

Northland Pastoral Extension: Popular Summary

Maximising Lamb Production



Summary of Key Findings

Northland sheep farmers are lifting the lambing performance of their flock – with more lambs to farm, they need to ‘tune up’ management to maximise sale value of the crop.

The feeding level after lambing has the most effect on lamb survival, lamb growth and lamb weaning weights; it also impacts on ewe liveweight gain/loss, up to weaning.

If, in the run up to lambing, feed gets short, ‘tighten up’ the ewes and try to build feed for post-lambing period. Strategic Nitrogen use has a place here.

Ewe fleece weights are more affected by feeding pre-lambing than by feed shortages between lambing and weaning.

Feed Levels in Pre and Post-Lambing Period

Higher lamb losses result from a low plane of nutrition after lambing.

Most differences in weaning weights of lambs are due to post-lambing level of nutrition, *not* level of nutrition before lambing.

Fleece weights are predominantly affected by pre-lamb level of nutrition.

The effects of different feed levels, in the pre and post-lambing period, were investigated in 1946 and 1947. 250 Corriedale ewes, mean liveweight 44.5 kg, were used to investigate nutrition and weight during pregnancy. There were 4 mobs of ewes:

- Mob 1 – high plane of feeding both before and after lambing (HH).
- Mob 2 – high plane before lambing, then went to a low level (HL).
- Mob 3 – low plane before lambing, and then stepped up their intake after lambing (LH).
- Mob 4 – ‘did it hard all the way through’ (LL).

Lamb Production

Mob	Treatment	Mortality of lambs (%)	Weaning weight (kg)		Fleece Weight (kg)	Ewe liveweight mean (kg)		
			Singles	Twins		Start	Lambing	Wean
1	HH	18	30.7	25.7	3.3	44.5	54.0	49.5
2	HL	23	25.5	20.6	3.3	44.5	54.0	45.4
3	LH	16	29.4	26.1	2.8	44.5	42.7	44.0
4	LL	26	25.8	19.4	2.7	44.5	42.7	40.9

- High plane of nutrition after lambing influenced lamb weaning weights.
- Fleece weight lifted by high pre-lambing feed level.
- Ewe liveweight change overall most affected by High/High and Low/Low treatments.
- Liveweight gains occurred on good nutrition **before** lambing.
- Lamb mortality lower as a result of better feed after lambing.

Mobs 1 and 3 had heaviest single and twin lambs at weaning; mobs 2 and 4 way down in lamb weights.

Mobs 3 and 4 on low feed through pre-lamb stage wound up with half a kilo lighter clip than the well-fed ewes.

Mob 1 gained weight, mob 4 lost weight (as expected); mobs 2 and 3 stayed pretty much as they were.

Mobs 1 and 2 gained 9.5 kg; the two low mobs, 3 and 4, lost 1.8 kg.

To achieve gains from **high post-lamb feeding**, emphasis must be on grazing management to keep pasture in a green, leafy phase for ewes with lambs at foot and to try to control stem production by adding cattle to the lambing paddocks. (See Popular Summary – Maximising Ewe Performance.)



- One factor that strongly influences feeding levels for the breeding ewe at lambing time is choice of **lambing date** and how well that fits with the grass growth curve.
- Achieving fast lamb growth prior to weaning really impacts on post-weaning management of ewes and lambs. If high average daily liveweight gains are achieved through this period, lambs can be weaned at 8 weeks of age.

Lambs are commonly weaned at 12 weeks of age – early weaning gives important flexibility **and** advantages in overall management.

Lamb Growth

In the post-weaning period, lamb growth rates vary considerably, depending on quality of pasture offered.

- Weaning date should be determined by weaning age and liveweight of lambs.
- Farmers need to be encouraged to look at the advantages of relatively early weaning (rather than the *perceived* disadvantages).

Most farmers tend to postpone rather than to make the decision to wean – they should be doing the opposite!

Nutrition of young growing lambs

Nutrition of young growing lambs was looked at in 1971 at Lincoln College.

