8 | 0.0 | 38.1 | 0.0 | 52.4 | 4.8 |
| Stone | 4.8 | 0.0 | 38.1 | 0.0 | 52.4 | 4.8 |
| Subtropical | 0.0 | 0.0 | 14.3 | 0.0 | 38.1 | 47.6 |
| Vegetable | 4.8 | 0.0 | 28.6 | 0.0 | 47.6 | 19.0 |

Valid Responses 21

TABLE 38

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 metres | 16-30 m | 31-121 m | 122-300 m | 301 metres | No | Not |
|--------------------|----------|-----------------|-------------|--------------|--------------|--------------------|----------|------------|
| | | (50 ft or less) | (51-100 ft) | (101-399 ft) | (400-999 ft) | (1 000 ft or more) | Response | Applicable |
| | % | % | % | % | % | % | % | % |
| Berry | 4.8 | 0.0 | 4.8 | 28.6 | 9.5 | 0.0 | 42.9 | 9.5 |
| Citrus | 4.8 | 0.0 | 4.8 | 19.0 | 9.5 | 0.0 | 38.1 | 23.8 |
| Nuts | 4.8 | 4.8 | 4.8 | 28.6 | 9.5 | 0.0 | 33.3 | 14.3 |
| Pip | 4.8 | 4.8 | 4.8 | 28.6 | 9.5 | 0.0 | 42.9 | 4.8 |
| Stone | 4.8 | 4.8 | 4.8 | 28.6 | 9.5 | 0.0 | 42.9 | 4.8 |
| Subtropical | 0.0 | 4.8 | 0.0 | 9.5 | 9.5 | 0.0 | 28.6 | 47.6 |
| Vegetable | 4.8 | 0.0 | 4.8 | 23.8 | 9.5 | 0.0 | 38.1 | 19.0 |
| Valid Responses 21 | | | | | | | | |

1.2.4 Commercial Interest

TABLE 39
Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 14.3 | 9.5 | 14.3 |
| 11-100 ha (26-247 ac) | 9.5 | 14.3 | 9.5 |
| 101-249 ha (248-615 ac) | 0.0 | 9.5 | 4.8 |
| 250 ha or more (616 ac or more) | 4.8 | 9.5 | 0.0 |
| TOTAL | 28.6 | 42.9 | 28.6 |
| Valid Responses | 6 | 9 | 6 |

TABLE 40
Willingness to Lease Land by Area

| Area | Yes | No | No Response |
|------------------------------------|-----|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 19.0 | 19.0 |
| 11-100 ha (26-247 ac) | 4.8 | 19.0 | 9.5 |
| 101-249 ha (248-615 ac) | 0.0 | 9.5 | 4.8 |
| 250 ha or more (616 ac or more) | 4.8 | 9.5 | 0.0 |
| TOTAL | 9.6 | 57.0 | 33.3 |
| Valid Responses | 2 | 12 | 7 |

TABLE 41
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 9.5 | 14.3 | 14.3 |
| 11-100 ha (26-247 ac) | 4.8 | 19.0 | 9.5 |
| 101-249 ha (248-615 ac) | 0.0 | 9.5 | 4.8 |
| 250 ha or more (616 ac or more) | 4.8 | 9.5 | 0.0 |
| TOTAL | 19.0 | 52.4 | 28.6 |
| Valid Responses | 4 | 11 | 6 |

^a Sharefarm defined as sharing with approved growers

TABLE 42

Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous | No Response |
|------------------------------------|-----------------|------------|---------|--------------|------------|-------------|
| | % | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 14.3 | 19.0 | 0.0 | 0.0 | 0.0 | 4.8 |
| 11-100 ha (26-247 ac) | 14.3 | 9.5 | 4.8 | 0.0 | 0.0 | 4.8 |
| 101-249 ha (248-615 ac) | 0.0 | 4.8 | 0.0 | 0.0 | 0.0 | 9.5 |
| 250 ha or more (616 ac or more) | 4.8 | 4.8 | 4.8 | 0.0 | 0.0 | 0.0 |
| TOTAL | 33.4 | 38.1 | 9.6 | 0.0 | 0.0 | 19.1 |
| Valid Responses | 7 | 8 | 2 | 0 | 0 | 4 |

TABLE 43
Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.8 | 0.0 | 14.3 |
| 11-100 ha (26-247 ac) | 23.8 | 4.8 | 4.8 |
| 101-249 ha (248-615 ac) | 4.8 | 0.0 | 9.5 |
| 250 ha or more (616 ac or more) | 14.3 | 0.0 | 0.0 |
| TOTAL | 66.7 | 4.8 | 28.6 |
| Valid Responses | 14 | 1 | 6 |

1.2.5 Problems

TABLE 44

Problems of Developing Horticulture in Takamatua to Barrys Bay

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 9.5 | 42.9 | 9.5 | 28.6 | 14.3 | 19.0 | 4.8 | 4.8 | 9.5 | 9.5 |
| <u>Valid Responses</u> | | | | | | | | | |
| 2 | 9 | 2 | 6 | 3 | 4 | 1 | 1 | 2 | 2 |

1.3 WAINUI AREA

1.3.1 Respondent Profile

TABLE 45
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|------------------|-------------|------------------|
| % | % | % |
| 53.8 | 15.4 | 30.8 |

Valid Responses 13

TABLE 46
Area of Property

| 10 ha ^a (25 ac ^b) or less | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|---|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 30.8 | 23.1 | 23.1 | 23.1 |

Valid Responses 13

^a ha - hectares

^b ac - acres

TABLE 47
Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 30.8 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 7.7 | 7.7 | 7.7 |
| 101-249 ha (248-615 ac) | 7.7 | 0.0 | 15.4 |
| 250 ha or more (616 ac or more) | 7.7 | 7.7 | 7.7 |
| TOTAL | 53.9 | 15.4 | 30.8 |
| Valid Responses | 7 | 2 | 4 |

