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Project funded by
from 1991 to 1995



A more efficient lamb production system for Southland



- How can I supply heavier lambs to market at an earlier date?
- How can I provide weaned lambs with a high quality diet over summer?

- What is the best pasture mix to maximise growth rates in Southland?

How to increase profit through faster, more efficient lamb growth

When this project began in 1991, the average lamb finished in Southland killed out at **13.5 kg**. **Average lamb growth rates** after weaning were approximately **120 grams/day**.

The potential for improvement was considerable.

The project, carried out by AgResearch, aimed to **demonstrate** how farmers could supply a consistent supply of lambs to market between December and May with an **average carcass weight of 15.5 kg**.



The key to reaching this target was found to be **renewing pasture with herbages such as clover and chicory**.

The Research

Lamb and hogget growth rates were measured over a period of three years on:

- 1) existing ryegrass.
- 2) chicory, clover and upland brome improved pasture.
- 3) chicory specialist pasture.
- 4) improved ryegrass at Gore.
- 5) specialist pasture for drier conditions at Balfour.

The Results

Specialist pastures consistently **increased lamb**

growth rates by 40-50% compared with standard ryegrass pastures.

Chicory/red clover	259 g/day
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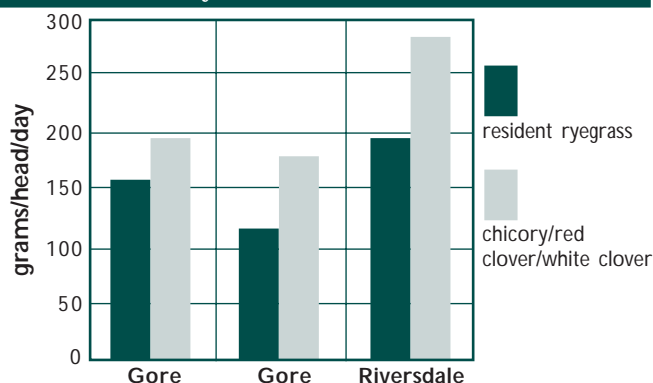
On the chicory/red clover mix, lambs grew **259 g/day** with 35 lambs to the hectare. On average, **9.07 kilograms** of liveweight was produced per day per hectare.

Chicory-based pastures were most effective in boosting carcass production but usually **failed to persist** for more than 3 years.

Improved grasses/white clover	214 g/day
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On the improved grasses/white clover mix, lambs grew **214 g/day** with 35 lambs to the hectare. On average, **7.5 kg** of liveweight was produced per day per hectare.

Growth Weights in Lambs on Resident Ryegrass Pasture and Chicory/Clover Pasture, 1991-1993



note: clover in resident ryegrass. See final report.

- In 1992, Coopworth x Romney lambs were weaned from browntop pasture to browntop (poor pasture), to ryegrass/white clover (medium pasture) or to **high quality pasture (chicory, red clover, white clover and Hakari upland brome)**. Finishing periods ranged from 3 to 18 weeks.
- Lambs on browntop grew at 84 g/h/day. Liveweight gain increased from 160 g/h/day on standard ryegrass/clover pasture to about **200 g/h/day where lambs were grazed on chicory pastures** for 9 weeks or more.
- With a lift in average carcass weights to 15.5 kilograms, the result is an estimated **increase of \$18,000 net profit** for a 2000 su property.

Research results were spread quickly throughout Otago and Southland as **all 6 lowland Meat New Zealand monitor farms** began pasture renewal programs.

Quoted in the **Southland Times**: “Results to date have been exceptional with the **concepts spreading quickly** beyond the original monitor farms”.

Can I afford pasture renewal?

The computer model STOCKPOL™ was used to:

- **compare pasture renewal options.**
- **test the financial benefits.**

A Southland lamb finishing unit was modelled and chicory and improved ryegrass pastures were inputted into the **model farm** to cover 25, 50, 75 and 100% of the farm.

Each year:

- **a percentage of the pasture was ploughed** and sown to turnips for winter feed.
- the turnips were subsequently sown with chicory/improved ryegrass pasture.

Production benefits from the chicory component were modelled to disappear after 3 years and the improved ryegrass to continue to produce for **20 years**.

Predicted gross returns suggest that it is **financially beneficial to renew** pastures.

A realistic option may be renewal of 50% of the farm which should provide a **20% increase in the gross margin**. (see next column).

Predicted Returns From Using Chicory and Improved Ryegrass Over Varying Proportions Of The Farm, 1995.

Percentage of Farm Sowed with Specialist Pastures [%]					
	0%	25%	50%	75%	100%
gross margin (\$/ha) with 130% lambing	398	419	476	549	648
Increase in margin (%)	nil	5.1	19.4	38	62.6
gross margin (\$/ha) with 150% lambing	433	453	523	591	674
Increase in margin (%)	nil	4.6	20.9	36.4	55.6

Survey of farmers

15 farmers who used specialised pastures for lamb finishing and 6 farmers who used standard pastures were surveyed. What was **predicted in research** stacked up on local farms in Southland.

Results showed that the farmers with specialist pastures have **improved lamb carcass weights by 1-1.5 kg/lamb**.

Farmers identified the benefits

- Lambs were available for slaughter at a **higher carcass weight at least as early**.
- Stocking rates, hogget growth and wool weights in the older sheep were improved.
- More lambs were finished over the same period.
- Greater **flexibility** for farmers to meet market requirements.
- **Fertiliser** costs were shown to be about the same between renewed and resident pasture.

Points to Remember

- **Focus** on good pasture management. Poor clover yields, high endophyte ryegrass and rank herbage through poor feed utilisation limits lamb growth weights.
- **A consistent** supply of large lambs improves the efficiency of the processing plants.
- **Productivity per hectare increased** on average by 24% with the inclusion of chicory in perennial pasture mixtures.

Contacts for more information

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