

Introduction of chicory to a Bay of Plenty sheep farm

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Abstract

Low ewe liveweights and general performance on Bay of Plenty sheep farms is a common problem aggravated by farmers keeping lambs through late autumn in an attempt to improve returns. Ewe liveweights of 50 kg or less result in low lambing percentages and wool production of around 4.4 kg/sheep stock unit.

This paper outlines one farmer's identification of the problem and the introduction of 'Grasslands Puna' chicory to help solve this problem. A pure sward was very well established using the spray-drill technique at relatively low cost, despite a late sowing date. Several options now present themselves to increase profitability and flexibility on the property.

Keywords chicory, lamb growth, Bay of Plenty

Introduction

The Bay of Plenty has traditionally been a difficult area for finishing lambs. Poor growth rates due to facial eczema, trace element deficiencies, poor pasture species and quality have all contributed. Carrying lambs through late autumn in an attempt to improve returns has led to low ewe performance and difficulties in winter and early spring management because of insufficient autumn saved pasture.

This paper outlines one farmers introduction of chicory including the method used and how he believes it will solve these problems.

Background

The property, a 200 ha easy hill sheep and beef farm 20 km inland from Te Puke, has been owned and operated by the Linton family for 16 years. Stock policies involve 1300 breeding ewes and 180 bulls on an 18-month finishing system. As with many farms in the area, sheep numbers have declined recently due to the low profitability of this enterprise.

The soil is a yellow-brown pumice (Kaharoa ash) and although of low fertility, provides a good medium for plant growth. The soil is light and free draining. Rainfall of 2000 mm is evenly spread through the year.

The warm moist climate encourages browntop and weed species despite regular fertiliser applications. These factors have meant that spring growth is not sufficient for earlier lambing (usually 1 September start).

Stock performance

Stock policies include 1300 Coopworth breeding ewes mated to Coopworth rams. Performance of the flock has been average, with lambing percentages of 85 to 100 being sold per ewe mated. Ewe liveweights are around 50 kg and wool production of 4.4 kg/ssu is usual. Lambs are sold in small lots from January through until June, approximately 200/month at 13-14 kg carcass weight. This policy of carrying lambs through the autumn has meant other stock types have suffered.

About 180 Friesian bulls are fished each year. These are taken from calves or weaners and run for 18 months. Cattle performance has been satisfactory with bulls being sold at 220 kg carcass weight from December onwards. Improvements in this operation are seen to come from rearing or purchasing better weaners.

Opportunity

An opportunity has existed to increase profit by obtaining higher lamb weights earlier in the season, as shown in Figure 1. An extra \$3.82 per head is gained going from 13 to 13.5 Kg carcass weight. The advantage decreased as the 1990/91 season advanced as follows;

29 October 1990	\$7.79
26 November 1990	\$5.44
17 December 1990	\$3.57
21 January 1991	\$3.82
25 February 1991	\$2.47
11 March 1991	\$2.06

Whether this trend in the schedule continues in future seasons remains to be seen.

The problem

Current lamb performance can be analysed using a growth of 250 g/day liveweight until weaning and 100 g/day from then on. With a birth weight of 4.5 kg and a mean lambing date of 15 September, the potential liveweights and carcass weights (kg) at the beginning of each month would be:

		Liveweight	Carcass weight
Weaning	1st December	23.5	9.4
	January	26.6	10.6
	February	29.7	11.9
	March	32.5	13.0
	April	35.6	14.7
	May	38.6	15.4

The average lamb with a killing out percentage of 40% is therefore not killable until mid March at 13.5 kg carcass weight to take to gain much advantage from the schedule jump at this weight. In practice, weights achieved are at least 1 month behind these potential targets. This is due to the changes in feed quality as pasture goes from summer to autumn, and the problems associated with this (eczema, worm burdens etc).

Solutions

To achieve the heavier lamb earlier in the year we must either:

1. Lamb earlier (and use nitrogen or save more feed).
2. Grow the lambs faster (use crop or breed changes).

Lambing earlier is not a favoured option but would give improvements if used in conjunction with nitrogen applications. A terminal sire (Texel cross) is being used to improve growth rates. 'Grasslands Puna' Chicory was planted to also improve lamb growth rates. Growth rates of 250-300 g of liveweight/day have been recorded on chicory (Hare *et al.* 1988).

If an average mob of lambs were grazed on chicory for 4 weeks they would gain an extra 4 kg liveweight and would potentially reach killable weights in February – a gain of 1½ months over the present situation.

Chicory establishment

After obtaining information on growth rates of lambs on chicory and other crop details it was decided to plant 4 ha of pure sward. A paddock was selected with a mixture of ryegrass, browntop and ratstail. This was sprayed with 5 l/ha of Roundup one week post grazing. The chicory was direct drilled 3 days later at 5 kg/ha (two passes) on 21 November, 1990, about 2 months later than recommended. The total cost of establishment was

\$800 for 4 ha (\$200/ha) and included spray and seed cost and a contractor to drill the seed (but did not include extra fertiliser). We found that spray drilling provided a quick easy method to establish chicory on this soil type.

A very wet period followed and the crop germinated extremely well. The dry spell that started at the beginning of December and lasted until the end of January slowed growth rates from then on. The late sowing date contributed to this.

The crop was first grazed at about 30 cm height on 8 February and two more grazings have followed at about a month apart. Growth rates of lambs were not measured. These are, however, already well documented.

The future

This season will be the test. Provided things go as planned several new options can be taken.

1. Lamb 200 ewes a month earlier and aim for 17.5 kg carcass weight lambs.
2. Lamb the whole flock earlier (may use nitrogen).
3. Increase weight of all lambs.
4. All lambs (except replacements) off the farm by 1 April.

With the quick easy establishment of this 4 ha of chicory, more areas of this crop are likely to be planted on this property.

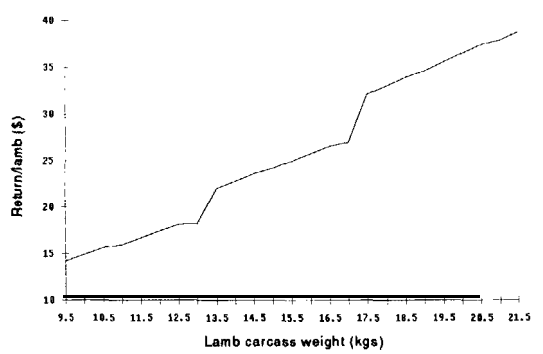


Figure 1 Lamb returns vs carcass weights for schedule on 21 January 1991.

REFERENCES

Hare M.D.; Rolston M.P.; Crush J.R.; Fraser T.J. 1988
Puna Chicory – A Perennial Herb For NZ Pastures,
Proceedings of NZ Agronomy Society 19: 00=00.

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