

FITT Final Report (09FT220) (Lucerne 4 lambs in Central Otago)

Years of trial: 2009 - 10

Group that proposed the trial: Central Otago Monitor farm programme and Luc4Lambs SFF project

Region: Central Otago

Contact person(s): Geoff Shaw (farmer), Robert Phiskie (Farm Consultant)

(1) Introduction – background to the project

The Lucerne for Lambs project had its genesis at the Blenheim NZGA Conference (2008) where one of the field days was a visit to Doug Avery's farm, Bonavaree. On this property they have radically changed the management of the lucerne and this had become a major driver of improved profitability despite sustained drought.

The question this raised was whether this dramatic change could be transferred to Central Otago properties where dry seasons were the normal and water available for irrigation is often restricted.

It is timely to review traditional lucerne uses in light of recent research and see if they can be adapted to provide a more flexible and sustainable farming system. Sheep farming in the dry Central Otago climate is based on conservative practices around the reliable spring growth and the scale of properties. Lucerne is widely grown in Central with the majority made into hay and silage. Dryland farming is the dominant land use and water restrictions mean much of the land can never be irrigated while increased dairy farming has also reduced water available to sheep farms.

Experience within Central Otago often misses the opportunity of using lucerne for grazing in the early spring when the potential to improve animal output is at its' greatest. Farmers prefer to use lucerne to secure their winter feed supply through feed conservation.

It was identified at the beginning that to enable significant change to the current farming practices would require the input of significant technical expertise from Derrick Moot (LU) and AgResearch farm systems team as well as the support of the agribusiness representatives in the region.

This FITT application formed part of the application to Sustainable Farming Fund.

(2) Key aims – what was the project trying to achieve?

To demonstrate the effectiveness of a new lucerne model for Central Otago

The general question was – how do we get better use of lucerne in this environment? and how big an impact if you change the whole farm system around?

FITT funding would provide a first step by enabling the demonstration of differences between the current practice of grazing ewes and lambs on perennial pasture and the alternative practice of using lucerne as a grazing option from tailing to weaning. The on farm demonstration would identify both the benefits and potential issues with such an approach.

Three farms will each monitor 200 ewes and their lambs on either lucerne or perennial pasture during the spring and early summer of 2009. These will be weighed and ewes will be condition scored at tailing, and then at monthly intervals until weaning. Feed quantity and quality will be monitored at fortnightly intervals. Animal health will be monitored on a regular basis to ensure that issues are identified early and problems solved as required.

Results will be incorporated into whole farm analysis to investigate the implications of changing the system to earlier grazing of lucerne. Implications that will need considering will include impacts on winter feed supply, opportunities to sell lambs finished earlier, impacts on summer and autumn feed supply and overall stocking rate.

The following themes were chosen by each of the farmers as fitting their system and objectives;

Comparison of lamb growth rates

McKnights

Getting rid of your singles quickly

G Shaw

Lamb growth rates on lucerne

J Duncan

Lucerne grass mixes compared to lucerne

Tom Moore

(3) Key findings & recommendations for farmers

All three farms monitored a comparison of ewes with lambs at foot grazing either pure lucerne or lucerne grass mixtures with grass pastures.

In all three on the lucerne based grazing system the

- **ewe stocking rate was higher**
- **total lamb production was higher**
- **greater number of lambs sold prime vs store**
- **greater number of lambs sold at weaning**

Most significant was the **50g/day liveweight gain advantage** for the lambs grazing lucerne compared to those on grass plus the **2.5x the stocking rate** on the lucerne that was recorded on the McKnight property.

WHOLE FARM ANALYSIS

Part of the project was to consider how the changes in the lucerne management from cutting as hay/silage for winter feed to a ewe and lamb grazing system affected the whole farm system.

Peter Young (Farm Advisory Services) has been involved with the McKnight property prior to this project and was able to analyse the changes that have been made to their farm system (summary attached).

Why consider the whole farm system?

The following points need to be considered when integrating a grazing lucerne regimen into the farm:

1. Analysis of the whole farm system and limitations to productivity need to be identified and may include some or all of the following:
 - reliance on ryegrass dominant pastures
 - sheep breed and stock policy
 - lucerne paddocks used to supply winter supplement first
 - summer feed supply and quality
 - unreliable winter crops (poor strikes and low yields) and poor establishment of permanent pasture
 - limited area able to be irrigated
 - unreliable irrigation supply
 - decision on where to plant lucerne, winter crop or pasture (irrigated soils, dryland, deep or light soils)
2. Integrate planned changes to the farm system
3. Consider the balance of land use
 - irrigated ryegrass pasture, dryland pasture, lucerne, summer crop and winter crop

- replace dryland ryegrass pastures with lucerne for improved productivity and feed quality in summer
 - reduce reliance on summer crops (reduction in renewal costs)
4. Fit stock model to a grazing lucerne system
- focus on spring and autumn feed cover targets
 - use lucerne more in the grazing system which ties in with an increased focus on feed quality and feeding levels
 - focus on growing out ewe hoggets over finishing lambs
5. Strategic water use
- Use available irrigation water strategically to establish pasture and winter crops
 - make more of the farms required supplement from irrigated pasture rather than lucerne
 - increase on farm water storage capability to enhance irrigation

(4) Conclusions – what are the ‘take home’ messages?

- There is potential to significantly increase ewe and lamb productivity and profitability on dryland areas of Central Otago using lucerne.
- Grazing ewes and lambs on lucerne will enable farmers to quit lambs earlier and at heavier weights (allows management options for both normal (dry) and drier years).
- Changes the feed supply curve. This creates more feed available for ewe and hogget liveweight gain which is reflected in better lambing percentages and lamb growth.
- Lucerne improves the use of available water, both in the soil in spring and use of limited water in the irrigation systems.
- Analysis of the whole farm system is important to identify the opportunities available.
- Farmers, seed reps and consultants need better understanding of ‘new’ or changed lucerne management. This has resulted from recent research and better understanding of the plants agronomy and its integration in to the farm system.

(5) How will the group apply the project results?

As this is part of a larger project we can take the outcomes of this first year’s demonstration and use the information to form the basis of further work.

Due to the onset of very dry conditions last summer farmers had to modify their input into the programme as they needed to destock early. Therefore we were unable to

collect all the data required to convince other farmers of the benefits. This will be the focus of the 2010/11 programme

Already the on farm demonstration has been reported back to the farmers at a Central Otago Monitor Farm field day. As a result more farmers have come forward to be part of this years programme.

The three farms involved in the project have changed and adapted their farm practice involving lucerne.

- To increase both the total lucerne area and the amount grazed by ewes and lambs
- To think strategically about the best soils to sow lucerne on to gain the benefit of deep rooting and use of available water. Many farms have traditionally used lucerne on the poorer dryland soils rather than the better soils where the productive potential would be significantly greater
- Adopt strategic use of available water to focus on lucerne and winter crop establishment

(6) Contact points for more information

Professor Derrick Moot, Lincoln University
Dr David Stevens, AgResearch, Invermay
Robert Phiskie, PGW Consulting
Peter Young, Farm Advisory Services

(8) Appendices – extra information

On farm results
Refining the Rough Ridge Farming System.