FARMER PERCEPTION: WHAT IS LIMITING SHEEP PRODUCTION IN THE UPPER NORTH ISLAND?

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EXECUTIVE SUMMARY

The purpose of this study was to determine what farmers perceive as limiting factors to improving sheep production on their properties based in the Upper North Island (Taupo – Kaitaia).

The researcher had recently changed jobs to become a Sheep Production Officer for Wool*Pro* based in this area, which involves liaising with the Northern North Island Sheep Council. As a result, the objectives of the project was to gain information on what were the perceived limiting factors for sheep production within the area, and to identify opportunities so that farmers could overcome these. Also, to gain an understanding of the farmers within the area providing some base knowledge for the officer.

A questionnaire was sent to 289 farmers, randomly selected from the Wool*Pro* database, following the determination of limiting factors which were identified from Monitor Farm workshops in both the North and South Island.

It was found that 75% of the respondents had been farming for 20+ years, and for 72% of them, this had been on the same farm. 64% of respondents were over 50 years of age, with only 2% under 30. Approximately 75% of the respondents had an average lambing percentage of less than 120%. Romney was the most popular breed (43%) with composites making up 35%.

The top 10 overall limitations to improving sheep production were:

RANK	TOP 10 OVERALL
1	Maintaining high levels of PQ at critical times of the year.
2	Achieving high lambing percentage.
3	Adequate feeding levels of ewes at strategic times of the year.
4	Achieving high lamb growth rates – post weaning.
5	Managing feed supply to meet stock needs.
6	Understanding fungal toxins.
7	Feeding stock well.
8	Dollar returns for produce.
9	Achieving high lamb growth rates – pre weaning
10	Achieving high soil fertility

There were small variations in the ranking of production statements between areas, ages and production (lambing %). The reasons for these variations could have been due to the size of the property and competition with other enterprises in one area compared to another, the stage they were at with regard to goals and priorities in both personally and within their business.

The following conclusions were drawn:

1. that those factors which the farmer have identified as being most important have been identified as such due to the respondents lack of knowledge about them, their causes or control i.e. viral pneumonia, facial eczema and bearings; or
2. that they are actually unaware of how the factor can affect their sheep production i.e. genetics or loss of lambs between scanning and lambing; or
3. they did not fully understand the question i.e. undertaking risk management or undefined breeding goals; or
4. that they have eliminated the factor from their production system already, therefore no longer a limiting factor.

This questionnaire was based on a random sample of farmers from the Upper North Island area. The thoughts expressed by the farmers that responded does not reflect the views of all farmers within the area, nor do they provide a representation of farmers in the rest of New Zealand.

Therefore, the recommendations are for the Sheep Production Officer and Northern North Island Sheep Council based in that area:

1. continue to disseminate information using a variety of extension methods;
2. where there are variations based on area, age, lambing %, try to accommodate for them;
3. fungal toxins needs further research, then follow up with dissemination of information.
4. pasture management and the feeding of stock was a large area of concern, requiring a range of steps from back to basics feed budgeting to specialized feeding systems.
5. improve understanding of technology transfer techniques.

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1. INTRODUCTION

1.1 INTRODUCTION

The purpose of this study is to determine what farmers perceive as limiting factors to improving sheep production on their properties. This project focuses on the area Taupo to Kaitaia, where sheep numbers are not as strong as many other areas of New Zealand. It faces significant animal health issues such as Facial eczema and viral pneumonia, farming with sub-tropical grasses such as Kikuyu, and competition from other farming enterprises primarily dairy.

Information from this report will be used by Wool*Pro*'s Sheep Production Officer in the area and will be made available to the Northern North Island Sheep Council.

1.2 WOOL*PRO*

Wool*Pro* is an industry good organisation, which is funded by levies paid by woolgrowers and from user pay initiatives. Up until recently, Wool*Pro* has primarily concentrated on wool. This focus has now been enlarged to encompass the *whole* sheep. As a result of this, information is sought on limitations to general sheep production and not just wool production, although it is still a significant part of core business.

There are seven Sheep Production Officers throughout the country, three in the North Island and four in the South Island. A large part of their role is providing extension services to the sheep industry. Technology transfer, and research and development are a core focus, providing avenues to assist farmers to continually increase production and productivity.

1.3 SHEEP COUNCIL

The Sheep Council was set up in 1990 by the Meat and Wool Boards and brings farmers and researchers together, promoting research in the sheep industry and to assist in the transfer of information and technology to farmers. Their objectives are:

- To facilitate farmer input into the establishment of regional and national sheep research priorities
- To promote and facilitate greater efficiency in technology uptake
- To encourage and facilitate on-farm research and development
- To reinforce links with industry and the market place when considering research priorities.

There are four Councils throughout New Zealand, with the Northern North Island Council covering Taupo to Kaitaia, which this study focuses on.

1.4 OBJECTIVES

There are two main objectives for this study. They are:

- To gain an understanding of the farmers in the area between Taupo and Kaitaia; and
- To identify what factors are limiting the improvement of sheep production, therefore provide opportunities where these can be overcome.

The purpose of this study was not to determine **all** the factors that could affect sheep production, hence there is no literature review or scientific investigation, but to determine what farmers perceived to be the most limiting factors.

1.5 PROJECT OUTLINE

The remainder of this report is divided into three chapters, as outlined below:

Chapter Two: Outlines the methodology used in the study, including a brief outline of the type of data collected.

Chapter Three: The results from the questionnaire are presented and discussed.

Chapter Four: Conclusions are drawn from the questionnaire, and recommendations are made.

1.6 ACKNOWLEDGMENT

Thank you to Ian Tarbotton, AgResearch Ruakura, who assisted me in the project objectives and the preparation of the questionnaire. To those that help test the questionnaire, thank you. To all the farmers who took time out of their busy schedule to respond to the survey - without your contribution there would be no results. And to the remainder who were my proof readers and support crew, thanks.

2. METHODOLOGY

2.1 INTRODUCTION

In this chapter the procedures used to collect the data is outlined, followed by the selection of survey questions. The final section covers the methods used to analyse the information.

2.2 METHOD TO COLLECT INFORMATION

The aim was to gain a basic understanding of sheep farmers in the Taupo – Kaitaia area and what their perceived limitations to improving sheep production were. It was desirable to cover a wide range of farmers from throughout the area. A survey would enable this to be achieved.

Participants were randomly selected from the Wool*Pro* database based on postcode. Originally 300 from the area south of Auckland and 50 from north of Auckland were selected. A total of 300 questionnaires were sent out (250 south of Auckland plus 50 north of Auckland). As questionnaires were returned unanswered, either due to 'not known at this address' or to no longer farming sheep, additional questionnaires were sent out using the remaining 50 from the area south of Auckland, to maintain total participants as close as possible to 300.

2.3 QUESTIONNAIRE

The aim of the questionnaire was to gather information based on the farming enterprise, the farmer and their perceived limitations to improving sheep production on their farm. As the aim of this study was not to undertake a literature review or scientific analysis, a pilot study with participants from the Monitor Farm Project (jointly funded by Meat NZ and Wool*Pro*) was undertaken to determine factors which may be limiting the improvement of sheep production.

In June, two Monitor Farm workshops were held, Taupo and Dunedin respectively. Both farmers and industry related representatives attended the workshops. Participants were asked:
"To name three production limitations to improving sheep production on your property"

Everyone was given three post-it notes to write their responses on and hand in before the end of the day. Different coloured post-it notes were used to differentiate between farmers and industry representatives. The results from this exercise were then clustered and collated (Appendix 1), and the statements produced provided the basis for the 'Production Statements' 1-48 used in the questionnaire. Participants of the survey were asked to rank each production statement, ranging from 1 (none) to 5 (high), based on how it affected sheep production on their property

Additional questions were added, Section 1 – Sheep Information and Section 3 – Background Information.

