

Exclusion lamb feeder trial underway to address weight gain in lambs

Introduction

There is a keen question from sheep producers in wanting to learn, "what is the best management option to have lambs put on weight to a market specification in the most efficient time possible?"

With that question in mind, Sheepmatters has been asked by FarmLink, to look at an Exclusion Lamb Feeder Trial. The hypothesis of the trial is to see if in fact lambs will have better weight gain through a creep feeding system, which excludes the ewe having access to the feeder. By allowing this to happen, it will allow the lamb to develop its rumen more rapidly which should allow the lamb to put on more weight more quickly. This therefore will allow the lamb to have a more efficient conversion rate than a lamb that hasn't had access to an exclusion or creep feeding system. This also allows the lamb to have access to the feeder without the competition from the ewes. Also, the amount of grain saved when only the lamb has access to it (without the "bullying" of the ewe)

Objective / Process

By measuring a control and trial mob of ewes with lambs, we will understand across FarmLink members, weight/ weight gain (conversion) performance of the lambs by introducing the lambs to supplementary grain earlier while still on their dam (mother) using the creep feeding system vs lambs that have not. It is important that the lambs that don't have access to the creep feeding system will still have access to grain via trail feeding or feeders, but so will their dam. We shall also measure grain used in both mobs.

Sheepmatters to facilitate the Exclusion Lamb Feeder Trial project across the FarmLink region with 5 FarmLink member farms to be involved in the project from January 1st 2019.

Ewes needed to be split into two mobs. A mob not been excluded (control) from feeders/ trail feeding and a mob to use exclusion feeders (trial)

Table 1 - shows energy requirements of a breeding ewe and if her energy requirements were only met by being supplemented with barley.

ME Requirements to Maintain CS 3 – 50 kg Breeding Ewe		
Ewe Breeding Stage	MJ / ME Needed	Barley @ 12 ME x 90% DM = 10.8 Actual Energy
Dry	8.5	780 grams / hd / day
Pregnancy scanning	10.5	980 grams / hd / day
Lambing (twin)	14.8	1.37 kg / hd / day
20 Days Post Lamb Birth (twin)	26.8	2.45 kg / hd / day
50 Days Post Lamb Birth (twin)	20.6	1.9 kg / hd / day
65 Days Post Birth Lamb Birth (twin)	16.7	1.5 kg / hd / day

Facilitation

The project will be facilitated by Anthony Shepherd from Sheepmatters. Sheepmatters is an independent sheep advisory business based in Cootamundra. Sheepmatters will provide all expertise, hardware and software to collect data required for the project and will directly liaise with the growers and FarmLink. All data collected for the project will be managed by Sheepmatters, with a final report prepared for FarmLink by Sheepmatters.

Method

Active participants involved in the exclusion lamb feeder trial will all follow the same methodology to measure lamb weight/weight gain while they are on their dams (ewes) and through to weaning and post weaning in both the control mob (no exclusion) and trial mob (exclusion). Ewe's body weight and condition score to be measured at pre lamb treatments and weaning.

All sheep in the trial (ewes and lambs) will be tagged with an electronic ear tag (eID) so that all relevant information will be recorded against each individual animal in the 2 mobs. 200 ewes is the maximum mob size for each group (control and trial mobs). Both mobs must be twin or single ewes, or an equal mix of twin and single ewes. eID tags for the lambs to be donated by Shearwell Australia.

The ewes will be inducted with

their eID tag pre lambing with their genetic background, sire, pregnancy status, body weight and condition score recorded. Date of joining, percentage of rams and how long rams were in with ewes will also be recorded.

Ewes will be randomly chosen by Sheepmatters to be in the control or trial mob.

Lambing paddocks will be assessed by Sheepmatters at each visit for pasture type and KG/DM/ HA.

The lambs will be inducted with an eID tag at lamb marking with their body weight, sex recorded and age of dams.

Each grower involved will need to have a minimum of 2 feeders and will need portable sheep panels to section off one feeder. The creep panels will be supplied to the growers for the trial.

