



FACT SHEET

JUNE 2017

ARTIFICIAL LAMB REARING – MANAGING ABOMASAL BLOAT

Abomasal bloat can occur when lambs are fed cow's milk or milk replacer. This fact sheet covers a novel Norwegian technique adapted by Waikato farmer Claire Bull, to reduce the chance of bloat in artificially reared lambs. The technique involves adding yoghurt to the milk and was tested and modified by veterinarian Jenny Burton.

WHAT IS ABOMASAL BLOAT?

The major cause of abomasal bloat is believed to be bacteria called *Sarcina ventriculi*. However, clostridial species such as *Cl. sordellii* and *Cl. fallax* can also cause bloat. Warm milk entering the abomasum provides these bacteria with an ideal substrate (lactose) for fermentation.

Excess gas is produced which results in the abomasum expanding like a balloon. The wall of the abomasum can rupture causing death or adjacent organs can be crushed, leading to death.

FARMER FINDS A SOLUTION

After suffering losses in lambs being fed milk replacer, Waikato farmer, Claire Bull, searched for a solution to bloat problems.

A web-search initiated discussions with Dr Synnove Vatn of the Norwegian School of Veterinary Science, and with Ingebret Sandhu, a Norwegian farmer. They suggested sarcina bacteria were responsible for abomasal bloat and that administering yoghurt-based milk replacer could reduce the chance of bloat.

Jenny Burton, a veterinarian who farms near Cambridge, has verified the success of the method and modified the process.

HOW THE NOVEL YOGHURT TREATMENT METHOD WORKS

Key points:

- Probiotics prevents pathogens multiplying by providing competition to bad bacteria.
- Prebiotics stimulate 'good bacteria'.

Yoghurt contains more probiotics (*Lactobacilli-sp.*) than milk. These 'good bacteria' provide a stable microenvironment that prevents pathogens from colonising and multiplying in the gut. They also improve immune function and can reduce scouring.

Yoghurt also contains prebiotics, which stimulate the growth of 'good' bacteria. Prebiotics are non-digestible food substances (usually carbohydrate plant products) that are fermented by micro-organisms in the gut.

SUMMARY OF THE TREATMENT PROCESS

- Add yoghurt to milk and heat (to ferment) to produce a novel milk mixture. Dilute with cold water.
- Feed this 'soured milk' mixture instead of normal milk (i.e. every milk feed).
- Feed the mixture cold, as warm milk with yoghurt will not effectively prevent abomasal bloat.
- Introduce mixture to lambs from five days of age; however it can be given to lambs from two days old.
- Have a gradual transition from feeding warm to cold milk.
- Effective under either ad lib or set feeding regimes (i.e. once/day).
- Doesn't add a lot of extra expense.



IDEAL EARLY FEEDING STRATEGY FOR ARTIFICIALLY REARED LAMBS

- Day 1 and 2 feed warm ewe or cow colostrum. Colostrum should be collected from the ewe or cow within 48 hours of her having given birth. The lamb should get up to five feeds (about 600 ml for a 4 kg lamb totalling 15% lamb body weight).
- On days 3 to 5 feed warm milk replacer as per usual.
- Introduce milk/yoghurt mixture on days 5 to 7, with a gradual transition from warm to cold feeding.

THE YOGHURT RECIPE

- Put three litres of warm water (40° c) in a nine litre bucket.
- Add 1 kg of calf milk powder. Mix with an electric stick blender (250 watts or more).
- Add 200 ml of acidophilus yoghurt. Mix. Cover with a lid or sheets of newspaper.
- Keep mixture warm for the next few hours. The easiest method is placing the bucket on a brewer's mat (cost \$50 for a 25-watt solid heating mat). If the air temperature is too cold the milk will take a long time to ferment. Another option is to put the bucket in an insulated box, e.g. a polystyrene box with a lid. A hottie is a cheap source of heat in the box.
- The yoghurt should set within 8-12 hours and may have a soft crust on top with some liquid at the bottom; or it may resemble thick commercial yoghurt.
- Top up with cold water to the 8 litre mark on the bucket and mix to feed directly to lambs.
- Depending on the number of lambs add the yoghurt mix to the daily ration at a rate of 1:7 (i.e. one part yoghurt to seven parts milk).

This yoghurt mix will keep in the fridge for up to seven days if sterile containers are used. Remove 200 ml of the liquid yoghurt as the starter for the next batch.

FEEDING A SMALL NUMBER OF LAMBS

If feeding only a handful of lambs, add 1 tablespoon of acidophilus yoghurt per 500ml of cow's milk or reconstituted powder just before feeding, and mix well.

TREATING A LAMB WITH ABOMASAL BLOAT

If a lamb does go down with bloat then 40-60 ml of acidophilus yoghurt (from the supermarket) either administered by stomach tube or drench gun 3x /day works a treat. Also keeping that lamb separated from others may make the lamb 'fret' a little causing it to walk around and bleat which is great to help relieve the gas buildup. Fresh water is essential too.



WHEY-BASED MILK POWDER MAY HELP

If abomasal bloat is a problem, consider feeding lambs on whey based milk replacer instead of whole milk. The whey based product should not promote abomasal bloat in artificially fed lambs and can help promote early rumen development if lambs have access to good quality lamb pellet or hard feed.

SUCCESS STORIES

Claire Bull reduced the incidence of abomasal bloat and scours to zero by feeding the mixture. Lamb deaths during artificial rearing were reduced from 25% to 3%. The Bulls' rear 100 lambs per season and give lambs meal, hay and water as well as the milk mixture.

ADDITIONAL INFORMATION AND ACKNOWLEDGEMENTS

Available to download via www.beeflambnz.com:

- Reviving newborn lambs' fact sheet
- Growing great lambs resource book

For further information, free phone Beef + Lamb New Zealand on 0800 BEEFLAMB (0800 233 352), email resources@beeflambnz.com

Beef + Lamb New Zealand would like to acknowledge Amanda Bowie for her assistance in reviewing this fact sheet and would like to thank Lynley Wyeth for her comments and suggestions based on her experience rearing large numbers of lambs.

Factsheets are made possible by sheep and beef farmer investment in the industry. Beef + Lamb New Zealand is not liable for any damage suffered as a result of reliance on the information contained in this document. Any reproduction is welcome provided you acknowledge Beef + Lamb New Zealand as the source.