1.3.2 Respondent Characteristic

TABLE 48
Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less (25 ac or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|-----------------|----------------------------------|--------------------------|----------------------------|------------------------------------|
| | % | % | % | % |
| No Sheep | 7.7 | 7.7 | 0.0 | 0.0 |
| 1-19 | 15.4 | 0.0 | 0.0 | 0.0 |
| 20-100 | 7.7 | 0.0 | 0.0 | 0.0 |
| 101 or more | <u>0.0</u> | <u>15.4</u> | <u>23.1</u> | <u>23.1</u> |
| TOTAL | 30.8 | 23.1 | 23.1 | 23.1 |
| Valid Responses | 4 | 3 | 3 | 3 |
| <hr/> | | | | |
| (b) Cattle | | | | |
| No cattle | 30.8 | 15.4 | 0.0 | 7.7 |
| 1-19 | 0.0 | 0.0 | 7.7 | 0.0 |
| 20-100 | 0.0 | 7.7 | 7.7 | 0.0 |
| 101 or more | <u>0.0</u> | <u>0.0</u> | <u>7.7</u> | <u>15.4</u> |
| TOTAL | 30.8 | 23.1 | 23.1 | 23.1 |
| Valid Responses | 4 | 3 | 3 | 3 |

TABLE 49

Good Draining Soil by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 30.8 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 23.1 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 7.7 | 15.4 | 0.0 |
| 250 ha or more (616 ac or more) | 15.4 | 0.0 | 7.7 |
| TOTAL | 77.0 | 15.4 | 7.7 |
| Valid Responses | 10 | 2 | 1 |

TABLE 50

Potential Water Source for Irrigation by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.4 | 15.4 | 0.0 |
| 11-100 ha (26-247 ac) | 7.7 | 15.4 | 0.0 |
| 101-249 ha (248-615 ac) | 15.4 | 7.7 | 0.0 |
| 250 ha or more (616 ac or more) | 15.4 | 7.7 | 0.0 |
| TOTAL | 53.9 | 46.2 | 0.0 |
| Valid Responses | 7 | 6 | 0 |

TABLE 51
Favourable^a Areas by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 7.7 | 7.7 | 15.4 |
| 11-100 ha (26-247 ac) | 15.4 | 7.7 | 0.0 |
| 101-249 ha (248-615 ac) | 23.1 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 7.7 | 7.7 | 7.7 |
| TOTAL | 53.9 | 23.1 | 23.1 |
| Valid Responses | 7 | 3 | 3 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 52
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.1 | 7.7 | 0.0 |
| 11-100 ha (25-247 ac) | 15.4 | 0.0 | 7.7 |
| 101-249 ha (248-615 ac) | 23.1 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 15.4 | 0.0 | 7.7 |
| TOTAL | 77.0 | 7.7 | 15.4 |
| Valid Responses | 10 | 1 | 2 |

TABLE 53

Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.1 | 7.7 | 0.0 |
| 11-100 ha (26-247 ac) | 15.4 | 0.0 | 7.7 |
| 101-249 ha (248-615 ac) | 15.4 | 7.7 | 0.0 |
| 250 ha or more (616 ac or more) | <u>7.7</u> | <u>7.7</u> | <u>7.7</u> |
| TOTAL | 61.6 | 23.1 | 15.2 |
| Valid Responses | 8 | 3 | 2 |

TABLE 54

Whether Sheltered^a by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 7.7 | 23.1 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 15.4 | 7.7 |
| 101-249 ha (248-615 ac) | 7.7 | 15.4 | 0.0 |
| 250 ha or more (616 ac or more) | <u>7.7</u> | <u>7.7</u> | <u>7.7</u> |
| TOTAL | 23.1 | 61.6 | 15.4 |
| Valid Responses | 3 | 8 | 2 |

^a indicates presence of sheltered area on property.

TABLE 55
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 0.0 | 15.4 | 7.7 | 15.4 | 7.7 | 69.2 |
| <u>Valid Responses</u> | | | | | |
| 0 | 2 | 1 | 2 | 1 | 9 |

1.3.3 Crops

TABLE 56
Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|-----------------------|---------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 15.4 | | | | | 7.7 |
| Blackcurrants | 53.8 | 30.8 | 7.7 | | | |
| Blueberries | 7.7 | 7.7 | | | | |
| Boysenberries | 23.1 | 7.7 | | | | 7.7 |
| Cape Gooseberries | 38.5 | 30.8 | 7.7 | | | |
| Gooseberries | 53.8 | 46.2 | | | | |
| Grapes | 46.2 | 38.5 | | | | |
| Loganberries | 15.4 | 7.7 | | | | |
| Mulberries | 23.1 | 23.1 | | | | |
| Raspberries | 46.2 | | 15.4 | | | 15.4 |
| Redcurrants | 38.5 | 30.8 | | | | |
| Strawberries | 69.2 | | 7.7 | | 15.4 | 38.5 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 76.9 | 61.5 | 7.7 | | | |
| Lemons | 84.6 | 61.5 | 7.7 | | | |
| Mandarines | 38.5 | 30.8 | | | | |
| Oranges | 38.5 | 30.8 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 30.8 | 23.1 | | | | |
| Chestnuts | 15.4 | 7.7 | | | | |
| Hazelnuts | 15.4 | 7.7 | | | | |
| Walnuts | 76.9 | 23.1 | 30.8 | 7.7 | 7.7 | 7.7 |
| (d) Pip Crops | | | | | | |
| Apples | 76.9 | 7.7 | 38.5 | 15.4 | 7.7 | |
| Quince | 23.1 | 23.1 | | | | |
| Rockmellons | 7.7 | | | | | |
| Tomatoes | 76.9 | | 7.7 | 7.7 | 7.7 | 46.2 |
| Watermellons | 0.0 | | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 7.7 | 7.7 | | | | |
| Feijoas | 38.5 | 23.1 | | 7.7 | | |
| Figs | 46.2 | 38.5 | | | | |
| Kiwifruit | 38.5 | 15.4 | 7.7 | | | 7.7 |
| Loquat | 7.7 | 7.7 | | | | |
| Olives | 7.7 | 7.7 | | | | |
| Passionfruit | 61.5 | 53.8 | | | | |
| Tamarillos | 53.8 | 30.8 | 7.7 | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 61.5 | 30.8 | 7.7 | | | |
| Cherries | 61.5 | 38.5 | 7.7 | | | |
| Peaches | 61.5 | 38.5 | 15.4 | | | |
| Plums | 61.5 | 38.5 | 7.7 | | | |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 38.5 | 7.7 | | 7.7 | | 15.4 |
| Egg Plant | 23.1 | 7.7 | | | | |
| Globe Artichoke | 15.4 | 7.7 | | | | |
| Mushrooms | 7.7 | | | | | |
| Peppers | 15.4 | 7.7 | | 7.7 | | |
| Yams | 30.8 | | 15.4 | 7.7 | | |
| Zucchini | 38.5 | 23.1 | 15.4 | | | |
| Valid Responses 13 | | | | | | |

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent shown.

