

GRAZING MANAGEMENT AND ANIMAL HEALTH

Bruce Farquharson
Department of Animal Health
University of Sydney
Camden NSW 2570

Pasture is the basic diet of ruminants in Australia. Optimisation of production requires good quality pasture and good animal health. It is necessary in many circumstances to prepare pasture and to plan management for optimal production to be attained. This paper outlines some of the measures that can be taken to minimise the risk of some common diseases in animals grazing pasture.

INTERNAL PARASITISM

This is the most common disease of young ruminants and is affecting production on many properties by at least ten percent. Recent investigations of internal parasitism in sheep flocks has shown that the sheep have been drenched correctly but that pasture management recommendations have not been adhered to.

The life cycle of most species of internal parasites is about 42 days; 21 of these days are spent in the host and 19 to 20 days on pasture. Therefore, young sheep that have access to pasture 3 weeks after it has been contaminated with parasite eggs may ingest large numbers of infective larvae. The parasitic larvae, on hatching to the larval stage, ascend the grass blade and await ingestion by the host. Most infective larvae are on the lower 5 centimetres of the grass blade. Therefore, if sheep are made to graze pasture that is less than 5 centimetres in length then they may also ingest large numbers of parasitic larvae. Obviously it is preferable and recommended that weaners should be moved onto pasture that has minimal larval contamination. This pasture may be new pasture, regrowth after hay has been harvested, pasture which was previously grazed by adult non-lactating sheep, or has been grazed by another species such as cattle.

Many lambs are exposed to parasites at a very young age. Lambs that are not growing at a rate of 150 grams per day on a milk diet will endeavour to utilise pasture to supplement their inadequate diet. Unfortunately, when lambs ingest pasture they also take in large numbers of parasitic larvae. For a ewe to produce sufficient milk for her lamb to grow in excess of 150 grams per day, the pasture she is grazing should be at least 5 centimetres in length. It requires at least sixty days of spelling for pasture to grow up to 5 centimetres in most districts that lamb in the spring. Those properties that lamb at other times of the year may have greater problems in predicting pasture growth due to the variation in seasonal rainfall.

The ewe that has had adequate feed during pregnancy and lactation will produce most of her milk within the first 12 weeks of lactation. Therefore, it is difficult to perceive that any benefit can be gained from keeping lambs on their mothers for more than 12 weeks. From a parasite control point of view it is detrimental as lambs are ingesting large numbers of parasitic larvae that have hatched from the eggs excreted by the ewe in early lactation. This results in those lambs

shedding large numbers of eggs on to the pasture, as at a young age they have very little tolerance to parasites and their egg output is high.

HYPOMAGNESAEMIA

Hypomagnesaemia, or grass tetany, can devastate some beef herds in those years when blood magnesium concentrations are low. Cows have usually been subjected to stress from, for example, calving, lactation, cold weather, or feed shortage. This stress superimposed upon low blood magnesium concentrations can precipitate tetany, and, invariably, death. Prevention is the only viable method of avoiding severe losses.

Effective prevention programmes require planning and preparation. Cows at calving time require adequate pasture that will provide sufficient magnesium. Calving paddocks should be free of grazing animals for a time prior to calving that will allow a build of pasture at least 8 to 10 centimetres in length. It is also important that paddocks selected for calving should provide shelter from prevailing or seasonal winds. Pasture that is lush and with a reasonable clover content in many years will be low in magnesium. Therefore mature grass is preferred. If lush feed is all that is available then the cattle should be supplemented with hay.

Potassium will interfere with the absorption of magnesium from the diet. Cattle grazing lush feed require very little saliva for rumination and so tend to have high rumen potassium content. When large amounts of saliva are required for rumination the saliva contains high amounts of sodium and low amounts of potassium, resulting in a greater absorption of magnesium.

Overfat cows are highly susceptible to hypomagnesaemia. This is because immediately after calving they tend to live off body reserves. These body reserves, especially fat, will provide adequate energy for lactation and metabolism, but they do not provide any magnesium.

BLOAT

Bloat is seen in cattle that are grazing pastures with a high legume content. The cattle most commonly affected are those least experienced with bloat and those that are genetically predisposed to the condition. It can be a most unpredictable condition. When cattle are grazing pastures that are moderately dangerous certain management procedures can be utilised. Cattle can be fed hay, straw or other roughage prior to grazing vulnerable pasture, or strip grazing can be employed to eat out all the available pasture in that day.

When pastures are highly dangerous there are no grazing practices that will eliminate bloat. The addition of anti-foaming agents to the diet is necessary. The most difficult decision is when to start supplementation and also when to stop applying the anti-foaming agent.

NITRATE TOXICITY

Nitrate is present in many plants, crops, weeds and sometimes water supplies. It is when this nitrate is converted to nitrite in the rumen that it becomes toxic. Toxic amounts of nitrate may be present in cultivated plants during the active growth phase but will decline as the plant matures. Regrowth of plants after a drought or after the

application of herbicide can be a dangerous period. The application of nitrogen fertilizers may also increase the nitrate concentrations of some plants to render them potentially toxic. Feedstuffs conserved as hay or silage will have their nitrate content reduced.

Stock most susceptible to nitrate toxicity are hungry animals consuming large quantities of the nitrate-containing feed in a short time. Stock on a good quality ration appear to be able to tolerate higher levels of nitrate. Cattle that have been fed continuously on a nitrate pasture have been shown to adapt to higher concentrations of nitrate.

SUMMARY

The diet that many ruminants ingest can precipitate disease. Conversely many disease conditions can be avoided by careful management of pastures and manipulation of diet. In most cases this is preferable to the use of chemotherapeutic agents or supplements. However, the major requirement in the preparation of appropriate pastures is planning and preparation well before the anticipated conditions may occur.