The layout of the questionnaire was to be as simple and as clear as possible, hence one A3 piece of paper, double sided was chosen. A copy of the questionnaire is found in Appendix 2

2.4 DATA ANALYSIS

Once the data was obtained, it was entered into an Excel spreadsheet. Pivot tables were then used to analyse the information. Any information which was incomplete was not entered.

3. RESULTS

3.1 INTRODUCTION

In this chapter a brief description of the results is presented. The main focus is on the 'Production Statements' followed by the identification of the demographics of the participating group. Findings are discussed.

3.2 RESPONSE RATE

There was a total of 332 surveys sent out which were selected from the Wool*Pro* database. Of these 46 (13%) were returned either due to incorrect address or no longer farming sheep. Therefore, out of a possible 289, 101 surveys were returned, giving a 35% response rate. Table 3.1 outlines in what areas respondents were from.

Table 3.1: Questionnaire Mailing and Response Rate

Area	Mailout	Proportion %	Returned	% Returned
1 Ngaruawahia	18	6	9	50%
2 Te Awamutu	29	10	9	31%
3 South Auckland	21	7	6	29%
4 Taupo	17	5	8	47%
5 Bay of Plenty	54	18	18	33%
6 Hamilton	22	7	7	32%
7 Te Kuiti	40	13	11	28%
8 Taumarunui	43	14	18	42%
9 Northland	45	15	15	33%
Total	**289**	**100%**	**101**	**35%**

3.3 DEMOGRAPHICS

A number of demographic questions were asked as part of the survey. This information was sought, to provide an understanding and some background to the respondents.

Respondents were asked for the size of their property in effective hectares (ha). The average size of the property's for each area is shown in table 3.2. The average area overall was 393 ha, with Taupo having the largest average property size of 783 ha, and South Auckland the smallest with 156 ha.

Table 3.2: Average Farm Size (effective hectares)

AREA	SIZE OF PROPERTY (effective ha)
Ngaruawahia	477
Te Awamutu	405
South Auckland	156
Taupo	783
Bay of Plenty	216
Hamilton	194
Te Kuiti	379
Taumarunui	417
Northland	496
Average Area	**393**

Respondents were asked the number of years they had been farming and the number of years they had spent on the current property. These are shown in tables 3.3 and 3.4 respectively.

75% of the respondents had been farming for 20+ years, with only 5% for less than 10 years. 53% of the respondents had been on the current property for 20+ years, with 17% being on their current property for 10 years or less. This equates to 72% of those farming for greater than 20 years had farmed the same property.

Of the respondents 91% were farm owners, 5% farm managers, with the balance being leasees, partners and trustees. This is shown in table 3.5.

Table 3.3: Number of years participants had been farming

	Years Farming				
(n=100)	<2	2-5	6-10	10-20	20+
Total Number	1	1	4	19	75

Table 3.4: Number of years participants have been on the current property.

	Years on current property				
(n=101)	<2	2-5	6-10	10-20	20+
Total Number	0	3	14	30	54

Table 3.5: Position Held

	Position Held				
(n=101)	Leasee	Manager	Owner	Partner	Trustee
Total Number	1	5	92	2	1

The breakdown of age groups is shown in table 3.6. 37% of the respondents were in the 50-59 age bracket, followed by 27% in the 60+ and 26% in the 40-49 age bracket. Only 2% of respondents were below 30. South Auckland did not have any respondents 60+ but over half (67%) were from the 50-59 age bracket. Northland did not have any respondents under 40, with over half (60%) of the respondents being 60+.

Table 3.6: Age groups

	Age				
(n=101)	20-29	30-39	40-49	50-59	60+
Ngaruawahia		11	22	56	11
Te Awamutu		11	11	44	33
South Auckland		17	17	67	
Taupo		13	25	25	38
Bay of Plenty	6		17	39	39
Hamilton		14	43	29	14
Te Kuiti	8	17	25	33	17
Taumarunui		12	41	41	6
Northland			27	13	60
Overall %	2	9	26	37	27

Respondents were asked for the breed of sheep on their property, with the results shown in table 3.7. 43% of the respondents had Romney's, with an additional 5%

that farmed Romney's in conjunction with another breed. 35% of respondents had a composite breed, with 9% for both Coopworth and Perendale respectively.

Table 3.7: Percentage of breeds within areas

	Breed				
(n=100)	Composite	Romney	Coopworth	Perendale	Rom + other
Ngaruawahia	22	78			
Te Awamutu	13	75		13	
South Auckland	33	33	17	17	
Taupo	50	50			
Bay of Plenty	33	39		22	6
Hamilton	57	29	14		
Te Kuiti	58	8	17		17
Taumarunui	39	39	6	6	11
Northland	13	47	27	13	
Total % Breed	**35**	**43**	**9**	**9**	**5**

Results for the average lambing percentage over the past three years is shown in table 3.8. The largest group represented was those with an average lambing % between 111-120% (29%), with 21% between 101-110% and 18% between 121-130%. Over half (75%) had an average lambing % less than 120%.

All areas except South Auckland and Taupo had lambing % under 90%. Only Taumarunui (n=1) and Northland (n=1) had respondents that had lambing % over 150%.

Table 3.8: Percentage of average lambing % over the last three years (1998 – 2000)

	Lambing %						
(n=101)	<90%	91-100%	101-110%	111-120%	121-130%	131-140%	>150%
Ngaruawahia	44	11	22		22		
Te Awamutu	13	38	50				
South Auckland		17	17	67			
Taupo			13	38	38	13	
Bay of Plenty	22	11	22	17	22	6	
Hamilton	14		43	29		14	
Te Kuiti	8		8	50	25	8	
Taumarunui	6	6	18	41	18	6	6
Northland	13	27	13	20	20		7
Overall %	**14**	**12**	**21**	**28**	**18**	**5**	**2**

The respondents were asked for their sheep:cattle ratio. On the whole this was incorrectly answered (32%) and only those that were answered correctly (68%) were used in the analysis shown in table 3.9. 29% of the respondents had a sheep:cattle ratio that included between 60-69% sheep, followed by 20% having between 40-49% sheep. Over half of the respondents fell in the category between 40-69% sheep (65%). Looking at individual areas:

- Ngaruawahia had 50% between 60-69% sheep, with a further 50% between 30-49% sheep.

- Te Awamutu had 86% fall in the 40-59% category, with the remainder having less than 20% sheep on their property.
- South Auckland had 67% in 30-39%, with the remainder (33%) in the 50-59% range.
- Taupo had a fairly even spread between the range of 40-79% sheep.
- Bay of Plenty had 60% in the 30-49% range
- Hamilton had all of the respondents between 30-49%, with the bulk (67%) being 40-49%.
- Te Kuiti had 80% with greater than 40% sheep.
- Taumarunui had 93% with greater than 50% sheep.
- Northland was fairly evenly spread but no sheep % greater than 59%.

Table 3.9: Percentage of sheep compared with cattle on the property.

	Sheep % (based on Sheep:Cattle ratio)						
(n=69)	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**
Ngaruawahia			13	38		50	
Te Awamutu	14			43	43		
South Auckland			67		33		
Taupo				17	17	50	17
Bay of Plenty		10	40	20		30	
Hamilton			33	67			
Te Kuiti		20		20	10	30	20
Taumarunui			7		21	50	21
Northland	13	13	38	13	25		
Total %	**3**	**6**	**17**	**20**	**16**	**29**	**9**

Respondents were asked whether or not there were other enterprises beside sheep and cattle on their property. 35% said yes. This was mainly in Bay of Plenty and Northland (25% and 22.5% respectively). The types of enterprises ranged from goats (25%), crops and deer (20% respectively), dairying (15%), forestry (10%) and the remainder dairy grazers, horses, kiwifruit and tourism.