TABLE 57

Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | % | % | % | % | % | % | % |
| 10 years or less | 53.8 | 53.8 | 38.5 | 46.2 | 53.8 | 53.8 | 46.2 |
| 11-20 years | 7.7 | 15.4 | 7.7 | 7.7 | 15.4 | 7.7 | 7.7 |
| 21 years or more | <u>23.1</u> | <u>23.1</u> | <u>30.8</u> | <u>30.8</u> | <u>23.1</u> | <u>23.1</u> | <u>23.1</u> |
| TOTAL | 84.6 | 92.3 | 77.0 | 84.6 | 92.3 | 84.6 | 77.0 |
| Valid Responses | 11 | 12 | 10 | 11 | 12 | 11 | 10 |

Total Responses 13

TABLE 58

Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 7.7 | 15.4 | 7.7 | 53.8 | 15.4 |
| Citrus | 7.7 | 15.4 | 7.7 | 61.5 | 7.7 |
| Nut | 7.7 | 7.7 | 7.7 | 53.8 | 23.1 |
| Pip | 7.7 | 15.4 | 7.7 | 53.8 | 15.4 |
| Stone | 7.7 | 15.4 | 7.7 | 61.5 | 7.7 |
| Subtropical | 7.7 | 15.4 | 7.7 | 53.8 | 15.4 |
| Vegetable | 0.0 | 15.4 | 7.7 | 53.8 | 23.1 |

Valid Responses 13

TABLE 59

Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 23.1 | 0.0 | 23.1 | 0.0 | 38.5 | 15.4 |
| Citrus | 23.1 | 0.0 | 38.5 | 0.0 | 30.8 | 7.7 |
| Nut | 30.8 | 0.0 | 23.1 | 0.0 | 23.1 | 23.1 |
| Pip | 30.8 | 0.0 | 30.8 | 0.0 | 23.1 | 15.4 |
| Stone | 23.1 | 0.0 | 38.5 | 0.0 | 30.8 | 7.7 |
| Subtropical | 23.1 | 0.0 | 38.5 | 0.0 | 23.1 | 15.4 |
| Vegetable | 23.1 | 0.0 | 30.8 | 0.0 | 23.1 | 23.1 |

Valid Responses 13

TABLE 60

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 m or less (50 ft or less) | 16-30 m (51-100 ft) | 31-121 (101-399 ft) | 122-300 m (400-999 ft) | 301 m or more (1 000 ft or more) | No Response | Not Applicable |
|--------------------|----------|---------------------------------|------------------------|------------------------|---------------------------|-------------------------------------|----------------|-------------------|
| | % | % | % | % | % | % | % | % |
| Berry | 7.7 | 0.0 | 0.0 | 30.8 | 15.4 | 0.0 | 30.8 | 15.4 |
| Citrus | 7.7 | 0.0 | 0.0 | 53.8 | 15.4 | 0.0 | 15.4 | 7.7 |
| Nuts | 7.7 | 0.0 | 0.0 | 46.2 | 15.4 | 0.0 | 7.7 | 23.1 |
| Pip | 7.7 | 0.0 | 0.0 | 46.2 | 15.4 | 0.0 | 15.4 | 15.4 |
| Stone | 7.7 | 0.0 | 0.0 | 46.2 | 15.4 | 0.0 | 23.1 | 7.7 |
| Subtropical | 7.7 | 0.0 | 0.0 | 46.2 | 15.4 | 0.0 | 15.4 | 15.4 |
| Vegetable | 7.7 | 0.0 | 0.0 | 38.5 | 15.4 | 0.0 | 15.4 | 23.1 |
| Valid Responses 13 | | | | | | | | |

1.3.4 Commercial Interest

TABLE 61

Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.4 | 15.4 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 15.4 | 7.7 |
| 101-249 ha (248-615 ac) | 7.7 | 15.4 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 15.4 | 7.7 |
| TOTAL | 23.1 | 61.6 | 15.4 |
| Valid Responses | 3 | 8 | 2 |

TABLE 62

Willingness to Lease Land by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 7.7 | 23.1 | 0.0 |
| 11-100 ha (26-247 ac) | 7.7 | 15.4 | 0.0 |
| 101-249 ha (248-615 ac) | 15.4 | 7.7 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 15.4 | 7.7 |
| TOTAL | 30.8 | 61.6 | 7.7 |
| Valid Responses | 4 | 8 | 1 |

TABLE 63
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 15.4 | 15.4 | 0.0 |
| 11-100 ha (26-247 ac) | 7.7 | 15.4 | 0.0 |
| 101-249 ha (248-615 ac) | 7.7 | 15.4 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 15.4 | 7.7 |
| TOTAL | 30.8 | 61.6 | 7.7 |
| Valid Responses | 4 | 8 | 1 |

^a Sharefarm defined as sharing with approved growers

TABLE 64
Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous |
|------------------------------------|-----------------|------------|---------|--------------|------------|
| | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 15.4 | 7.7 | 7.7 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 15.4 | 7.7 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 23.1 | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 0.0 | 7.7 | 15.4 | 0.0 | 0.0 |
| TOTAL | 15.4 | 53.9 | 30.8 | 0.0 | 0.0 |
| Valid Responses | 2 | 7 | 4 | 0 | 0 |

TABLE 65

Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 23.1 | 0.0 | 7.7 |
| 11-100 ha (26-247 ac) | 15.4 | 7.7 | 0.0 |
| 101-249 ha (248-615 ac) | 15.4 | 0.0 | 7.7 |
| 250 ha or more (616 ac or more) | 15.4 | 0.0 | 7.7 |
| TOTAL | 69.3 | 7.7 | 23.1 |
| Valid Responses | 9 | 1 | 3 |

1.3.5 Problems

TABLE 66

Problems of Developing Horticulture in Wainui

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 23.1 | 69.2 | 38.5 | 38.5 | 38.5 | 15.4 | 15.4 | 7.7 | 23.1 | 0.0 |
| <u>Valid Responses</u> | | | | | | | | | |
| 3 | 9 | 5 | 5 | 5 | 2 | 2 | 1 | 3 | 0 |

1.4 PIGEON BAY TO OKAINS BAY

1.4.1 Respondent Profile

TABLE 67
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|------------------|-------------|------------------|
| % | % | % |
| 10.0 | 20.0 | 70.0 |

Valid Responses 10

TABLE 68
Area of Property

| 10 ha ^a or less (25 ac ^b or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|--|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 0.0 | 10.0 | 10.0 | 80.0 |