- Growth weights of lambs weaned at 3, 4 and 5 weeks of age onto fresh lucerne were compared with suckled lambs whose mothers continued to graze ryegrass-white clover pastures. Mean liveweights of the early-weaned lambs were comparable to those suckled right through to 11 weeks of age.
- The subsequent lamb growth of different breeds, when one lamb of a set of twin lambs was early-weaned onto lucerne at 26 days of age and the other twin was left as a single on the ewe, was also studied. During the period from 40–100 days of age, lambs early-weaned onto lucerne grew **faster** than those suckling the ewes.

Lambs weaned at 3 weeks of age were only 1 kg on average lighter in carcass weight.



Weaning age and export lamb production

The effects of weaning age on export lamb production and growth performance of lambs weaned as early as **4 weeks** compared with those weaned at 12 weeks of age was looked at in 1981.

The removal of the competition of the ewe for the same feed benefited grazing-only lambs compared with those continuing to suckle; also, ewes with early-weaned lambs were shown to pick up more liveweight.

Feed Management

From weaning of lambs until sale or slaughter, emphasis has to be on maximising growth rates. Management prior to, and after, the selected weaning date must consider:

- Maximising clover growth in existing pastures; or
- Looking at alternative feeds that might be grown as a special addition to the lamb diet.



Research in 1979 demonstrated herbage allowance was the prime factor in achieving good growth rates.

Growth rates of 150 g/day were achievable with 5 kg DM/lamb/day.

Try to have only 40% to 50% pasture utilisation for fast growth rates; give them plenty of **choice**.

Maximising clover growth

One of the easiest ways of giving lambs a better choice and a greater amount of white clover is to place them on pasture that's been predominantly grazed by cattle during the spring months, which will leave a lower layer of fresh feed for the lambs. Spread thinly through cattle blocks, they will also enjoy benefits from different endoparasite populations as well.

Opportunities exist to chemically manipulate pasture to prevent ryegrass going to seed and to maintain a higher clover percentage and green-leaf content of the overall pasture.

Special Pastures or Crops

For intensive lamb production, consider:

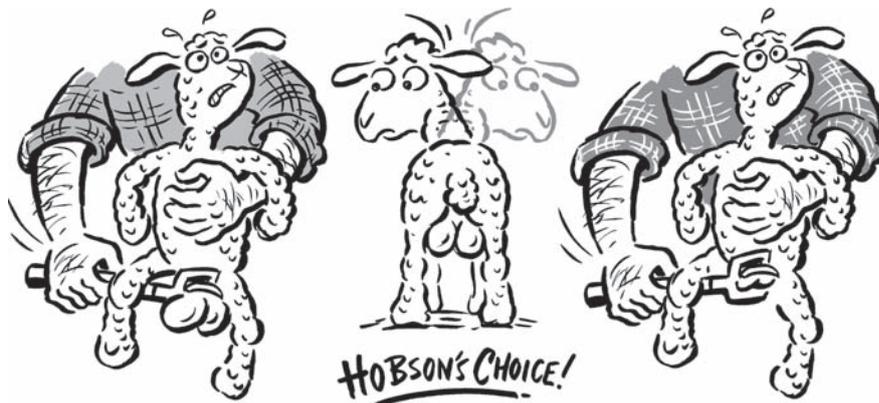
- Deliberately establishing very high-clover pasture areas by over-sowing both white and red clover into the pasture mix on suitable soil types.
- Using ryegrass varieties with low endophyte levels, but still resistant to Argentine Stem Weevil.
- Feeding lucerne – particularly on sandy soils in Northland.
- Using Plantain, Sulla and Puna chicory – Plantain is a permanent pasture mix additive, compared with other two.
- Feeding Brassica crops – if a pasture renewal programme requires repeat weed and/or pest control measures.

Animal Management and Maximising Lamb Growth



Wether or Not?