3.4 'PRODUCTION STATEMENTS' LIMITING SHEEP PRODUCTION

Questions 1-48 in Section 2 of the questionnaire, farmers were asked to identify the level that a 'production statement' had on limiting improvement in sheep production (on their farm). The results from Section 2.1 of the survey have been calculated to give overall ranking of 'production statements', and ranking based on areas, age and lambing %.

Figure 3.1 shows the overall ranking of the 'production statements'. The top 10 and bottom 10 overall are shown in table 3.10. The range of averages for the top 10 were 3.36 – 2.99 and for the bottom 10 the range of averages were 2.41 – 2.11. The average for the total final scores was 2.67.

Figure 3.1: LIMITATIONS TO IMPROVING SHEEP PRODUCTION OVERALL RANKING

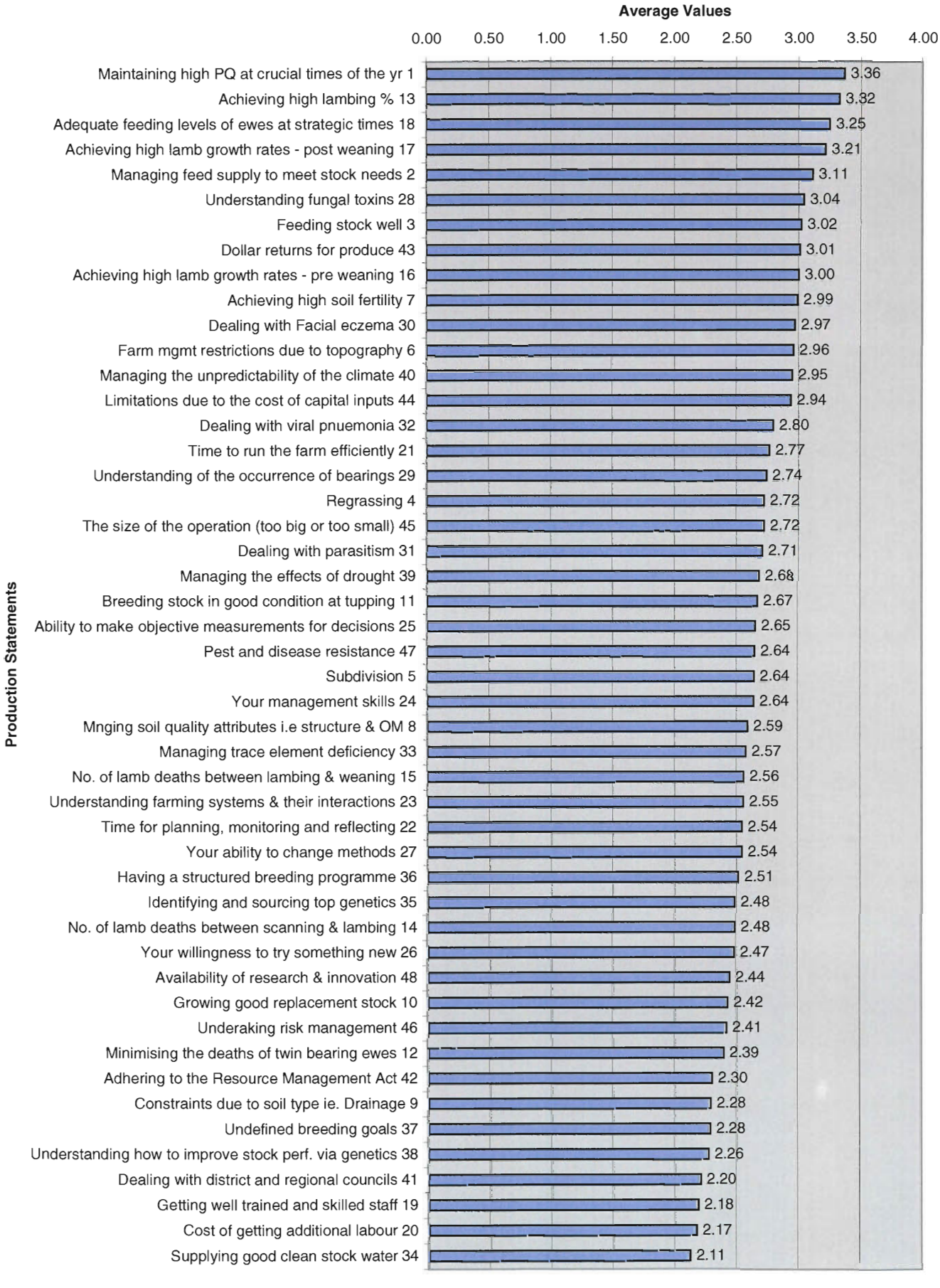


Table 3.10: Ranking of top 10 and bottom 10 of 'Production Statements' overall

Rank	Top 10 Overall	Rank	Bottom 10 Overall
1	Maintaining high levels of PQ at critical times of the year	39	Undertaking risk management
2	Achieving high lamb %	40	Minimising the deaths of twin bearing ewes
3	Adequate feeding levels of ewes at strategic times of the year	41	Adhering to the Resource Management Act
4	Achieving high lamb growth rates – post weaning	42	Constraints due to the soil type i.e. drainage
5	Managing feed supply to meet stock needs	43	Undefined breeding goals
6	Understanding fungal toxins	44	Understanding how to improve stock performance via genetics
7	Feeding stock well	45	Dealing with district and regional councils
8	Dollar returns for produce	46	Getting well trained and skilled staff
9	Achieving high lamb growth rates – pre weaning	47	Cost of getting additional labour
10	Achieving high soil fertility	48	Supplying good clean stock water

The ranking of the 'production statements' based on the nine different areas was undertaken to determine if there was difference in the priority of limitations to improving sheep production. The results of this are shown in figure 3.2 compared with the overall results.

There appears to be a variation between the nine areas. Variations unique to particular areas are identified below (the number in brackets is where the 'production statement' was ranked for that area):

- Ngaruawahia (n=9) identified nothing different, but ranked Facial eczema along with achieving high lambing % as their most limiting factors.