Valid Responses 10

^a ha - hectares

^b ac - acres

TABLE 69
Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 0.0 | 10.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 10.0 |
| 250 ha or more (616 ac or more) | 10.0 | 20.0 | 50.0 |
| TOTAL | 10.0 | 20.0 | 70.0 |
| Valid Responses | 1 | 2 | 7 |

1.4.2 Respondent Characteristic

TABLE 70
Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less (25 ac or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|-----------------|----------------------------------|--------------------------|----------------------------|------------------------------------|
| | % | % | % | % |
| No Sheep | 0.0 | 0.0 | 0.0 | 0.0 |
| 1-19 | 0.0 | 10.0 | 0.0 | 0.0 |
| 20-100 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101 or more | 0.0 | 0.0 | 10.0 | 80.0 |
| TOTAL | 0.0 | 10.0 | 10.0 | 80.0 |
| Valid Responses | 0 | 1 | 1 | 8 |
| <hr/> | | | | |
| (b) Cattle | | | | |
| No cattle | 0.0 | 0.0 | 0.0 | 0.0 |
| 1-19 | 0.0 | 0.0 | 0.0 | 10.0 |
| 20-100 | 0.0 | 10.0 | 0.0 | 0.0 |
| 101 or more | 0.0 | 0.0 | 10.0 | 70.0 |
| TOTAL | 0.0 | 10.0 | 10.0 | 80.0 |
| Valid Responses | 0 | 1 | 1 | 8 |

TABLE 71
Good Draining Soil by Area of Property

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 |
| 101-249 ha (248-615 ac) | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 80.0 | 0.0 |
| TOTAL | 90.0 | 10.0 |
| Valid Responses | 9 | 1 |

TABLE 72
Potential Water Source for Irrigation by Area of Property

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 |
| 250 ha or more (616 ac or more) | 70.0 | 10.0 |
| TOTAL | 70.0 | 30.0 |
| Valid Responses | 7 | 3 |

TABLE 73
Favourable^a Areas by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 10.0 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 10.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 70.0 | 10.0 | 0.0 |
| TOTAL | 90.0 | 10.0 | 0.0 |
| Valid Responses | 9 | 1 | 0 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 74
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|-----|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 10.0 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 10.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 70.0 | 0.0 | 10.0 |
| TOTAL | 90.0 | 0.0 | 10.0 |
| Valid Responses | 9 | 0 | 1 |

TABLE 75
Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 | 0.0 |
| 101-249 ha (248-615 ac) | 10.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 70.0 | 0.0 | 10.0 |
| TOTAL | 80.0 | 10.0 | 10.0 |
| Valid Responses | 8 | 1 | 1 |

TABLE 76
^a
Whether Sheltered by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 50.0 | 20.0 | 10.0 |
| TOTAL | 50.0 | 40.0 | 10.0 |
| Valid Responses | 5 | 4 | 1 |

^a indicates presence of sheltered area on property.

TABLE 77
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 20.0 | 0.0 | 20.0 | 10.0 | 30.0 | 30.0 |
| <u>Valid Responses</u> | | | | | |
| 2 | 0 | 2 | 1 | 3 | 3 |

1.4.3 Crops

TABLE 78
Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|------------------------------|---------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 10.0 | 10.0 | | | | |
| Blackcurrants | 90.0 | 50.0 | 30.0 | | 10.0 | |
| Blueberries | 10.0 | | | | | 10.0 |
| Boysenberries | 30.0 | 10.0 | 10.0 | | | 10.0 |
| Cape Gooseberries | 60.0 | 60.0 | | | | |
| Gooseberries | 100.0 | 60.0 | 30.0 | | | |
| Grapes | 40.0 | 20.0 | | | | 10.0 |
| Loganberries | 0.0 | | | | | |
| Mulberries | 50.0 | 50.0 | | | | |
| Raspberries | 50.0 | | | 10.0 | | 30.0 |
| Redcurrants | 60.0 | 50.0 | 10.0 | | | |
| Strawberries | 70.0 | 10.0 | | 10.0 | | 30.0 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 70.0 | 60.0 | | | | |
| Lemons | 100.0 | 90.0 | 10.0 | | | |
| Mandarines | 30.0 | 30.0 | | | | |
| Oranges | 40.0 | 30.0 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 0.0 | | | | | |
| Chestnuts | 50.0 | 30.0 | 10.0 | 10.0 | | |
| Hazelnuts | 30.0 | 30.0 | | | | |
| Walnuts | 80.0 | 30.0 | 20.0 | 10.0 | | 10.0 |
| (d) Pip Crops | | | | | | |
| Apples | 80.0 | 20.0 | 40.0 | 10.0 | | 10.0 |
| Quince | 70.0 | 70.0 | | | | |
| Rockmellon | 20.0 | 10.0 | | | | |
| Tomatoes | 100.0 | | | | | 80.0 |
| Watermellon | 10.0 | 10.0 | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 10.0 | 10.0 | | | | |
| Feijoas | 20.0 | 20.0 | | | | |
| Figs | 40.0 | 40.0 | | | | |
| Kiwifruit | 40.0 | 40.0 | | | | |
| Loquat | 0.0 | | | | | |
| Olives | 10.0 | 10.0 | | | | |
| Passionfruit | 40.0 | 30.0 | | | | |
| Tamarillos | 50.0 | 40.0 | | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 60.0 | 50.0 | 10.0 | | | |
| Cherries | 30.0 | 30.0 | | | | |
| Peaches | 70.0 | 50.0 | 20.0 | | | |
| Plums | 90.0 | 50.0 | 10.0 | 10.0 | | 10.0 |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 60.0 | | | 10.0 | 20.0 | |
| Egg Plant | 0.0 | | | | | |
| Globe Artichokes | 20.0 | 10.0 | | | | |
| Mushrooms | 30.0 | | | | | |
| Peppers | 40.0 | 10.0 | 30.0 | | | |
| Yams | 50.0 | 20.0 | | 20.0 | | |
| Zucchiniis | 50.0 | 10.0 | 10.0 | | | 10.0 |
| Valid Responses 10 | | | | | | |

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent shown.

