1-1-1991

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Getting the best out of weaner sheep in the eastern wheatbelt

By Sally Revell, Research Officer, Dryland Research Institute, Merredin

Some of the weaners used in the monitoring programme.

Background

The eastern wheatbelt receives less than 350 mm average annual rainfall, and the quality and quantity of paddock feed often limit sheep production over the dry feed period. High rates of cropping and the use of herbicides further exacerbate pasture availability in an area where pasture quality can start to deteriorate as early as September.

Crop stubbles only partially fill this feed gap. Although stubbles are plentiful, their nutritive value declines rapidly under grazing.

Inadequate nutrition of weaners (weaned sheep under 12 months old) during the dry feed period can lead to poor growth and subsequent loss of production, or in some cases even death.

About the study

The Merino weaner flocks were selected from within the Department of Agriculture’s Merredin advisory district to provide a range of lambing times.

In the first year of the study, eight autumn-born weaner flocks and two winter-born weaner flocks were monitored from midsummer 1989 until late autumn 1989. In the second year of the study, four autumn-born flocks and four winter-born flocks were monitored from the time of weaning in 1989 until late autumn 1990.

One hundred ewe weaners were selected at random from each of these flocks. The selected animals were ear-tagged and then weighed and condition scored at four to five-week intervals. Information on the management of the flocks was recorded at each visit.

A study of the growth of Merino weaner flocks over summer and autumn in Western Australia’s eastern wheatbelt during 1989 and 1990 has identified efficient weaner management strategies, and provided a basis for future research and extension needs of this area.

The average liveweight of several weaner flocks was unexpectedly low at the start of summer. Weaner flocks may need to be supplemented before the start of summer to prevent undue weight loss at this time.

Several weaner flocks were fed excessive amounts of supplements over summer and autumn. By monitoring the liveweight of weaner flocks regularly, this excessive and costly feeding can be avoided.

Only a few farmers had adopted Department of Agriculture drenching recommendations to control sheep worms. Many did not know whether their weaners actually needed drenching.
Reaching target liveweights

1988 to 1989

The most striking result from the first year of the study was that the weaners in the two winter-born flocks were heavier and in a better condition score in midsummer than many in the autumn-born flocks (Figure 1). This suggests that the owners of the winter-born flocks were aware of the need to get their weaners up to weight by the start of summer to prevent future production losses.

The result also indicates that the quality and quantity of available pasture in late spring may not have been enough to maintain weaner growth in some of the autumn-born flocks. If these flocks had been supplemented before the start of summer excessive weight loss could have been avoided.

Department of Agriculture research has shown that individual weaners can safely drop to 25 kg liveweight or condition score 2 without losing production. Maintaining weaners at 25 kg or above reduces the risks of death and wool tenderness, increases future wool growth, and ensures the onset of oestrus in maiden ewes. Generally, the heavier weaners are at the end of the year.
Lupin seed is one of the best supplementary feeds for sheep grazing stubbles.

In midsummer 1990, the average liveweight of all flocks was greater than 25 kg (range 39.2 to 42.8 kg for autumn-born weaners and 28.6 to 32.4 kg for winter-born weaners (Figure 1), with condition scores better than 2.5. In midsummer of 1989, the range in liveweights was 25.9 to 42.5 kg for autumn-born weaners and 34.8 to 36.7 kg for winter-born weaners. Farmers adjusted their feeding strategies in response to the monthly weighing results, so that their weaner flocks reached desired liveweights and condition scores by the start of summer.

In 1990, all the winter-born flocks were lighter than the autumn-born flocks in midsummer (Figure 1), primarily because the autumn-born weaners were three months older than the winter-born weaners. One of the strongest arguments against adopting a winter lambing practice is that if farmers want to sell their winter-born lambs before summer starts, their lambs are smaller and therefore do not sell as well as autumn-born lambs.

Over the summer and autumn of 1989-90 the growth rate of weaners born in winter was more than double that of the autumn-born flocks. Department of Agriculture research has shown that future wool yields and liveweight may be lower with late drop lambs, unless they reach similar liveweights to early born lambs.
by the end of the first autumn. Both years' results demonstrate that this can be achieved in the eastern wheatbelt.

