

Northland Pastoral Extension: Popular Summary

Maximising Ewe Hogget Performance



Summary of Key Findings

Grow ewe hoggets well – it's worth it!

If not mating your hoggets at present, try mating just those that are 50 kg LW or more.

Consider a modified shearing policy to boost two tooth reproductive performance and lift ewe hogget expression of oestrus as well.

Protect ewe hoggets against facial eczema.

Growing Good Ewe Hoggets

Growing good ewe hoggets is the essential first step in giving ewes lifetime performance capacity – lets them express their genetic abilities and 'puts more money in your pocket'.

Research in the 1940s investigated the effects of high-plane and low-plane nutrition in the rearing of hoggets on their **lifetime** productivity.

There were two trials:

- Differences in nutrition were applied from birth until 12 months of age, then all hoggets were run together as one flock – liveweight differences of 3.6 kg were evident at weaning, 13.6 kg by 12 months of age.
- Differentials in feeding were applied from weaning (4 months) until first mating (18 months old) – produced differences in liveweights of 15.9–18.1 kg.

Ewes from the low-plane nutrition hogget group had:

- Delayed onset of oestrus, and 38% barrenness as two teeths.
- Shortened useful lives through more teeth wear.

Ewes culled at 5½ years of age because of teeth wear

	Low plane	High plane
1946	60%	45%
1947	50%	20%

In a remarkable display of resilience, low-plane nutrition ewes recovered to similar liveweight and performance levels as the high-plane nutrition group by the time they lambed as 4 tooths!

However, overall, the low-plane nutrition ewes weaned 18% fewer lambs per year as two tooths and 25% fewer lambs per lifetime compared to the high-plane nutrition ewes.

Hogget Oestrus

For Romney and Coopworth breeds, hogget oestrus tends to be more strongly expressed in heavier, better-grown sheep – so target liveweights in May should be at least 45 kg and preferably 50 kg; and, in the following March, 60 kg before mating as two tooth.

If a hogget has at least one oestrus in the first autumn, it will have a better lifetime performance than a ewe which did not show oestrus as a hogget.

Research in 1981 found:

- Ewes recording one hogget oestrus averaged 0.04 more lambs per ewe lambing (1.55 vs 1.51).
- Ewes with three or more hogget oestruses averaged 0.1 more lambs compared to ewes not showing hogget oestrus.
- Ewes with at least one hogget oestrus had a lower proportion of barrenness – 6.1% vs 8.7% over 3 years.

Combined advantage in litter size and reduced barrenness of ewes which show oestrus as a hogget results in an extra 7.7 lambs/100 ewes (23 additional lambs over 3 lambings).

Research in 1979 revealed that different breeds show a different relationship between hogget liveweight and oestrus. Finn x Romney F1 hoggets showed a high (88%) incidence of oestrus, straight-bred Romneys low incidence (25%), other breeds ranged from 52–67%.

Sire breed	Average March liveweight (kg)	Ovulation rate
Booroola Merino	27.1	1.59
Finn	29.1	1.42
Border Leicester	31.3	1.11
Romney	27.0	1.10
Dorset	30.2	1.06
Finn x Romney	28.5	1.05
Oxford	32.7	1.05
German	30.7	1.03
Cheviot	30.2	1.02

Ovulation rate was more influenced by differences in breed – as noted in observed incidence of oestrus – than liveweight.

Research on Romney sheep in 1978 reported on the effects of high and low levels of nutrition before the end of the hogget mating season and from then until mating as two tooth.

When ovulation rates were corrected for two tooth liveweights, ewes which showed oestrus as hoggets had:

- Ovulation rates higher by 0.17 ovulations.
- A greater percentage of multiple births among ewes that lambed.
- No difference in the percentage of barren or dry ewes compared to ewes which did not show oestrus as a hogget.

Ewes which showed hogget oestrus produced 1.00 lambs born per ewe; those that had not exhibited hogget oestrus, produced 0.85 lambs – a 15% advantage.

Hogget Mating

Still some resistance to this idea because of perceived problems, rather than looking to the real advantages – which are an extra crop of lambs for little extra cash expense, *and* a clear lifetime gain, overall, in ewe productivity.

In 1981, it was shown that lambing hoggets produced, on average, 1.09 lambs, of which 72% survived to weaning. An average of 30% (range 10–57%) of hoggets joined actually lambed.