TABLE 79

Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|--------------------|--------------|--------------|-------------|--------------|--------------|-------------|--------------|
| | % | % | % | % | % | % | % |
| 10 years or less | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| 11-20 years | 20.0 | 20.0 | 10.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| 21 years or more | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 50.0 | 70.0 |
| TOTAL | 100.0 | 100.0 | 90.0 | 100.0 | 100.0 | 80.0 | 100.0 |
| Valid Responses | 10 | 10 | 9 | 10 | 10 | 8 | 10 |
| Total Responses 10 | | | | | | | |

TABLE 80

Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 0.0 | 10.0 | 0.0 | 90.0 | 0.0 |
| Citrus | 0.0 | 10.0 | 0.0 | 90.0 | 0.0 |
| Nut | 0.0 | 10.0 | 0.0 | 80.0 | 10.0 |
| Pip | 0.0 | 10.0 | 0.0 | 90.0 | 0.0 |
| Stone | 0.0 | 10.0 | 0.0 | 90.0 | 0.0 |
| Subtropical | 0.0 | 10.0 | 0.0 | 70.0 | 20.0 |
| Vegetable | 0.0 | 10.0 | 0.0 | 90.0 | 0.0 |

Valid Responses 10

TABLE 81

Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 10.0 | 10.0 | 30.0 | 10.0 | 40.0 | 0.0 |
| Citrus | 10.0 | 10.0 | 30.0 | 10.0 | 40.0 | 0.0 |
| Nut | 10.0 | 10.0 | 20.0 | 10.0 | 40.0 | 10.0 |
| Pip | 10.0 | 10.0 | 30.0 | 10.0 | 40.0 | 0.0 |
| Stone | 10.0 | 10.0 | 30.0 | 10.0 | 40.0 | 0.0 |
| Subtropical | 0.0 | 10.0 | 30.0 | 10.0 | 30.0 | 20.0 |
| Vegetable | 10.0 | 10.0 | 30.0 | 10.0 | 40.0 | 0.0 |

Valid Responses 10

TABLE 82

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 m or less (50 ft or less) | 16-30 m (51-100 ft) | 31-121 (101-399 ft) | 122-300 m (400-999 ft) | 301 m or more (1 000 ft or more) | No Response | Not Applicable |
|--------------------|----------|---------------------------------|------------------------|------------------------|---------------------------|-------------------------------------|----------------|-------------------|
| | % | % | % | % | % | % | % | % |
| Berry | 0.0 | 20.0 | 0.0 | 10.0 | 20.0 | 0.0 | 50.0 | 0.0 |
| Citrus | 0.0 | 20.0 | 0.0 | 10.0 | 20.0 | 0.0 | 50.0 | 0.0 |
| Nuts | 0.0 | 20.0 | 0.0 | 0.0 | 20.0 | 0.0 | 50.0 | 10.0 |
| Pip | 0.0 | 20.0 | 0.0 | 10.0 | 20.0 | 0.0 | 50.0 | 0.0 |
| Stone | 0.0 | 20.0 | 0.0 | 10.0 | 20.0 | 0.0 | 50.0 | 0.0 |
| Subtropical | 0.0 | 10.0 | 0.0 | 10.0 | 20.0 | 0.0 | 40.0 | 20.0 |
| Vegetable | 0.0 | 20.0 | 0.0 | 10.0 | 20.0 | 0.0 | 50.0 | 0.0 |
| Valid Responses 10 | | | | | | | | |

1.4.4 Commercial Interest

TABLE 83

Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 70.0 | 10.0 | 0.0 |
| TOTAL | 70.0 | 30.0 | 0.0 |
| Valid Responses | 7 | 3 | 0 |

TABLE 84

Willingness to Lease Land by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 20.0 | 50.0 | 10.0 |
| TOTAL | 20.0 | 70.0 | 10.0 |
| Valid Responses | 2 | 7 | 1 |

TABLE 85
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 30.0 | 30.0 | 20.0 |
| TOTAL | 30.0 | 50.0 | 20.0 |
| Valid Responses | 3 | 5 | 2 |

^a Sharefarm defined as sharing with approved growers

TABLE 86
Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous |
|------------------------------------|-----------------|------------|---------|--------------|------------|
| | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 |
| 101-249 ha (248-615 ac) | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 20.0 | 60.0 | 0.0 | 0.0 | 0.0 |
| TOTAL | 20.0 | 70.0 | 0.0 | 0.0 | 10.0 |
| Valid Responses | 2 | 7 | 0 | 0 | 1 |

TABLE 87

Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 10.0 |
| 101-249 ha (248-615 ac) | 10.0 | 0.0 |
| 250 ha or more (616 ac or more) | 70.0 | 10.0 |
| TOTAL | 80.0 | 20.0 |
| Valid Responses | 8 | 2 |

1.4.5 Problems

TABLE 88
Problems of Developing Horticulture in Pigeon Bay to Okains Bay

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 20.0 | 50.0 | 40.0 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 10.0 |
| <u>Valid Responses</u> | | | | | | | | | |
| 2 | 5 | 4 | 3 | 0 | 0 | 0 | 0 | 4 | 1 |

1.5 LE BONS BAY TO NORTH HEAD

1.5.1 Respondent Profile

TABLE 89
Years on Property

| 10 years or less | 11-20 years | 21 years or more |
|------------------|-------------|------------------|
| % | % | % |
| 50.0 | 25.0 | 25.0 |

Valid Responses 8

TABLE 90
Area of Property

| 10 ha ^a or less (25 ac ^b or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|--|--------------------------|----------------------------|------------------------------------|
| % | % | % | % |
| 12.5 | 37.5 | 0.0 | 50.0 |

Valid Responses 8

^a ha - hectares

^b ac - acres

TABLE 91
Years on Property by Area of Property

| Area | 10 years or less | 11-20 years | 21 years or more |
|------------------------------------|---------------------|-------------|---------------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 25.0 | 12.5 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 12.5 | 12.5 | 25.0 |
| TOTAL | 50.0 | 25.0 | 25.0 |
| Valid Responses | 4 | 2 | 2 |

1.5.2 Respondent Characteristic

TABLE 92
Number of Livestock by Area of Property

| (a) Sheep | 10 ha or less (25 ac or less) | 11-100 ha (26-247 ac) | 101-249 ha (248-615 ac) | 250 ha or more (616 ac or more) |
|-----------------|----------------------------------|--------------------------|----------------------------|------------------------------------|
| | % | % | % | % |
| No Sheep | 12.5 | 25.0 | 0.0 | 0.0 |
| 1-19 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-100 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101 or more | 0.0 | 12.5 | 0.0 | 50.0 |
| TOTAL | 12.5 | 37.5 | 0.0 | 50.0 |
| Valid Responses | 1 | 3 | 0 | 4 |
| <hr/> | | | | |
| (b) Cattle | | | | |
| | % | % | % | % |
| No cattle | 12.5 | 12.5 | 0.0 | 0.0 |
| 1-19 | 0.0 | 12.5 | 0.0 | 0.0 |
| 20-100 | 0.0 | 0.0 | 0.0 | 12.5 |
| 101 or more | 0.0 | 12.5 | 0.0 | 37.5 |
| TOTAL | 12.5 | 37.5 | 0.0 | 50.0 |
| Valid Responses | 1 | 3 | 0 | 4 |