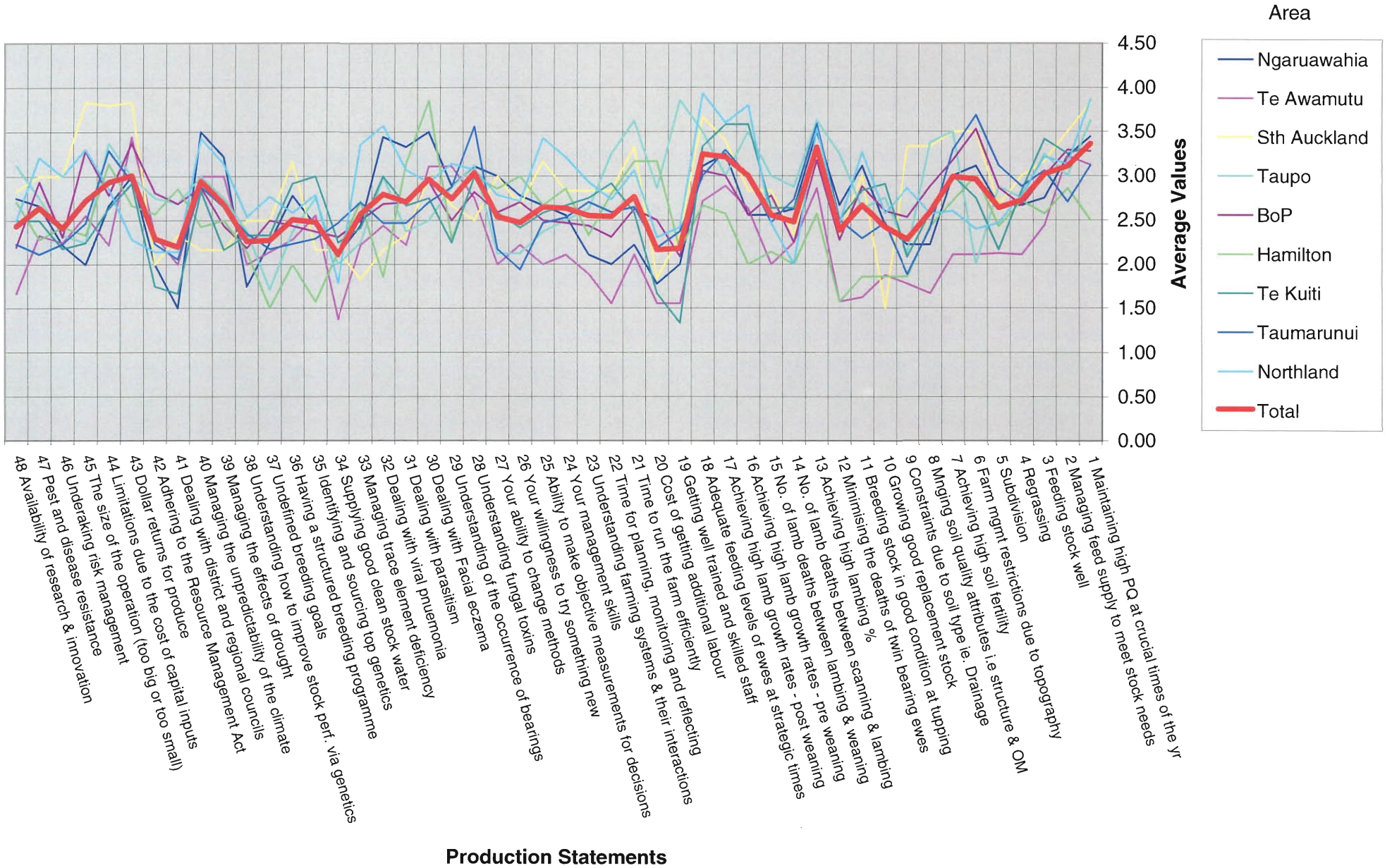
- Te Awamutu (n=9) identified 'understanding the occurrence of bearings' (4). 'Dollar return for produce' was ranked as their most limiting factor.

- South Auckland (n=6) identified no different factors. Their main limitations were 'maintaining high levels of PQ at crucial times of the year', 'dollar returns for produce' and 'the size of the operation'. 'Achieving high lambing %' was not rated in the top 10.

- Taupo (n=8) identified 'getting well trained and skilled staff' (1), which was also ranked the highest for limiting factor. 'Managing feed supply to meet stock needs' and 'achieving high lamb growth rates – post weaning' did not appear in their top 10.

- Bay of Plenty (n=18) identified no different factors. 'Farm management restrictions due to topography of the property' was ranked as the most limiting factor.

Figure 3.2: LIMITATIONS TO IMPROVING SHEEP PRODUCTION BASED ON AREA



- Hamilton (n=7) identified 'cost of getting additional labour' (2); 'your management skills' (10); and 'your willingness to try something new' (6). Their main limiting factor was 'dealing with Facial eczema'. 'Maintaining high levels of PQ at crucial times of the year', 'achieving a high lambing %' and 'achieving high lamb growth rates post weaning' did not appear in their top 10.

- Te Kuiti (n=11) identified no different factors. Achieving high lamb growth rates both pre and post weaning were their main limiting factors.

- Taumarunui (n=18) identified 'subdivision'. Their main limiting factor was 'farm management restrictions due to topography of the property'. 'Managing feed supply to meet stock needs' did not appear in their top 10.

- Northland (n=15) identified 'ability to make objective measurements to base correct decisions on' (7); and 'managing trace element deficiency' (9). 'Adequate feeding levels of ewes at strategic times of the year' was their most limiting factor. 'Managing feed supply to meet stock needs did not appear in their top 10.

The ranking of 'production statements' was then compared with the different age groups, to see if there were variations in the responses.

Variations amongst the age groups were: (numbers in brackets represent ranking for that group)

- 20-29 age group (n=2) identified 'growing good replacement stock' (1); 'number of lambs deaths between scanning and lambing' (1); and 'managing the effects of drought' (5) different to the other groups. 'Achieving high lambing %' and 'the size of the operation' was also identified as their main limiting factors, along with the two previously identified.

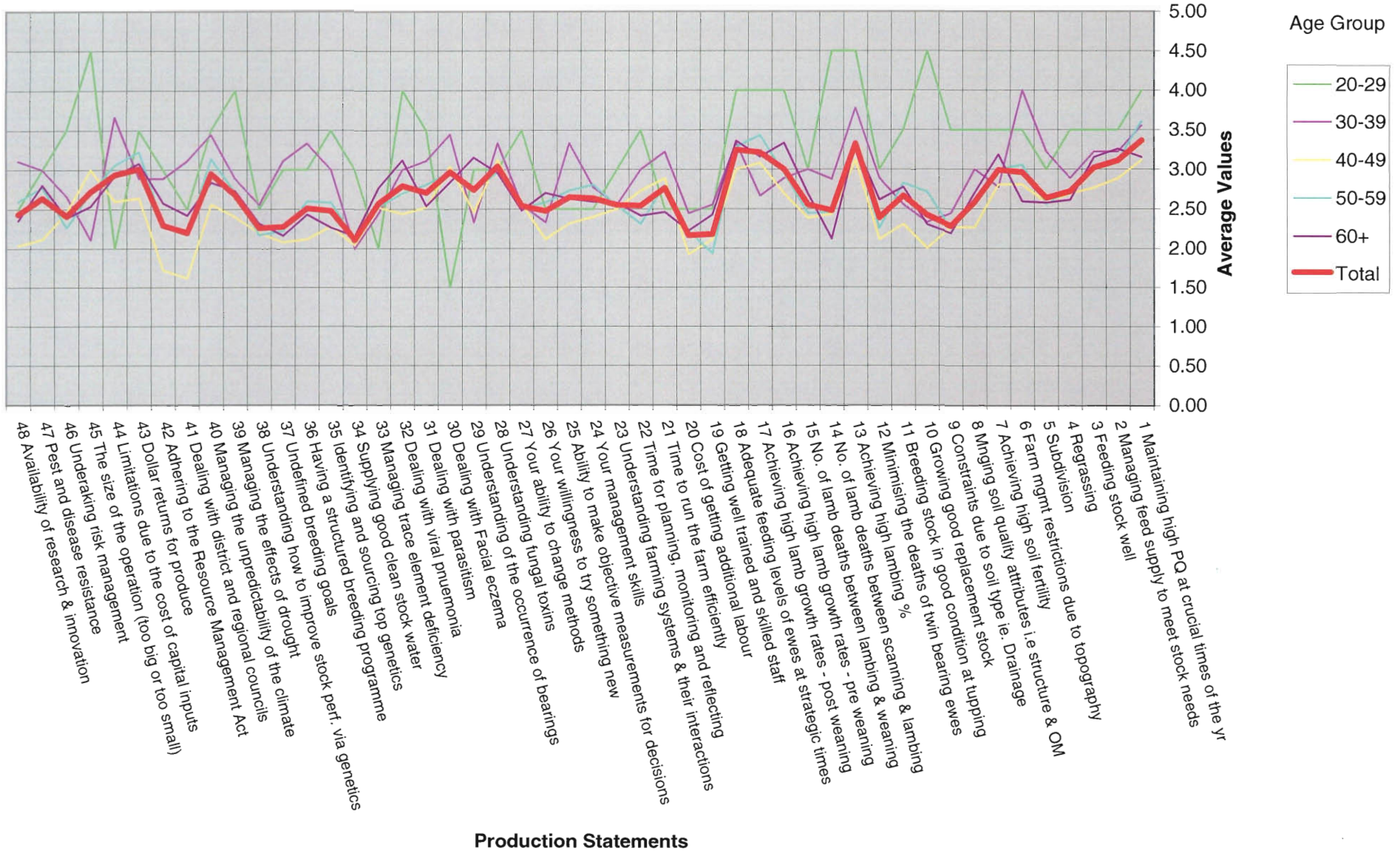
- 30-39 age group (n=9) identified 'ability to make objective measurements to base correct decisions' (7), and 'having a structured breeding programme' (7) different to the other groups. Their main limiting factor was 'farm management restrictions due to topography'. They did have 'managing feed supply to meet stock needs' and 'achieving high lamb growth rates – post weaning' in their top 10.