- Reproductive performance 2–4 years of age showed little difference in litter size and lamb survival to weaning.
- Two tooth ewes' liveweights and fleece weights were affected adversely, but they recovered by the four tooth stage.
- Two tooth ewes were 3 kg lighter in bodyweight and clipped 0.2 kg less wool, but both differences had disappeared at the four tooth stage.
- Ewes mated and lambed as hoggets outperformed their flock mates first joined as two teeth – 10% more lambs weaned (lambs weaned/ewes joined), 12% increase in average weaning weight of lambs, 22% more total weight of lamb weaned.

In 1983, a report was made on the effect of hogget lambing on the subsequent two tooth performance of Romney, Coopworth and Perendale sheep.

- Actual weaning rates (lambs weaned/ewes joined) of over 50% achieved from Coopworth and Perendale hoggets which had pre-mating liveweights of at least 30 kg; a 35 kg pre-mating liveweight for Romney resulted in a 47% weaning rate, a 29 kg pre-mating liveweight with Romneys resulted in a very low (13%) weaning rate.
- Hogget lambing did affect the weight of the hogget at the date their lambs were weaned, but had no effect on two tooth pre-mating weight.
- Hogget lambing did not impair two tooth reproduction.

Results are at variance with other work – the lambed hoggets typically had a lower liveweight at weaning but no effect on two tooth liveweight at joining. These results reflect the preferential nutrition needed to be given to lambing hoggets. Emphasises good management as a key to successful hogget mating and can minimise possible liveweight effects on a ewe hogget.

There was a small reduction of 0.15 kg less wool at the two tooth pre-mating shearing.

Management

Wherever possible, separate twin-bearing ewes at lambing time and mark all twin ewe lambs for selection purposes (their extra potential lambing performance can be used to advantage in lifting fecundity of the flock).

Pasture allowance and pasture utilisation interact to set the possible growth rate of young sheep.

Pasture allowance and lamb growth in autumn were looked at in 1980.

- As lambs increase in weight, maintenance requirements increase, so at any given pasture allowance, less feed is available for growth.

Example

To grow 25 kg LW lambs at 100 g/day requires an allowance of 2 kg DM/head/day; lambs over 30 kg LW need 3 kg DM/head/day to grow at the **same** rate.

- Pasture utilisation (assessed on residual dry matter) should be less than 50% to achieve 100 g/day growth rates.

The later lambing date of ewe hoggets means they are heading well into the dry part of the year with lambs at foot, so the policy should be to prepare to sell those lambs as stores, rather than try to farm them through. Early weaning of those lambs will give the lambed ewe hoggets a chance to gain body weight before their subsequent mating as a two tooth.

Crossbreds, particularly involving exotic breeds, confer some big improvements in sheep performance.

Trials in New Zealand 1972–1978 showed Finn x Romneys outperformed other breeds or crossbreds:

- For hogget mating, had highest ovulation rates at all ages, achieved highest conceptions, exhibited lowest embryonic mortality and recorded proportionately least perinatal lamb deaths.
- Produced largest litters, had lowest percentage barrenness among ewes.
- Demonstrated clearly the best mothering abilities.



Finn x Romneys – an outlier in terms of superior reproductive performance!

Shearing

Lamb to four tooth shearing and crutching dates

Consider an alternative shearing policy, where ewe hoggets are shorn in April (before mating as hoggets); then next full shear is December as 16-month-old hoggets – only a March tup crutch might be needed before mating in April as two teeth.

The alternative shearing policy offers a number of practical advantages:

- Pre-tup shearing during dry autumns can be avoided, and additional pasture needed to meet post-shearing feed requirements can be used for flushing.
- Autumn hogget shearing, which can be combined with hogget mating and selection programmes, also encourages the onset of oestrus in ewe hoggets. This will benefit the lifetime productivity of these ewes and will increase cash returns from hogget lambs.
- There is a saving of one full shearing cost compared to the traditional pattern.

Animal Health

Facial eczema protection for ewe hoggets is absolutely critical.

Zinc protection is effective and easy to provide over extended periods.

(For other pest and disease problems, see **Research Stocktake – Maximising Lamb Production** and **Research Stocktake – Maximising Ewe Performance**.)

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A project coordinated by the Northland Pastoral Farming Development Group

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