TABLE 93
Good Draining Soil by Area of Property

| Area | Yes | No |
|------------------------------------|-------------|------------|
| | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 25.0 | 12.5 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>50.0</u> | <u>0.0</u> |
| TOTAL | 87.5 | 12.5 |
| Valid Responses | 7 | 1 |

TABLE 94
Potential Water Source for Irrigation by Area of Property

| Area | Yes | No |
|------------------------------------|-------------|-------------|
| | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 25.0 | 12.5 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>37.5</u> | <u>12.5</u> |
| | 75.0 | 25.0 |
| Valid Responses | 6 | 2 |

TABLE 95
Favourable^a Areas by Area of Property

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 12.5 | 25.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 37.5 | 12.5 |
| TOTAL | 62.5 | 37.5 |
| Valid Responses | 6 | 2 |

^a Areas which are free from frost, warm and north facing, free from damaging winds, and free from shading from surrounding slopes.

TABLE 96
Vehicle Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 25.0 | 12.5 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 37.5 | 0.0 | 12.5 |
| TOTAL | 75.0 | 12.5 | 12.5 |
| Valid Responses | 6 | 1 | 1 |

TABLE 97
Farm Machinery Access on Favourable Areas
by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|-------------|-------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 12.5 | 25.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>25.0</u> | <u>12.5</u> | <u>12.5</u> |
| TOTAL | 50.0 | 37.5 | 12.5 |
| Valid Responses | 4 | 3 | 1 |

TABLE 98
^a
Whether Sheltered by Area of Property

| Area | Yes | No | No Response |
|------------------------------------|-------------|------------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 12.5 | 25.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | <u>37.5</u> | <u>0.0</u> | <u>12.5</u> |
| TOTAL | 62.5 | 25.0 | 12.5 |
| Valid Responses | 5 | 2 | 1 |

^a indicates presence of sheltered area on property.

TABLE 99
Type of Shelter

| Hills Only | Artificial | Hedges | Trees Only | Both hills and trees | No Response |
|------------------------|------------|--------|------------|-------------------------|-------------|
| % | % | % | % | % | % |
| 37.5 | 0.0 | 0.0 | 25.0 | 12.5 | 25.0 |
| <u>Valid Responses</u> | | | | | |
| 3 | 0 | 0 | 2 | 1 | 2 |

1.5.3 Crops

TABLE 100
Horticultural Crops Grown and Amount Grown

| (a) Berry Crops | Respondents Growing | Number of plants or trees ^a | | | | |
|------------------------------|---------------------|--|------|-------|-------|------------|
| | | 1-5 | 6-10 | 11-15 | 16-20 | 21 or more |
| | % | % | % | % | % | % |
| Blackberries | 25.0 | 12.5 | | | | 12.5 |
| Blackcurrants | 75.0 | 37.5 | 25.0 | | | 12.5 |
| Blueberries | 0.0 | | | | | |
| Boysenberries | 0.0 | | | | | |
| Cape Gooseberries | 50.0 | 12.5 | 12.5 | | | 25.0 |
| Gooseberries | 62.5 | 25.0 | 12.5 | | 12.5 | 12.5 |
| Grapes | 62.5 | 62.5 | | | | |
| Loganberries | 0.0 | | | | | |
| Mulberries | 25.0 | 25.0 | | | | |
| Raspberries | 37.5 | 12.5 | | 12.5 | | |
| Redcurrants | 75.0 | 50.0 | 12.5 | 12.5 | | |
| Strawberries | 37.5 | | | | 12.5 | 12.5 |
| (b) Citrus Crops | | | | | | |
| Grapefruit | 37.5 | 37.5 | | | | |
| Lemons | 75.0 | 75.0 | | | | |
| Mandarines | 37.5 | 37.5 | | | | |
| Oranges | 25.0 | 25.0 | | | | |
| (c) Nut Crops | | | | | | |
| Almonds | 12.5 | 12.5 | | | | |
| Chestnuts | 25.0 | 25.0 | | | | |
| Hazelnuts | 25.0 | 25.0 | | | | |
| Walnuts | 75.0 | 50.0 | 12.5 | 12.5 | | |
| (d) Pip Crops | | | | | | |
| Apples | 87.5 | 50.0 | 25.0 | | | 12.5 |
| Quince | 25.0 | 25.0 | | | | |
| Rockmellons | 0.0 | | | | | |
| Tomatoes | 75.0 | 12.5 | 25.0 | 25.0 | | |
| Watermellons | 0.0 | | | | | |
| (e) Subtropical Crops | | | | | | |
| Avacados | 0.0 | | | | | |
| Feijoas | 37.5 | 37.5 | | | | |
| Figs | 25.0 | 25.0 | | | | |
| Kiwifruit | 0.0 | | | | | |
| Loquat | 12.5 | 12.5 | | | | |
| Olives | 0.0 | | | | | |
| Passionfruit | 25.0 | 25.0 | | | | |
| Tamarillos | 25.0 | 25.0 | | | | |
| (f) Stone Crops | | | | | | |
| Apricots | 50.0 | 37.5 | | | | |
| Cherries | 25.0 | 25.0 | | | | |
| Peaches | 62.5 | 50.0 | 12.5 | | | |
| Plums | 62.5 | 50.0 | 12.5 | | | |
| (g) Vegetable Crops | | | | | | |
| Asparagus | 50.0 | | | 37.5 | | |
| Egg Plant | 12.5 | 12.5 | | | | |
| Globe Artichokes | 25.0 | 25.0 | | | | |
| Mushrooms | 62.5 | | | | | |
| Peppers | 25.0 | 25.0 | | | | |
| Yams | 62.5 | | 25.0 | | | 25.0 |
| Zucchinis | 50.0 | 37.5 | | | | |
| Valid Responses 8 | | | | | | |

^a Note: A majority of respondents stated they grew the crops but did not state the number of trees or plants, therefore number of plants or trees grown does not always add up to total per cent shown.