- 40-49 age group (n=26) identified 'time to run the farm efficiently' (8) as being different from the others. 'Maintaining high PQ at crucial times of the year', 'achieving high lambing %' and 'understanding fungal toxins' were ranked as the most limiting factors.

- 50-59 age group (n=37) identified 'dollar returns for produce' (5). 'Maintaining high PQ at crucial times of the year' was their most limiting factor.

- 60+ age group (n=27) identified 'achieving high soil fertility' (5); 'understanding of the occurrence of bearings' (7) as being different from the others. 'Adequate feeding levels of ewes at strategic times of the year' was their most limiting factor.

Figure 3.2: LIMITATIONS TO IMPROVING SHEEP PRODUCTION BASED ON AGE



The ranking of 'production statements' by lambing % also confirmed the general priority trend. Variations amongst the lambing % groups were (numbers in brackets represent ranking for that group):

- <90% identified 'time to run the farm efficiently' (6), and 'the size of the operation' (3) as being different from the other groups. 'Achieving high lambing %' was their highest ranking.

- 91-100% identified 'Subdivision' (8). 'Adequate feeding levels of ewes at strategic times' was their most limiting factor.

- 101-110% identified no different factors. 'Maintaining high PQ at crucial times of the year' was their most limiting factor.

- 111-120% identified no different factors. 'Achieving high lambing %' was their most limiting factor.

- 121-130% identified 'dealing with parasitism' (9). They did not identify 'achieving high soil fertility' or 'achieving high lambing %' in their top 10. 'Understanding fungal toxins and 'dealing with facial eczema' was their most limiting factors.

- 131-140% identified 'getting well trained and skilled staff' (2), 'cost of getting additional labour' (2) and 'dealing with district and regional councils' (8) as being different from the other groups. They did not mention 'managing feed supply to meet stock needs', 'achieving high lambing %', 'achieving high lamb growth rates – post weaning' or 'adequate feeding levels of ewes at strategic times' in their top 10. 'Dealing with facial eczema' was their most limiting factor.

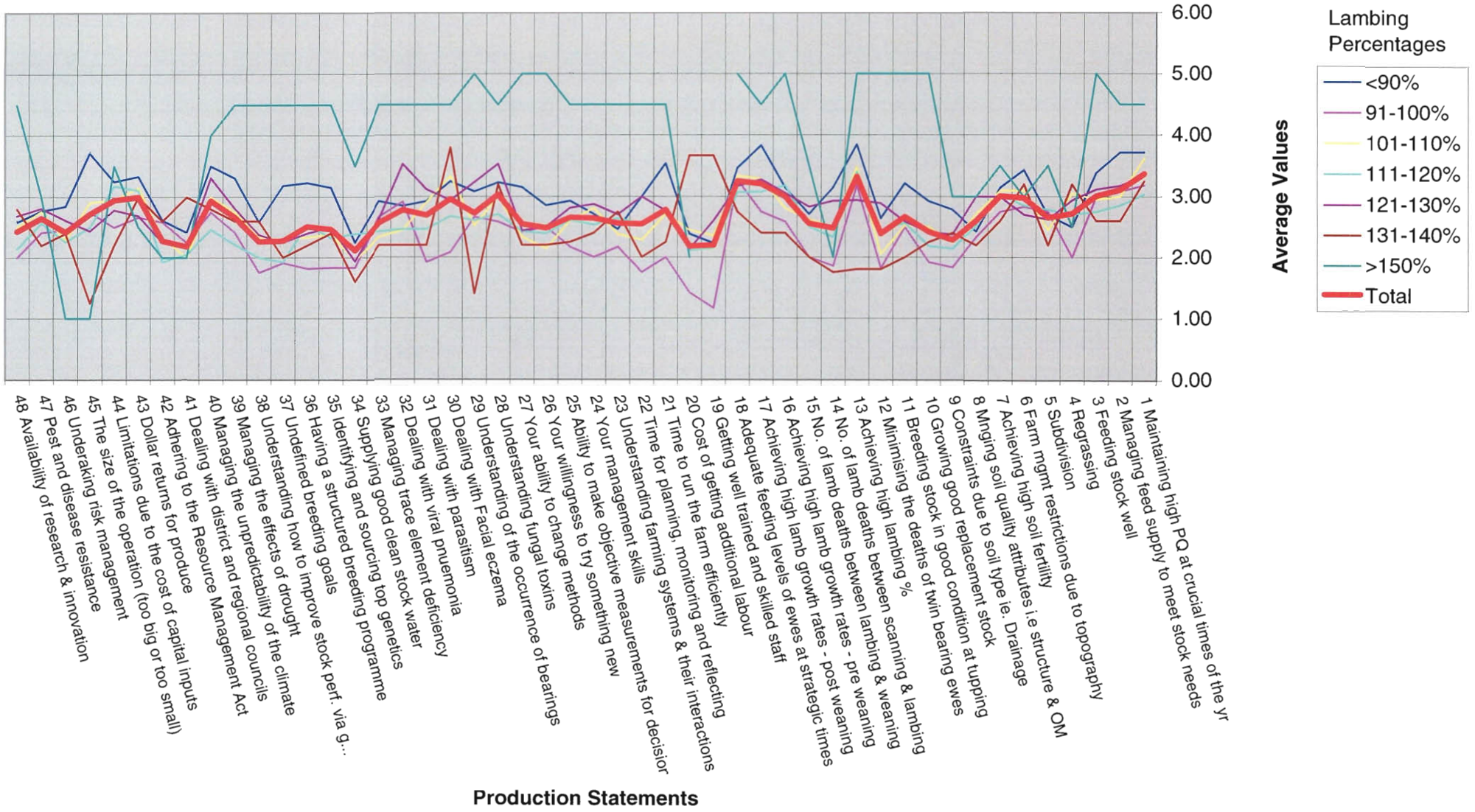
- >150% identified 'growing good replacement stock' (1), 'getting breeding stock to a good condition at tupping' (1), 'minimising the deaths of twin bearing ewes' (1), 'your willingness to try something new' (1), and 'your ability to change methods' (1). In addition to the ones listed, they also ranked 'feeding stock well', 'achieving high lambing %', 'achieving high lamb growth rates – pre weaning', 'adequate feeding levels of ewes at strategic times' and 'understanding the occurrence of bearings' as being limiting factors.