Minimise supplementation

1988 to 1989

Farmers started to feed supplements to their weaner flocks between January and March 1989. Most flocks were fed supplements of cereal hay with either oats or lupins (Figure 2) for an average of 16 weeks (range zero to 21 weeks). Two flocks which were not supplemented had access to cereal and lupin stubbles in which grain was plentiful. All flocks either gained weight or came close to maintaining weight over summer and autumn in response to these feeding strategies (Figure 1).

The average cost of hand feeding weaner flocks in the summer and autumn of 1988-89 was $3.03 per head (Figure 3). Much of this cost was from feeding high rates of hay (up to 58 kg per head), which is a bulky and poor quality feed supplement.

Most flocks were fed excessive amounts of supplement. The weaners weighed enough at the start of summer to have been fed for maintenance or even controlled weight loss. These strategies would have reduced the costs of supplementary feeding.

1989 to 1990

Weaner flocks were introduced to supplementary feeding much earlier in the 1989-90 season. Hand feeding of most flocks, with either cereal hay or lupins, started between October 1989 and February 1990, a decision made in response to the monthly weighing results. However, the rate and duration of supplementary feeding was markedly lower than it was over the 1988-89 season (Figure 2). Weaners were only supplemented for an average of six weeks (range zero to 16 weeks) and the average cost of hand feeding was reduced to $0.73 per head (Figure 3).

Some of the observed reduction in supplementary feeding can be attributed to the unseasonal summer rainfall in the eastern wheatbelt in 1990, which resulted in the germination of a plentiful green pick. In response to the green pick the average liveweight of the autumn-born weaner flocks in late autumn 1990 was 7.6 kg heavier than that of the autumn-born weaner flocks in late autumn 1989; and the average liveweight of the winter-born flocks in late autumn 1990 was equivalent to that of the autumn-born flocks in 1989 (Figure 1).
Time of lambing and stocking rate

The average whole-farm stocking rate over the summer and autumn of 1988-89 was 1.15 dry sheep equivalents per hectare (DSE/ha). Properties that had adopted a winter lambing practice maintained above average stocking rates (Figure 4).

In 1989-90, farms that practiced winter lambing carried an average of 0.4 DSE/ha more than the farms on which ewes lambed in autumn. If lambing is delayed until July then the nutrient demands of pregnant and lactating ewes are better met by feed availability and a higher stocking rate can be maintained.

Worm control

In 1988-89, few farmers had adopted the Department of Agriculture’s drenching recommendations for sheep worm control. Weaners are highly susceptible to contamination by parasitic worms, and high worm burdens can inhibit their future production. None of the farmers monitored the worm burdens in weaners and they did not know whether their weaners needed drenching or not.

In mid spring of 1989-90, faeces from 15 animals in each flock were collected for analysis of worm egg concentration. The results showed that all except one flock were likely to have had worm burdens that needed drenching. The owners of two of those flocks had never drenched their weaners and were not aware that their weaners had a parasitic worm problem.

In 1988-89, one of the autumn-born flocks were in surprisingly poor condition by midsummer. The poor performance of this flock may have been partially due to large populations of parasitic worms inhibiting growth. Weaners on this property were drenched in the summer of 1990 and this may well have contributed to their better performance in that year. This improved productivity highlights the value of monitoring for parasitic worm control.

Recommendations

- Farmers need to decide what liveweight and condition score they want their weaners to attain by the start of the dry summer-autumn period, and regularly monitor the liveweight change and condition score of a representative sample of their weaners. They can then decide when and at what rate to supplement their weaners to ensure they reach the desired liveweight.

- Money can then be saved by not overfeeding weaners, or it can be made by the increased production and improved wool quality derived from not underfeeding them.

- Weaner flocks should reach an average liveweight of at least 30 kg by the start of summer so that they can be fed for maintenance or even controlled weight loss over summer and autumn. Individual weaners can safely drop to 25 kg over this period without a significant loss of production.

- Pasture quality in late spring might limit weaner production in some seasons. It may be necessary to feed weaners low rates of supplements at this time if desired growth rates are not being achieved.

- Winter-born weaners can perform well in the eastern wheatbelt. However, they tend to be lighter at the start of summer than autumn-born weaners, and they do not sell as well as autumn-born weaners at this time.

- Farmers whose flocks lamb in winter can carry sheep at a higher stocking rate than those who adopt autumn lambing.

- Lambs that are weaned early (12 to 14 weeks after the start of lambing) can perform well in the eastern wheatbelt.

- Monitoring the parasitic worm burdens of weaners by conducting faecal egg counts is recommended for determining whether weaner flocks need drenching.