TABLE 101
Horticultural Crop Grown by Years on Property

| | Berry | Citrus | Nut | Pip | Stone | Subtropical | Vegetable |
|-------------------|-------|--------|------|------|-------|-------------|-----------|
| | % | % | % | % | % | % | % |
| 10 years or less | 50.0 | 37.5 | 37.5 | 37.5 | 37.5 | 12.5 | 50.0 |
| 11-20 years | 25.0 | 12.5 | 25.0 | 25.0 | 25.0 | 0.0 | 25.0 |
| 21 years or more | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| TOTAL | 100.0 | 75.0 | 87.5 | 87.5 | 87.5 | 37.5 | 100.0 |
| Valid Responses | 8 | 6 | 7 | 7 | 7 | 3 | 8 |
| Total Responses 8 | | | | | | | |

TABLE 102
Horticultural Crops by Number of Sheep

| Crop | Number of Sheep | | | | Not applicable |
|-------------------|-----------------|------|--------|-------------|----------------|
| | No sheep | 1-19 | 20-100 | 101 or more | |
| | % | % | % | % | % |
| Berry | 37.5 | 0.0 | 0.0 | 62.5 | 0.0 |
| Citrus | 37.5 | 0.0 | 0.0 | 37.5 | 25.0 |
| Nut | 37.5 | 0.0 | 0.0 | 50.0 | 12.5 |
| Pip | 37.5 | 0.0 | 0.0 | 50.0 | 12.5 |
| Stone | 37.5 | 0.0 | 0.0 | 50.0 | 12.5 |
| Subtropical | 12.5 | 0.0 | 0.0 | 25.0 | 62.5 |
| Vegetable | 37.5 | 0.0 | 0.0 | 62.5 | 0.0 |
| Valid Responses 8 | | | | | |

TABLE 103
Horticultural Crop by Location on Slopes

| Crop | Flat | Valley | Gentle | Steep | No Response | Not Applicable |
|-------------------|------|--------|--------|-------|-------------|----------------|
| | % | % | % | % | % | % |
| Berry | 0.0 | 12.5 | 25.0 | 25.0 | 37.5 | 0.0 |
| Citrus | 0.0 | 12.5 | 25.0 | 12.5 | 25.0 | 25.0 |
| Nut | 0.0 | 12.5 | 25.0 | 12.5 | 37.5 | 12.5 |
| Pip | 0.0 | 12.5 | 25.0 | 12.5 | 37.5 | 12.5 |
| Stone | 0.0 | 12.5 | 25.0 | 12.5 | 37.5 | 12.5 |
| Subtropical | 0.0 | 12.5 | 25.0 | 0.0 | 0.0 | 62.5 |
| Vegetable | 0.0 | 12.5 | 25.0 | 25.0 | 37.5 | 0.0 |
| Valid Responses 8 | | | | | | |

TABLE 104

Horticultural Crop by Height Above Sealevel

| Crop | Sealevel | 15 m or less | 16-30 m | 31-121 m | 122-300 m | 301 m or more | No | Not |
|-------------|----------|-----------------|-------------|--------------|--------------|--------------------|----------|------------|
| | | (50 ft or less) | (51-100 ft) | (101-399 ft) | (400-999 ft) | (1 000 ft or more) | Response | Applicable |
| | % | % | % | % | % | % | % | % |
| Berry | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 37.5 | 25.0 | 0.0 |
| Citrus | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 12.5 | 25.0 | 25.0 |
| Nuts | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 25.0 | 25.0 | 12.5 |
| Pip | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 25.0 | 25.0 | 12.5 |
| Stone | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 25.0 | 25.0 | 12.5 |
| Subtropical | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 12.5 | 0.0 | 62.5 |
| Vegetable | 0.0 | 37.5 | 0.0 | 0.0 | 0.0 | 37.5 | 25.0 | 0.0 |

Valid Responses 8

1.1.4 Commercial Interest

TABLE 105

Interest in Growing Horticultural Crops Commercially
by Area

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 12.5 | 25.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 25.0 | 25.0 |
| TOTAL | 50.0 | 50.0 |
| Valid Responses | 4 | 4 |

TABLE 106

Willingness to Lease Land by Area

| Area | Yes | No |
|------------------------------------|------|------|
| | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 12.5 |
| 11-100 ha (26-247 ac) | 0.0 | 37.5 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 12.5 | 37.5 |
| TOTAL | 12.5 | 87.5 |
| Valid Responses | 1 | 7 |

TABLE 107
Willingness to Sharefarm^a by Area

| Area | Yes | No | No Response |
|------------------------------------|------|------|-------------|
| | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 0.0 | 25.0 | 12.5 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 37.5 | 12.5 | 0.0 |
| TOTAL | 37.5 | 50.0 | 12.5 |
| Valid Responses | 3 | 4 | 1 |

^a Sharefarm defined as sharing with approved growers

TABLE 108
Prospects for Success of Horticultural Crops by Area

| Area | Very favourable | Favourable | Neutral | Unfavourable | Disastrous |
|------------------------------------|-----------------|------------|---------|--------------|------------|
| | % | % | % | % | % |
| 10 ha or less (25 ac or less) | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 |
| 11-100 ha (26-247 ac) | 12.5 | 25.0 | 0.0 | 0.0 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 12.5 | 37.5 | 0.0 | 0.0 | 0.0 |
| TOTAL | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 |
| Valid Responses | 2 | 6 | 0 | 0 | 0 |

TABLE 109

Willingness to Support in Principle the Establishment of
Commercial Horticulture

| Area | Yes | No |
|------------------------------------|-------|-----|
| | % | % |
| 10 ha or less (25 ac or less) | 12.5 | 0.0 |
| 11-100 ha (26-247 ac) | 37.5 | 0.0 |
| 101-249 ha (248-615 ac) | 0.0 | 0.0 |
| 250 ha or more (616 ac or more) | 50.0 | 0.0 |
| TOTAL | 100.0 | 0.0 |
| Valid Responses | 8 | 0 |

1.5.5 Problems

TABLE 110

Problems of Developing Horticulture in Le Bons Bay to North Head

| Gorse | Transport Costs | Labour availability & costs | Finding markets | Water Supply | Cost of developing | Lack of Shelter | Poor roads | Other | No problems |
|------------------------|-----------------|-----------------------------|-----------------|--------------|--------------------|-----------------|------------|-------|-------------|
| % | % | % | % | % | % | % | % | % | % |
| 37.5 | 50.0 | 37.5 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 37.5 | 12.5 |
| <u>Valid Responses</u> | | | | | | | | | |
| 3 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 1 |

APPENDIX 2

THE QUESTIONNAIRE



AGRICULTURAL ECONOMICS RESEARCH UNIT
LINCOLN COLLEGE, CANTERBURY

17 December 1980

Dear Residents,

This survey is designed to obtain information as to the prospects for development of commercial horticulture on various areas of Banks Peninsula. The survey is being undertaken on behalf of the Canterbury Branch of the New Zealand Tree Crops Association and will be used by them to promote the growth prospects of the Banks Peninsula area and so provide opportunities for the improvement of farmer returns. Please try to answer the questions as fully as possible. We would like to stress that this information will be treated in the strictest of confidence and individual responses will not be revealed. However, name and address information would be most useful in establishing what are the most favourable areas.

