Ruminant Feedbase

Nutritional management to reduce embryo mortality in short-term flushed ewes

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Organisation	Charles Sturt University
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Location of Research	Wagga Wagga, NSW

Aim

Increasing the number of lambs weaned can increase the profitability of sheep production. Nutrition around joining has the potential to affect ovulation rate and embryo mortality, and so lambs born per ewe. Flushing on lucerne pasture has been recommended as a means of increasing the number of lambs born, but there has been concern in the sheep industry that grazing lucerne during joining causes embryo mortality.

MLA funded two studies which aimed to determine whether the quantity of lucerne consumed altered foetal numbers, and whether removal of ewes from lucerne during early pregnancy would increase or decrease foetal numbers.

Pen study

During 2013 and 2014, Merino ewes were oestrous synchronised, artificially inseminated (Day 0), and fed in group-pens one of 5 treatments:

1. Control – Fibre pellet Day -7 to 17 at maintenance
2. Freshly cut lucerne pasture at maintenance from Day 0 to 17
3. Freshly cut lucerne pasture ad libitum from Day 0 to 7
4. Freshly cut lucerne pasture ad libitum from Day 0 to 17
5. Freshly cut lucerne pasture ad libitum from Day -7 to 17

Pregnancy rates were similar in all treatments. However, feeding lucerne at ad libitum quantities for the first 17 days after insemination reduced the percentage of pregnant ewes with multiple foetuses (18%) compared with ewes fed at maintenance levels of lucerne (32%) or pellets (34%). The percentage with multiples was similar for ewes fed ad libitum for the first 7 or 17 days.

(pen study cont.)

The number of foetuses per pregnant ewe was reduced from 1.33 when fed at maintenance, to 1.21 when fed ad libitum.

It is recommended that artificially inseminated ewes should be fed at maintenance levels after insemination to minimise embryo mortality. Further research is needed to determine optimal feeding management for ewes.

Grazing study

A grazing study was conducted during 2014 to evaluate flushing with lucerne under commercial conditions with autumn-joined, naturally-mated ewes. Three treatments were compared:

1. Grazing dead pasture from Day -7 and throughout joining
2. Grazing live lucerne from Day -7 to Day 7 of joining, then dead pasture
3. Grazing live pasture from Day -7 and throughout joining

The rate of pregnancy was similar between treatments. The number of foetuses per ewe joined was increased by 30% for ewes grazing lucerne (lucerne 1.6 compared with dead pasture 1.3), which resulted in ewes grazing lucerne marking 115% lambs compared with 96% lambs from ewes joined on dead pasture. Leaving ewes on lucerne throughout joining produced the same number of lambs as removing ewes after day 7 of joining. Flushing ewes on lucerne was highly effective at increasing the number of lambs born and marked.

Recommendations

Artificially inseminated ewes are best fed at maintenance levels after insemination to maximise foetal numbers

Grazing naturally cycling ewes on **leafy lucerne pasture** for **7 days before joining and the first 7 days** of an **autumn joining** can produce large increases in twinning rates and the number of lambs born. The level of response will vary with the quality and quantity of lucerne.

(recommendations cont.)

Naturally cycling ewes can remain on lucerne throughout joining without risking a reduction in foetal numbers, but there may be no increase in foetal numbers if most ewes mate and fall pregnant in the first 14 days of joining. This means that if there is a limited quantity of lucerne, ewes can be removed from lucerne at day 7 of joining while still gaining an increase in the number of foetuses.

Avoid grazing lucerne heavily infected with fungus or aphids – this is known to reduce ovulation rates in ewes.

Higher twinning rates result from flushing – producers need to appropriately manage the higher nutritional needs of twin-bearing ewes and twin-born lambs, and lamb survival, to gain the most benefit from flushing ewes