An alternative to castrating male lambs is to go for the short scrotum at docking time; both testicles are held close to the abdomen and the purse removed. This transfers the benefits of rapid ram growth – more lean meat and lower fat cover – compared with conventional wether lamb production. Such lambs are not strictly cryptorchids, so may have a fairly high ‘success rate’ if allowed to run with ewe lambs.



Drafting

Drafting should be done only with single-sex mobs. Weigh them and only present a narrow range of liveweights for drafting.

Monitor lamb body condition as well as bodyweight – the rate at which animals arrive at the stage of life when they begin to lay down fat rather than continue to grow in body size varies.

Autumn Lambing

Research in 1988 reported autumn-born lambs in Northland were lighter at birth, had better survival rates, grew more slowly and were lighter at weaning compared with spring-born lambs of the same age.

Very high growth rates are possible on Sept–Oct pastures – thus autumn-born lambs **could** be ready to exploit the heavy-lamb market premiums in Oct–Nov **and** the farm would be cleared of lambs over dry summers.

Shearing

The impacts of shearing on lamb growth rate, studied in Northland in 1984, showed shearing is **not** an effective management strategy on most farms to improve growth rates of hill-country lambs.

- Shearing hill-country lambs growing at less than 150 g/day only **once** (close to slaughter in the autumn) had no effect on growth rate but consistently resulted in higher total net meat and wool returns compared with shearing lambs **twice** (summer and autumn).
- For lambs growing in excess of 200 g/day, the resultant increased net meat returns from shearing early in the summer were partly offset by decreased net wool returns compared with those of once-shorn lambs.

The hoped-for effect of shearing has to offset cost of shearing, twice, through carcass weight gain – wool returns are even more depressed than when this work was done!

Pests and Diseases

Summer and autumn in Northland are tough environments for young lambs, for they are faced with:

- Ryegrass staggers.
- Facial eczema.
- Ergovaline and zearalenone.
- 'Ill-thrift' and viral pneumonia.
- A high internal parasite challenge – particularly from *Haemonchus*.

The **number one** enemy. Stringent precautions should be taken – protect young lambs with zinc.

Parasitism, despite intensive drenching regimes, remains the predominant cause of ill-thrift.

Internal parasites are favoured by the Northland climate. Careful monitoring of the challenge lambs are facing is vital to prevent weight loss to those suckers!

Trace elements, drenching and preventative vaccination programmes need to be sorted out for individual properties with a veterinarian.

Ill-thrift

Research in the North Island in 2002 and 2003 showed healthy lambs grew at 102 g/day and 113 g/day respectively; ill-thrift lambs grew **only** 40 g/day in 2002, and in 2003 growth was **nil**.

Year	Causes of ill-thrift		
	Parasitism	<i>Fusarium fungus</i>	Unexplained
2002	50%	29%	21%
2003	50%	50%	

Drenching

Research in 1970 showed small but consistent improvement in liveweight and carcass weight of lambs born to pre-lamb drenched ewes, compared with the weight of lambs born to undrenched ewes.

Main effect thought to be coming from better performance of the ewes **after lambing**, rather than any reduction in challenge or actual worm burden in the lambs.

Research in 1995, using **controlled-release capsules (CRCs)** in ewes, almost eliminated the faecal egg output from ewes during pregnancy and early lactation, giving greater lamb liveweight gain and making pre-weaning drenching of lambs unnecessary.

Questions remain about long-term effects of drenching mature adult animals for worm control as a means of reducing worm burdens in their progeny.

Research in 1997 used CRCs in lambs on two diets – **low** or **high** in protein.

- The use of capsules produced a small increase in LWG in lambs on the low-protein diet, but had no effect on wool growth.
- Capsules had **no** effect on LWG or wool growth in lambs on the high-protein diet.

Capsules increased lamb resistance to ingested larvae 30 days after the capsule expired, but no effect 75 days after capsule expiry.

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A project coordinated by the Northland Pastoral Farming Development Group

The unabridged version of **Research Stocktake – Maximising Lamb Production** is available on the Enterprise Northland website www.enterprisenorthland.co.nz