There were a number of the questions that were left blank. The four main questions left were:

i. Q. 14 'number of lamb deaths between scanning and lambing' (27.7%). Respondents mainly left this blank from Bay of Plenty (36%) and Northland (21%)
ii. Q 19 'getting well trained and skilled staff' (12.9%). Respondents mainly left this blank from Bay of Plenty (54%) and Northland (23%)
iii. Q 20 'cost of getting additional labour' (10.9%). Respondents from Bay of Plenty (35%) and Northland (18%) predominantly left this blank.
iv. Q 37 'undefined breeding goals' (10.9%). This was predominantly left blank by respondents in Bay of Plenty (36%) followed by Te Awamutu and Northland, both at 18%

These questions appeared to be left blank largely due to them not being applicable to their farming operation (especially Q 14), although Q 37 may have been left blank due to not understanding the question.

Figure 3.3: LIMITATIONS TO IMPROVING SHEEP PRODUCTION BASED ON LAMBING PERCENTAGE



3.5 WRITTEN COMMENTS

Question 2.2, was 'What assistance do you feel could be provided to help you manage and/or overcome the limitations identified in Q 2.1?' A total of 39 respondents answered this question (39%). Many of those that did answer the question provided either a comment or outlined the problem. Due to the response received, it is assumed that the question was not worded appropriately.

The responses that were received included such subjects as:

- Bearings (2) – support for continuing research
- Facial Eczema (4) and Toxins (3) – identification of FE and toxins as a problem and the desire for ways of minimizing the risk.
- Fertilisers (2) – wanting unbiased information
- Lamb growth (2) – frustration of trying to fatten lambs due to other on farm systems.
- Information (3) – comments with regard to access to information i.e. through Countrywide, similar documents to Meat Matters.
- Market Information (3) – included comments on forecasts, and predictions as well as receiving up to date reports.
- Monitor Farms (5) – all comments were positive and supportive.
- Pastures (3) – comments with regard to farming kikuyu and improving the quality of pastures.
- Research (4) – a range of comments from maintaining current research, to making it more readily available.
- Time (2) – as one farmer described "*I think there is adequate assistance available now at a cost. Lack of time prevents more intensive management due to off farm work*".
- Weather (4) – mainly in the form of better weather predictions.
- Other included comments about RMA, wool prices, practical skills, management skills, lifestylers, genetics, feeding of ewes, farm trials, and animal health.

Participants were also asked for any other comments. There was a range of comments provided from participants outlining what their systems and experiences had been, to those who were unhappy and those that were very supportive. Many of the comments were about the state of the sheep industry and where the farmers thought farming was going.

- *Sheep farming in the far North is a sunset industry. One needs to consider the soci economic conditions of the area and be mindful of how these may impact on your farming enterprise. You can't afford to loose 30 2ths to rustlers at once or 250 ewes to packs of wild dogs.*

- *I believe sheep farming to be a dying business and am therefore phasing out of it.*

- *The poor prices for wool and lambs have made sheep farming uneconomic compared with say deer or cattle.*

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

Final conclusions are drawn and recommendations for Wool*Pro*'s Sheep Production Officer and Northern North Island Sheep Council are identified. Aspects of this study are examined for the possible opportunities for WoolPro to undertake for research or similar Nationwide.

4.2 CONCLUSIONS

Results from the questionnaire showed that the majority of the respondents had been farming for 20+ years, and for 72% this had been on the same farm. There was 6% who had been farming for 10 years or less. The 50-59 age bracket was the best represented with 37% of the total respondents. There was only 2% under 30 years of age. There is a concern within the industry about the lack of young people coming through in the new wave of farmers. The majority of the respondents of this survey were farm owners as opposed to farm managers, and maybe the new wave is coming through in the form of managers, due to the capital required to purchase and invest in farming.

The majority breed is Romney (43%), with Composites (35%) not far behind. Composites were mainly popular in Hamilton and Te Kuiti areas, where Romneys were more popular in Ngaruawahia, Te Awamutu, Northland. Taupo had equal proportions of Romneys and Composites. A wide variety of composites are being used to increase sheep production, such as lifting lambing percentage.

Approximately 75% of the respondents had an average lambing % of less than 120%. There was a Facial eczema (FE) outbreak during those years (1999) and this may have had some impact in the results. The areas that managed to have lambing % over 120% were Ngaruawahia (22%), Taupo (51%), Bay of Plenty (28%), Hamilton (14%), Te Kuiti (33%), Taumarunui (30%) and Northland (27%). Proportionally, in all cases except for Taupo, these range from 14 – 33% of the respondents from each area.

Using the Sheep:Cattle Ratio, 65% have been 40 – 69% sheep. On the properties where sheep were a small percentage of the farming system, they were often being used in conjunction with another farming system as weed control mainly.

Table 4.1: Top 10 Overall

Rank	Top 10 Overall
1	Maintaining high levels of PQ at critical times of the year (1)
2	Achieving high lamb % (13)
3	Adequate feeding levels of ewes at strategic times of the year (18)
4	Achieving high lamb growth rates – post weaning (17)
5	Managing feed supply to meet stock needs (2)
6	Understanding fungal toxins (28)
7	Feeding stock well (3)
8	Dollar returns for produce (43)
9	Achieving high lamb growth rates – pre weaning (16)
10	Achieving high soil fertility (7)

Ranking the 'production statements' overall, the top 10 statements (figure 3.5) focused on feeding stock and growth rates, with the inclusion of dollar returns, fungal toxins and soil fertility. These were expected to be prominent, with feeding and

pasture quality recent research pushes along with Facial eczema. It was expected that 'dollar returns' would be ranked fairly highly due to the volatility in agriculture products although more recently farmers have been receiving good prices.

Table 4.2: Bottom 10 Overall

Rank	Bottom 10 Overall
39	Undertaking risk management (46)
40	Minimising the deaths of twin bearing ewes (12)
41	Adhering to the Resource Management Act (42)
42	Constraints due to the soil type i.e. drainage (9)
43	Undefined breeding goals (37)
44	Understanding how to improve stock performance via genetics (38)
45	Dealing with district and regional councils (41)
46	Getting well trained and skilled staff (19)
47	Cost of getting additional labour (20)
48	Supplying good clean stock water (34)

With regard to the bottom 10, it was surprising to see the two labour questions and two of the genetic questions near the bottom. There has been some concern that there is not enough people coming into the agriculture industry. From this ranking, it appears that other factors are more important in having an impact on the improvement on sheep production and that staff has an indirect as opposed to a direct link. It could also mean that the upper north is more populated and maybe access to labour is not a problem, yet.

When the ranking of the 'production statements' were compared with area, generally there were no significant variations in what was in the top 10, but there was a variation in the order of importance between the areas. The exceptions were that Taupo area ranked 'getting well trained and skilled staff' as their most important and the Hamilton area identified 'cost of getting additional labour', management skills and trying something new, whereas no other region did.

Comparing age groups, most groups had atleast one production statement different from the others. Comparing 20-39 age bracket (11%) with the rest, they identified good replacement stock, lamb deaths between scanning and lambing, ability to make objective measurements, structured breeding programme and managing effects of drought. If comparing 50-60+ age bracket (64%) with the rest they identified feeding stock well, soil fertility, bearings and dollar returns as being different. 40-49 age bracket (26%) identified time to run the farm efficiently.

Based on lambing %, there were some variations between the 'production statements'. Those with 100% or less (26%) identified time to run the farm efficiently, size of the operation and subdivision which the other groups did not. Those with lambing % between 101 – 120% (49%) did not identify anything different.

For groups 121 – 150+ (25%) had quite different limitations which included parasitism, staff, dealing with district and regional councils, good replacement stock, getting stock in good condition at tupping, minimising deaths of twin bearing ewes, trying something new and ability to change. As a result of this they did not mention soil fertility, lambing %, managing feed supply and demand, lamb growth rates post weaning, adequate feeding of ewes, and bearings. Either they had already overcome some of the barriers that the groups with lower lambing % had not yet overcome or identified.