Feed source to be used in the trial to have a feed test done prior to ewes and lambs being introduced to the feeders.

All supplementary feed used to be recorded in type and amount used in trial and control mobs.

If ewes are lambing for a 6 week period and the majority of the ewes lamb at the end of the first cycle (17 to 22 days) and lamb marking is 2 weeks after the end of the 6 week lambing, then on average the majority of the lambs would be around that 36 to 42 days old (at lamb marking). As can be seen by the table above the daily energy required by the lactating ewe (twin) is on the decline from a high

at 20 days post birth of lamb of 26.8 Mega Joules of Metabolising Energy (MJ/ME). This energy requirement will rapidly continue to decline to weaning at around 65 days post birth of lamb to 16.7 MJ/ME.

The previous paragraph is important in understanding the energy demands of the ewe. Basically from day 50 post birth of lamb there is a rapid decline in energy required by the ewe, which affects production of milk. At this same stage the young developing lamb is increasing in energy required.

As an example a 15 kg lamb will need 4 MJ/ME per day, then at 20 kg the same lamb will need 5.2 MJ/ME per day and then at 25kg will need 6.2 MJ/ME. So in-fact there is this cross over in energy demand of the ewe and lamb.

In understanding the declining energy requirements of the ewe and the increasing energy requirements of the lamb is important in understanding when is the best time to introduce the creep feeding system to maximise the benefit of allowing the lambs access to the feeder but not the ewe.

The best time for lambs to have access to the excluded feeders is after lamb marking if lamb marking is 2 weeks after the end of lambing.

To get a successful introduction of lambs onto the excluded feeders, ewes and lambs must have access to the feeders at the end of lambing, so in-fact the ewes are "training" the lambs onto the feeder leading up to lamb marking.

This training method is often referred as "imprint feeding". Also by introducing the lamb on to the feeder at this early stage, the immature rumen of the lamb will start to develop the essential bacteria needed to breakdown hard feed. This is initially done by the creation of saliva (used to transport down hard feed), which has a high density of bacteria. While sucking on its dams milk, the lambs rumen remains "lazy", as milk is a bypass protein and doesn't need to be broken down like hard feed by the rumen. Therefore there is no environment to create any bacteria in the lamb's rumen while



Figure 1 - Creep feeding panels around a grain feeder

on milk. This initial imprint period is essential to create a "working" rumen in the lamb so when the exclusion feeding system is introduced their rumen has been prepared to break down the grain with their growing demand of energy required which as time goes on the ewe will not meet.

Individual Timetable

- Trial and Control mobs of ewes selected and inducted (pre lamb) – Sheepmatters and Grower
- Lambing paddocks identified and pasture assessed (Type and KG/DM/HA) - Sheepmatters
- Feeders introduced at end of lambing to both mobs - Grower
- Grower to record feed type, amount used for both mobs - Grower
- Lambs inducted with eID tag, weighed, sexed and identified to mob type (control or trial, and ewe mob age) at lamb marking – Sheepmatters
- Paddocks identified and pasture assessed at lamb marking (Type and KG/DM/HA) - Sheepmatters
- Creep panels introduced to trial mob feeder at lamb marking – Sheepmatters and Grower

- Weaning 4 weeks after lamb marking, both mobs brought in and lambs weighed. Ewes weighed and conditioned scored – Sheepmatters and Grower
- Paddocks identified and pasture assessed at weaning (Type and KG/DM/HA) - Sheepmatters
- 4 weeks post weaning, 3rd and final weight of lambs. If any sold before the 4 weeks they will be weighed before leaving farm – Sheepmatters and Grower
- Paddocks identified and pasture assessed at post weaning (Type and KG/DM/HA) – Sheepmatters

Summary

At the conclusion of the Exclusion Lamb Feeder Trial a complete report will be written up by Sheepmatters and presented to FarmLink. Sheepmatters will prepare and present the results of the trial at the FarmLink open Day.

