

An optimum New England wool production system

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Monitoring the liveweight and fat score (FS) profiles of a mob of breeding ewes at Kialami (15km west of Armidale) on the Northern Tablelands during 2004 as part of the Lifetime Wool Project (Thompson and Oldham 2004) has highlighted a problem with the New England wool production system. On the Northern Tablelands the majority of Merino producers join in April and shear in mid-winter. While this production system does match the pasture production curve for the tablelands, with the peak feed requirements of lactation tending to occur with the probable onset of spring pasture growth, pasture availability is not sufficient during August when the ewes are off-shears in late pregnancy to meet their nutritional requirements.

The basics - general

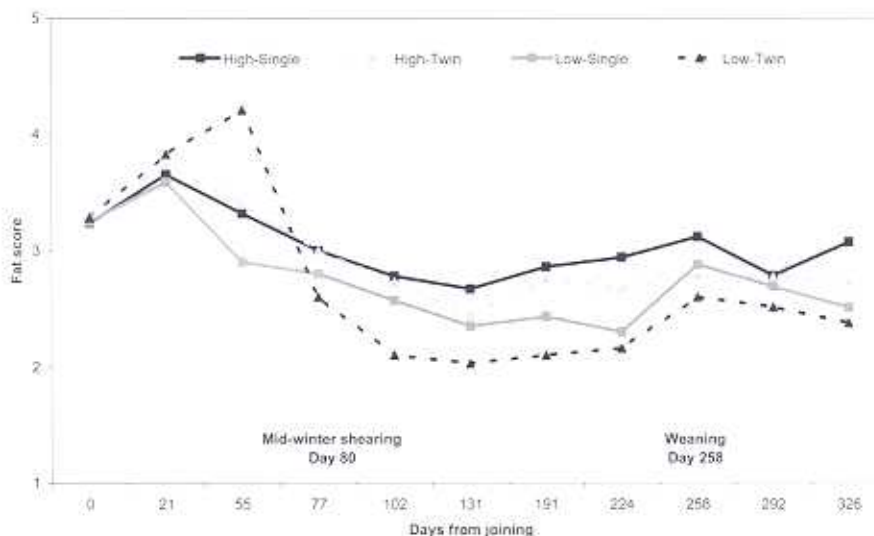
The timing of lambing has to be a compromise between weather conditions generally favouring lamb survival, spring feed growth for lactation, enough time for weaners to grow out in autumn and ewes to recover bodyweight in preparation for the next joining.

The basics - summer/autumn

Weaning lambs at 14 weeks from day one of lambing is a basic requirement to give the ewes sufficient time to recover bodyweight before their next joining. At Kialami twin bearing ewes, particularly those offered a low plane of nutrition during lactation the previous Spring, were half a fat score lower in condition at weaning than single bearing ewes or those on better nutrition through the previous spring (Figure 1).

Selection of pastures with the correct pasture mass and digestibility in summer post weaning is critical to recover fat score on these ewes to a minimum of 3 prior to the autumn joining. Based on Grazfeed predictions to maintain single bearing ewes already in FS 3 at weaning, a pasture mass not less than 2,000kg Dry Matter (DM0)/ha total of summer grasses including 800kg green DM/ha with a DM digestibility of 65%. Ewes whose FS has dropped to 2.5 at weaning after rearing twins need to be put on a pasture whose total mass is 2,000kg DM/ha but with 1,000kg DM/ha of better quality green (i.e. 68% DM digestibility) to gain half a fat score by joining.

Figure 1. Fat score profile from joining for breeding ewes at Kialami



The basics - winter

Both Prograze and Wean More Lambs extension programs recommend that ewes be maintained in FS 3 through winter from mid-pregnancy to lambing. The Kialami site has shown in the New England Tablelands this is very difficult to achieve once the mid-winter shearing has occurred (Figure 1). A FS 3 can be maintained up to scanning at 100 days

but then decisions have to be made on how best to achieve the FS 3 target at lambing when ewes identified as single or twin bearing are off-shears.

The target can be addressed in two ways; (i) accumulating pasture mass in lambing paddocks from May onwards or (ii) accumulating pasture mass but using supplements if pasture benchmarks for late pregnancy are not reached. The Prograze benchmark for ewes in late pregnancy is 1,200kg DM/ha green, 500kg DM/ha dead and 15% clover. However, the clover component of winter pastures in the New England Tablelands rarely exceeds 1% in winter. Even if this target late pregnancy pasture mass of 1,200kg green DM/ha is achieved through locking up a paddock; because of cold stress off shears a mob of ewes carrying both singles and twins grazing this paddock will still lose an average half a FS a month in late pregnancy. This deficiency in pasture quality through lack of clover coupled with the difficulty in accumulating green pasture mass in dry winters generally means that supplementary feeding with cereal grain will be needed for a month off-shears to maintain full potential reproductive rates established by ewes in FS 3 condition at an autumn joining.

The other factor affecting the basic nutrition of sheep in winter on the New England Tablelands is sharing pastures with a mid-winter calving breeding cow enterprise. Recent statistics indicate that the livestock mix on many properties in this region is 60% of DSE's in sheep and 40% in cattle. Accumulating a late pregnancy benchmark for sheep of 1,200kg green DM/ha can be achieved on improved pastures which can grow at the rate of 10kg/ha/day in winter. Leaving an improved pasture paddock with a green pasture mass of 1,700kg DM/ha (6-7cm high) unstocked from the end of May will accumulate another 1,000kg DM/ha by September. If this paddock was stocked at 1 cow per ha to calve down during winter total intake would be 7kg DM/day for 100 days (i.e. 700kgs). Potentially this would leave 2,000 kg DM/ha for the ewes but allowance must be made for residual pasture mass for growth (i.e. 800kg DM/ha). Thus

even with winter grazing by the calving herd, the correct benchmark for ewes in late pregnancy to replace the cattle in this paddock (1,200kg DM/ha) can be achieved.

However in many instances this feed will not be available as seen during winter in 2004 at Kialami when ewes 132 days pregnant were only offered 550kg DM/ha green and 1,100kg DM/ha dead with 1% clover. As a result of this seasonal reality the trial ewes were fed 200gm/hd/day of cereal grain as a supplement. Twin bearing ewes off-shears on this pasture will need 200gm/day of cereal grain supplement to slow their weight loss to half a fat score per month whereas single bearing ewes will be maintained at this rate. If single bearing ewes on this pasture are not fed they will also lose half a fat score per month (127gm/hd/day) but at some cost saving.

What we have learnt from Lifetime Wool Project in New England so far

- do not let ewes lose condition after weaning
- fat score can be both maintained or manipulated from joining to shearing
- following shearing maintaining FS 3 in late pregnancy is difficult but worthwhile
- clover is an important component of late pregnancy nutrition and benchmarks
- most years supplementary feeding will be required for twin bearing ewes in late pregnancy off shears

Following these guidelines will lead to better survival and growth rate in lambs to weaning (the first opportunity for sale) and better long term wool quantity and quality from lambs into adult life.

References

- Thompson AN, Oldham CM (2004) Lifetime Wool I. Project overview. In 'Animal Production in Australia': The University of Melbourne, Parkville, Victoria, p. 326. (The Australian Society of Animal Production: Melbourne)