From the results the following conclusions can be drawn:

- That those factors which the farmers have identified as being most important have been identified as such due to the respondents lack of knowledge about them, their causes or control i.e. viral pneumonia, facial eczema and bearings; or
- That they are actually unaware of how the factor can affect their sheep production i.e. genetics or loss of lambs between scanning and lambing; or
- They did not fully understand the question i.e. undertaking risk management or undefined breeding goals; or
- That they have eliminated the factor from their production system already, therefore no longer a limiting factor.

Information over a range of these subjects have over the year have been disseminated to the sheep industry either via specialised and generalized publications, consultants, monitor farms, veterinarians and short courses. It appears that despite this, information is either not getting to a large number of farmers, or if it is there has been limited uptake. This could be due to not knowing how to implement such information into their own farming system, or they don't have the time to read and understand the information well enough to use it, or they have been given wrong information or advice at some point.

A large percentage of the respondents were in the age bracket 50+ (64%), and whether this has a bearing on the form in which information is presented and the respective take up of it. Alternatively, because of where they are in their life, and their personal priorities, they may be happy with the level of their production and are not seeking to improve it. There could also be a difference between farmers in relation to their debt loading. Those with less equity and higher debt may be in a position where they have to be producing well, to be able to afford the debt, whereas those with higher equity and lower debt may not be under any pressure to improve production to service their debt.

Comparing the top 10 with current or past research, and current information available, it appears that there is information and research on most of the subjects.

Table 4.3: Top 10 compared with R&D and Information Available

Rank	Top 10 Overall	R&D or Information Available
1	Maintaining high levels of PQ at critical times of the year (1)	R&D (current and historic), AgFacts,
2	Achieving high lamb % (13)	'A Guide to Genetic Improvement' and 'A Guide to Improved Lambing Percentage – 200 by 2000' (Sheep Council); AgFacts; R&D (current and historic)
3	Adequate feeding levels of ewes at strategic times of the year (18)	In The Paddock (WoolPro); 'Feed Planning' (Sheep Council)
4	Achieving high lamb growth rates – post weaning (17)	'A Guide to Lamb Growth - 400+' (Sheep Council); R&D (current and historic); R&D Briefs (MeatNZ)
5	Managing feed supply to meet stock needs (2)	Feed Planning (Sheep Council); Stockpol; feed budgeting skills; AgFacts
6	Understanding fungal toxins (28)	Facial Ezcema (Sheep Council); R&D Briefs (MeatNZ)

7	Feeding stock well (3)	In The Paddock (WoolPro); 'Feed Planning' (Sheep Council); R&D (current and historic)
8	Dollar returns for produce (43)	Historic markets rural papers; MWES reports; SONZA reports
9	Achieving high lamb growth rates – pre weaning (16)	'A Guide to Lamb Growth - 400+' (Sheep Council); R&D (current and historic)
10	Achieving high soil fertility (7)	AgFacts, FertResearch booklet; fertiliser companies

Many of the respondents were supportive of the research currently being undertaken but reinforced the need to continually report on the outcomes. Appears there is still a demand for information and practices on animal health and pasture/feeding issues.

The Monitor Farm programme (Wool*Pro*/MeatNZ) has been running for ten years, and a number of respondents mentioned the importance of these programmes to assist in the dissemination of information. A wide range of technology and information is disseminated via this programme, and can often be area specific. But this programme does not cover **all** farmers, and maybe not all respondents have been exposed to a Monitor Farm.

There is also FITT (Farmer Initiated Technology Transfer), where in a one year programme farmers can work with experts in an on-farm situation to trial and investigate some identified problem or research an issue of interest.

Despite these programmes, there still appears to be a need to obtain more information through a variety of avenues such as having examples of what other farmers were doing in rural magazines, more regular and up to date market information. The risk is that farmers are looking for systems to implement and in many cases systems cannot be provided as each bit of information and technology needs to be adapted to the individual farming enterprise. So, although the information may be available, the skill, expertise and confidence to implement the technology may be absent.

Farmers at all levels of production, age, experience still seemed to require information, in a variety of formats and covering a wide variety of information. The outcomes from this survey do not represent **all** farmers in the Upper North Island, and it does not represent the views of farmers in the whole of New Zealand.

4.3 RECOMMENDATIONS

Recommendations are:

i. That Wool*Pro* and Sheep Council continue to disseminate information about a wide range of subjects and using a variety of extension methods.

ii. That there is a slight variation between areas identifying different needs. Where these can be identified, cater for them.

iii. Fungal toxins (ranked number 6) appears to be an area where there a number of unknowns which are impacting on sheep production. Although there is some work on FE, endophytes and zearaleone, farmers have not yet grasped the full impacts on the sheep production and how to manage it. Therefore encourage further research in this field as part of the Wool*Pro* R&D portfolio and encourage

farmers to undertake some on-farm monitoring in conjunction with experts.

iv. Pasture management – feeding and quality appears to be a concern and has an impact on a number of other 'production statements' identified. There are three basic approaches to this:
    a. Back to basics approach, reinforcing standard practices – subdivision, fertiliser and water supply.
    b. Developing skills in feed budgeting – understanding pasture growth and stock demands.
    c. Understanding of different pastures or crops – their growth patterns and quality, animal health risks, fertiliser requirements.
    d. Matching specialized animal production systems to specialized fodder systems.

v. With the number of comments about fertilisers and pasture species available, farmers are seeking some unbiased information on these.

vi. A better understanding of technology transfer skills by the Sheep Production Officers, with the knowledge shared with the Sheep Council to deliver opportunities to farmers that will help lift production and productivity on their farming enterprises.

APPENDICES

Monitor Farm Analysis
Barriers to Improved Sheep Production

	FARMERS			CONSULTANTS			
	Nth Is	Sth Is	Total	Nth Is	Sth Is	Total	TOTAL
Pasture Quality	3	8	11	5	2	7	18
Pasture Quality & quanity to improve SR		1	1			0	1
Grazing Management	3	1	4	3	1	4	8
Quanity and Quality		1	1	1		1	2
Short Growing Season		1	1			0	1
Quality at tupping		1	1			0	1
Quality control in spring		1	1			0	1
Quality weaning to autumn	1		1	1	1	2	3
Quality in summer	1		1			0	1
Tupping/ewe condition	1	1	2			0	2
Lamb Growth Rate	4	3	7	1		1	8
Lambing %		1	1			0	1
Lamb survival	4	1	5	3		3	8
Low - High Performance Sheep Nos.		1	1			0	1
Death of twin bearing ewes			0	1		1	1
Sticking with Dual Purpose sheep		1	1			0	1
Able to grow top ewe hgt replacements			0	1		1	1
Cattle Ratio	1		1			0	1
Genetics	2	9	11	3	2	5	16
Skilled staff		2	2	1		1	3
Personal Skills	1	2	3	6	9	15	18
Management of systems			0	1	2	3	3
Time Mgmt	1	1	2			0	2
Scale of Operation		1	1			0	1
Financial	3	1	4	3	1	4	8
Climate	5	11	16	1	1	2	18
Resource Mgmt Act		1	1			0	1
District and Regional Councils			0		1	1	1
Conservation			0		1	1	1
Risk Management			0		1	1	1
Pest and disease resistance			0		1	1	1
Animal Health (Toxins/Bearings etc)	12		12	5		5	17
Topography		4	4	1		1	5
Subdivision	2		2	1		1	3
Soil Type		1	1			0	1
Soil Management			0		1	1	1
Soil Fertility	4		4			0	4
Trace Elements		1	1			0	1
Supply stock water		1	1			0	1
Lack of irrigation			0		1	1	1
Research/Innovation	1		1			0	1
Drainage		1	1			0	1
	49	58	107	38	25	63	170
Participants (based on 3 per person)	16.33	19.33	35.67	12.67	8.33	21.00	56.67

WOOL*PRO*

Sally Hobson
Sheep Production Officer
Wool*Pro*
P O Box 71
Cambridge

24 August 2001

«AutoMergeField»
«Address_1»
«Address_2»
«Address_3»
«City» «PC»

Dear «First»

IMPROVING SHEEP PRODUCTION QUESTIONNAIRE

I have recently joined the team at Wool*Pro* as a Sheep Production Officer covering the Upper North Island, Taupo to Kaitaia. This year I am also attending the Kellogg Rural Leadership Programme at Lincoln. This course involves some on campus block courses and for the students to undertake a research project during the year.

