



# GOAT HEALTH AND PRODUCTIVITY

MEAT & WOOL

NEW ZEALAND

June 2005

Just like other farmed livestock, goats need and benefit from good welfare and management practices. When integrating goats into the farming system, the approach should be to follow the same principles that would apply to the introduction of any new livestock type.

Goats tend to be affected by a similar range of diseases as are sheep, and both sheep and goats are common hosts for many of the infective agents. What is important is an understanding of the epidemiology of the disease, and the differences in grazing behaviour when planning the integrated management of goats and sheep.

## Disease and Immunity

Like other livestock, goats develop an immunity to infection. Because goats are prone to stress that can affect the level of immunity, special care needs to be taken with the management of goats to minimise any adverse effects on their health and welfare.

Goats require higher pasture heights to achieve their feed intake than do sheep (or cattle). When combined with their lower level of body fat and different fibre characteristics, this means that compared to sheep, they are especially susceptible around shearing and kidding. When animals are young or particularly susceptible because their natural immunity is low, additional protection can be provided by either vaccination or treatment programmes.

However, in the long term, a sound preventive management approach will be the basis for profitable goat farming.

A good disease management programme needs to:

- minimise risk when natural immunity is low,
- provide a low level of exposure to infection, to maintain the animals immune response
- limit the animals exposure to large levels of infection, such as internal parasite

## Management Effects

Grazing management and behaviour have a significant impact on the level of disease challenge that goats experience, and provides an important opportunity through which problems can be minimised.

Farming goats on an exclusive area at a high stocking rate should be avoided if health and management problems, particularly parasitism, are to be minimised. The preferable practice should be to:

- farm goats in conjunction with less susceptible livestock - cattle, dairy cows, deer, or sheep
- integrate the grazing programme, rotating through separate blocks, allowing adequate time between regrazing with susceptible livestock
- graze in conjunction with only cattle or deer where the aim is to minimise cross infection with sheep
- initially target a limit of 10 % of total stock units farmed as goats
- limit goats to a maximum of 40% of total stock units on the property, even when there is a high level of management experience

## Intestinal Parasites

Goats are infected by the same gastrointestinal parasites as sheep with *Haemonchus*, *Trichostrongylus* and *Ostertagia* being the most important species for both hosts. There is no evidence of any interchange of parasites between goats and cattle.

Compared to sheep, which develop a strong natural immunity around 12 months of age, goats have so far developed a lower level of immunity to gastrointestinal parasites. This can result in goats having greater populations of adult parasites with high egg output.

As the stocking rate of goats is increased, the problem is compounded because the level of infection to which goats are exposed increases, and often the level of nutritional stress under which they are grazing increases. In particular, when goats are required to graze down to low levels of pasture cover, they are forced to graze that part of the



# GOAT HEALTH AND PRODUCTIVITY

MEAT & WOOL

NEW ZEALAND

June 2005

sward with the greatest concentration of infective larvae. As well their nutritional stress is increased because goats are less well adapted to grazing to a low level.

As for sheep, anthelmintics are required for the treatment of parasitism in goats. However, there is a significant difference. Their physiology means that the level of active ingredient in their blood declines more rapidly after treatment than sheep. This has the potential to reduce the effectiveness of treatment and predispose to the development of anthelmintic resistance. Worms resistant to all three major drench families are now present on several goat farms in New Zealand.

Techniques that can improve the effectiveness of anthelmintic use include:

- splitting the dosage into two and administering 12 to 24 hours apart
- fasting goats 12 to 24 hours prior to drenching to slow down the passage through the rumen
- careful drenching technique to minimise closure of the oesophageal groove and the risk of anthelmintic by-passing the rumen

Faecal egg counts can provide a good indication of parasite burdens and can be used to test for drench resistance, but this should be done in conjunction with a veterinarian. Normally goat faeces are pelleted, and any change from this should be accompanied by an assessment of the parasite status of the mob.