Somebody will collect this questionnaire between 12th-16th January. If not collected during this time please mail to Agricultural Economics Research Unit, Lincoln College, Canterbury.

Please note that we are only concerned with the horticultural crops actually listed in Question 3. Please tick those you have grown successfully and include even if only one tree or several plants are grown.

Thank you for your co-operation with this research. If there is anything you would like to comment on please feel free to do so.

Yours faithfully,

R.L. Sheppard,
Research Economist.

SURVEY OF FARMERS AND PERMANENT RESIDENTS OF

AKAROA COUNTY

HORTICULTURAL POTENTIAL OF BANKS PENINSULA

QUESTIONNAIRE

Date: _____

Owner (If Different): _____

Name: _____

Address and Location: _____

Address and Location: _____

1. How long have you lived on this property? (Please tick).

(i) 5 years or less.

| |
|--|
| |
| |
| |
| |
| |

(ii) 6-10 years.

(iii) 11-20 years.

(iv) 21-40 years.

(v) 41 years or more.

2. What area is your property? (Please tick).

(i) 10 ha or less. (25 acres or less)

| |
|--|
| |
| |
| |
| |
| |
| |
| |

(ii) 11-40 ha. (26-99 acres)

(iii) 41-100 ha. (100-247 acres)

(iv) 101-249 ha. (248-615 acres)

(v) 250-499 ha. (616-1232 acres)

(vi) 500-999 ha. (1233-3045 acres)

(vii) 1000 ha or more. (3046 acres or more)

2.

3. (a) Have you ever had fruit off any of the following? (Please place tick in column 1).

(b) Please state area or number of plants/trees grown in columns 2/3.

| | <u>Column 1</u> | <u>Column 2</u> | <u>Column 3</u> |
|---|------------------|-----------------------|------------------------------------|
| | Tick if grown | Area grown (acres) | No. of plants/trees (number) |
| 1. Almonds | | | |
| 2. Asparagus | | | |
| 3. Apricots | | | |
| 4. Apples | | | |
| 5. Avacados | | | |
| 6. Blackberries | | | |
| 7. Blackcurrants | | | |
| 8. Blueberries | | | |
| 9. Boysenberries | | | |
| 10. Cape Gooseberries | | | |
| 11. Cherries | | | |
| 12. Chestnuts | | | |
| 13. Egg Plant | | | |
| 14. Feijoas | | | |
| 15. Figs. | | | |
| 16. Globe Artichokes | | | |
| 17. Gooseberries | | | |
| 18. Grapefruit | | | |
| 19. Grapes | | | |
| 20. Hazelnuts | | | |
| 21. Kiwifruit (Chinese Gooseberries) | | | |
| 22. Lemons | | | |
| 23. Loganberries | | | |
| 24. Loquat | | | |
| 25. Mandarines | | | |
| 26. Medlar | | | |
| 27. Mulberries | | | |
| 28. Mushrooms | | | |
| 29. Olives | | | |
| 30. Oranges | | | |

3.

| | <u>Column 1</u> | <u>Column 2</u> | <u>Column 3</u> |
|--------------------------------|------------------|-----------------------|------------------------------------|
| | Tick if grown | Area grown (acres) | No. of plants/trees (number) |
| 31. Passionfruit | | | |
| 32. Peppers | | | |
| 33. Peaches (nectarines) | | | |
| 34. Persimmon | | | |
| 35. Plums | | | |
| 36. Quince | | | |
| 37. Raspberries | | | |
| 38. Redcurrants | | | |
| 39. Rockmellons | | | |
| 40. Strawberries | | | |
| 41. Tamarillos (tree tomatoes) | | | |
| 42. Tomatoes | | | |
| 43. Walnuts | | | |
| 44. Watermellons | | | |
| 45. Yams | | | |
| 46. Zuchines (courgettes) | | | |

4. How many of the following livestock do you have?

(i) Sheep _____

(ii) Cattle _____

(iii) Dairy Cows _____

(iv) Pigs _____

(v) Goats _____

(vi) Others (State) _____

4.

5. What agricultural crops do you grow?

| Crop | Average Annual Area (acres) |
|------|--------------------------------|
| | |

6. Where are most of your horticultural crops grown? (Please tick as appropriate).

- (i) Flat.
- (ii) Valley.
- (iii) Gentle slopes i.e. less than 30° slope.
- (iv) Steeper grades i.e. greater than 30° slope.
- (v) Not applicable.

| |
|--|
| |
| |
| |
| |
| |
| |

7. How high above sea level is the area where your horticultural crops are grown?

5.

8. (a) Do you employ casual labour to sow, cultivate or harvest horticultural crop(s)? (Please tick).

(i) Yes ()

(ii) No ()

(b) How many do you employ? _____

sow

_____ cultivate

_____ harvest

(c) During which months? _____

sow

_____ cultivate

_____ harvest

9. Please give figures for the most recent annual yield of your horticultural crops.

| Crop | Yield per acre or tree (please state which) |
|------|--|
| | |

(i) Don't know. ()

(ii) Only for own use. ()

10. (a) What sprays or fertilizers do you use on your horticultural crops?

| Crop | Spray | Fertiliser |
|------|-------|------------|
| | | |

(b) Didn't use any. ()

6.

11. Do you have areas of good soil with good drainage?

Yes () No ()

If yes, approximate area _____ acres.

12. Is there a potential water source for irrigation?

Yes () No ()

If yes, what source? _____

13. (a) Do you have an area on your farm that is:

- Free from frosts.
- Warm and north facing.
- Free from damaging winds.
- Free from shading from surrounding slopes.

Yes () No ()

Comments: _____

(b) Is this area accessible by vehicle? (Please tick)

Yes () No () Partly ()

(c) Can you use farm machinery on this site?

Yes () No () On part of it ()

14. (a) Do you have areas well sheltered from the wind? (Please tick)

Yes () Area _____ acres

No ()

(b) What type of shelter? (Please tick)

(i) Hills () (ii) Artificial () (iii) Hedges ()

(iv) Trees () State species: _____

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