I have chosen to determine what limitations (if any) there are to improving on-farm sheep production in the Upper North Island. The attached questionnaire has been designed to help me accomplish this.

You have been randomly selected from the Wool*Pro* database to partake in this exercise and I would appreciate it if you could take time out in your busy schedule to fill out the enclosed questionnaire. Please return it to me in the enclosed self-addressed envelope by 7 September 2001.

Your response to the questionnaire will be confidential. The results will be grouped to show trends and will be presented in a report and a presentation to my fellow colleagues in November as part of the Kelloggs Rural Leadership programme.

The results will also assist me in my role as Sheep Production Officer enabling me to respond to the needs of sheep farmers within my area.

Depending on the outcome of the research, it may act as a pilot survey which may be used by Wool*Pro* to be extended to other parts of the country.

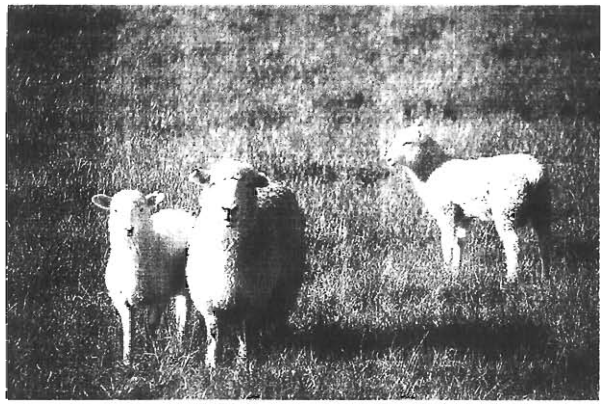
Your help and assistance by completing this questionnaire is greatly appreciated.

Yours faithfully

Sally Hobson
SHEEP PRODUCTION OFFICER

"What is limiting sheep production on your property?"

The aim of this questionnaire to determine what limitations there are (if any) to improving sheep production on farm. The focus is on what you think are the main issues for you in your farming operation. The results from this survey will be confidential to myself, and only trends and localised area information will be used in portraying the results.



Area: _____

SECTION 1: SHEEP INFORMATION

The purpose of this section is to give the interviewer some background knowledge as to what role sheep have on your farm.

Q 1.1 What is the sheep to cattle ratio on your property?

Sheep _____ : _____ Cattle

Q 1.2 Do any of the following enterprises occur on your property as well? (Tick the relevant boxes)

Deer ☐ Cropping ☐ Goats ☐ Other (specify) ☐

_____

_____

Q 1.3 What is the breed of your ewe flock? (tick the relevant box)

Drysdale (Dy) ☐ Coopworth (Cp) ☐ Romney (Rm) ☐

Perendale (Pn) ☐ Merino (M) ☐

Composite Breed ☐
(please write composite) _____

_____

EF = East Friesian
Fn = Finn
Tx = Texel

Q 1.4 What is your average lambing % at docking been over the past 3 years:

<90% ☐ 91-100% ☐ 101-110% ☐ 111-120% ☐

121-130% ☐ 131-140% ☐ >150% ☐

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SECTION 2: LIMITATIONS TO IMPROVED SHEEP PRODUCTION

Q 2.1 The statements below have been determined from a pilot exercise, where a group of farmers and consultants put forward what they considered some on-farm limitations to improving sheep production. Could you please **tick the relevant box** as to how you think each of these statements affect **you** on **your** farm. There is space at the end of this section to add other statements you feel are relevant.

Production Statements **How does this limitation affect sheep production on your farm?**	**Level of limitation on improving sheep production**				
	1 None	**2**	**3**	**4**	**5** High
Pastures					
1. Maintaining high levels of pasture quality at crucial times of the year					
2. Managing feed supply to meet stock needs					
3. Feeding stock well					
4. Regrassing					
5. Subdivision					
6. Restrictions in farm management due to the topography of the property					
Soils/Fertility					
7. Achieving high soil fertility					
8. Managing soil quality attributes such as structure and organic matter					
9. Constraints due to soil type i.e. drainage					
Animal Performance					
10. Growing good replacement stock					
11. Getting breeding stock to a good condition at tupping					
12. Minimising the deaths of twin-bearing ewes					
13. Achieving a high lambing %					
14. Number of lamb deaths between scanning and lambing					
15. Number of lamb deaths between lambing and weaning					
16. Achieving high lamb growth rates – pre-weaning					
17. Achieving high lamb growth rates – post-weaning					
18. Obtaining adequate feeding levels of ewes at strategic times of the year					
Labour and Personal Skills					
19. Getting well trained and skilled staff					
20. Cost of getting additional labour					
21. Time to run the farm efficiently					
22. Time for planning, monitoring and reflecting					
23. Your understanding of all the different farming systems and their interactions					

Production Statements **(How does this limitation affect sheep production on your farm?)**	**Level of limitation on improving sheep production** **1** None	**2**	**3**	**4**	**5** High
24. Your management skills					
25. Your ability to make objective measurements to base correct decisions					
26. Your willingness to try something new					
27. Your ability to change methods					
Animal Health					
28. Understanding of fungal toxins					
29. Understanding of the occurrence of bearings					
30. Dealing with Facial eczema					
31. Dealing with parasitism					
32. Dealing with viral pneumonia					
33. Managing trace element deficiency					
34. Supplying good clean stock water					
Genetics					
35. Identifying and sourcing top genetics					
36. Having a structured breeding programme					
37. Undefined breeding goals					
38. Understanding of how you can improve stock performance via genetics					
Miscellaneous					
39. Managing the effects of droughts					
40. Managing the unpredictability of the climate					
41. Dealing with district and regional councils					
42. Adhering to the Resource Management Act					
43. Dollar returns for produce					
44. Limitations due to cost of capital inputs					
45. The size of the operation (too small or too big)					
46. Undertaking risk management					
47. Pest and disease resistance					
48. Availability of research and innovation					
Other (please specify)					
49.					
50.					
51.					
52.					

Q2.2. What assistance do you feel could be provided to help you manage and/or overcome the limitations identified in Q 2.1? (List below)

1. _____

_____

2. _____

_____

3. _____

_____

SECTION 3: BACKGROUND INFORMATION

Q 3.1 How many years have you been farming? (Write number of years below)

<2 ☐ 2-5 ☐ 6-10 ☐ 10-20 ☐ 20+ ☐

Q 3.2 How many years have you been on this farm? (Write number of years below)

<2 ☐ 2-5 ☐ 6-10 ☐ 10-20 ☐ 20+ ☐

Q 3.3 What is the size of your property? (Write number of effective hectares below)

_____ EFFECTIVE HECTARES

Q 3.4 What is your age? (Tick the relevant box)

20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60+ ☐

Q 3.5 What is your position on the property? (Circle number)

☐ Farm Owner ☐ Farm Manager ☐ Other (please specify) _____

Do you have any other comments?

_____

_____

_____

If you wish to have a follow up call from myself with regard to any of the services that WoolPro can offer, please write your name and address below and the subject which is of interest to you.

Name: _____

Address: _____

_____

Ph. No. _____

Subject: _____

Thank you for your contribution – it is greatly appreciated

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