Good practice should: -

- aim to minimise the risk of introducing anthelmintic resistant strains of parasites when purchasing goats, and
- then use grazing management to reduce dependence on anthelmintic treatment.

## Quarantine Systems

A system for isolating bought in goats, and treating them to eliminate internal parasites before introduction to the farm should be adopted. There is significant risk of introducing anthelmintic resistant strains of parasites whenever stock are moved between farms so this practice should be applied to all species of livestock farmed. The approach could

include:

- establishing a quarantine paddock for holding stock introduced to the farm, and which is only grazed by stock leaving the farm for slaughter
- becoming familiar with the flock and farm from history of the livestock vendor
- fasting the goats 12 to 24 hours before drenching with twice the dose rate of a combination drench, and following with
- a second dose with a combination drench after a further 24 hours

All dose rates should be calculated for the weight of the heaviest animal in the mob as underdosing is a significant cause of control failure and goat live weight is difficult to judge by eye.

At all times the goats must have access to drinking water.

Levamisole drenches should not be administered to stock that are under stress e.g. trucking, as under these conditions the safety margin can be reduced.

## Management Systems

Different approaches to management are required depending on the livestock species that goats are grazed with. Livestock policies and grazing management should be developed taking into account the following:

- (i) **Intensive farming systems, where goats and sheep are the predominant stock**
  - emphasis should be on minimising the level of larval challenge across the whole farm, and minimising nutritional stress on the goats
  - the goats must be managed differently to the sheep. The aim is to minimise nutritional stress on the goats, ensuring high residual grazing length.
  - goats should be grazed ahead of the sheep flock, in the descending priority order of kids, lambs, does and ewes
  - does can be considered equivalent to two tooth ewes in susceptibility to parasitism, and should be managed at least as favourably
  - faecal egg counts should be undertaken to monitor trends across all age groups

Farming sheep and goats exclusively, especially at



# GOAT HEALTH AND PRODUCTIVITY

MEAT & WOOL

NEW ZEALAND

June 2005

high stocking rates should be avoided. In these systems, the combination of disease susceptibility, similar patterns of feed demand and feed priority limit the likelihood that production will be sustainable.

(ii) **Less intensive systems where cattle or deer comprise 30% or more of total stock units.**

- options for using non-susceptible stock such as either cattle or deer to follow goat grazing provides management flexibility and assists pasture management.
- calving and cattle wintering blocks complement the winter and early spring feed requirements of goats.

### Lung Worm and Liver Fluke

Goats are susceptible to both lungworm and liver fluke, with treatment as for sheep

### External Parasites

The species of biting and sucking lice that affect goats do not affect sheep.

Treatment by shower dipping appears to provide the most effective control. Some sheep pour-on treatments depend on fibre grease for dispersal around the skin, and because this is absent in goat fibre, control can be variable. Cattle pour-on products may be more effective.

### Feet Problems

Goats are susceptible to footrot and footscald. There are differences between breeds in their susceptibility. In general, Angora and Boer goats are much more susceptible than cashmere-type goats, but there are also differences between strains within breeds.

As with sheep, culling infected animals is effective in eliminating repeat offenders. Selection for freedom from feet problems is effective however the heritability is relatively low and progress is not rapid.

There is some conflict between the goat grazing management required to achieve high animal growth rates, gastrointestinal parasite management, and feet problems. Higher post grazing pasture levels, especially in summer moist climates can accentuate scald and result in footrot. Selectively grazing drier areas and some preventive zinc sulphate treatment through footbathing can be beneficial.

### Trace Elements

There is good evidence to indicate that goats are either more susceptible to trace element deficiency, or require higher levels of trace elements, particularly iodine, selenium, copper and cobalt in their diet. Pregnant goats should be routinely supplemented with iodine, using either oral or injectable formulations. Selenium, copper and cobalt supplements are also essential in some regions of New Zealand and should be based on either knowledge of the soil type, previous history of the property or laboratory tests of trace element status on samples of blood or liver. Soil and/or plant tests are less reliable than animal tests when deciding whether supplementation is necessary.