

**Dr C.G. Mackintosh**  
Invermay Agricultural Centre  
Mosgiel

One of the most vulnerable periods in a deer's life is its first autumn-winter. At this time the calf has few energy reserves, poor body insulation, is susceptible to lungworm, has a high requirement for trace elements, has lost its colostral protection against common infections, experiences the stress of weaning and is susceptible to yersiniosis.

It is therefore important to plan a calf management programme to maintain good health. The following factors should be considered: weaning, good feeding, shelter, parasite control, vaccinations, trace elements, stockmanship.

## Weaning

It is important to weigh up the advantages and disadvantages of pre- and post-rut weaning. On intensively run properties there are management and animal health advantages to weaning before the rut. It allows the calves to be preferentially grazed on the best quality feed, they can be yarded regularly for drenching, weighing, vaccinating etc through the autumn, and the stress of weaning occurs at a time of year when it is warmer and there is usually good feed available. Pre-rut weaned calves will experience a slight check but catch up with post-rut weaned calves in the winter. The hinds benefit from a 2 or 3 week non-lactating period prior to mating and this helps to ensure the majority of hinds conceive early in the rut, giving a more concentrated calving period.

For less intensively run farms or where there is less subdivision of paddocks it may be easier to wean post-rut. The calves will not suffer a check in early autumn but care must be taken to ensure that the calves are not exposed to inclement weather immediately post-rut. These calves should receive anthelmintics just prior to the stags being put out and then again when the stag is changed or immediately post-rut.

## Good feeding

Calves, whether still suckling or weaned should be given the best quality feed possible in autumn-winter. Well fed calves are more resistant to disease and can cope much better with bad weather and other stresses. In winter anticipate storms by increasing the allowance to calves which often shelter for long periods during the height of the bad weather. If extra feed is not given then any prolonged fasting may reduce the calf's ability to maintain body heat and the slowing of its intestinal movements may make it more prone to infections such as yersiniosis.

## Shelter

Calves have little fat insulation, relatively thin

coats and are liable to excessive heat loss in cold windy conditions. Therefore, trees, shelter belts, gullies and paddocks facing away from prevailing winds all help to minimise this effect. Under extreme conditions weaners can be held in covered yards or barns. Good shelter can also reduce maintenance requirements up to 20% thus providing an economic incentive.

## Parasite Control

Lungworms are the most important parasites of deer and young calves in their first autumn are the most susceptible. Lungworm larvae on the pasture require warmth and moisture to become infectious for deer, and autumn conditions are usually ideal. Therefore it is very important to drench calves regularly from March through to June. The white drenches should ideally be given at 3 weekly intervals and Ivomec, which lasts longer in the body, at 5 weekly intervals. If it is a warm wet February and especially if a significant number of calves are born early in November it is advisable to start your drenching programme in February. If it is a mild winter then your programme should continue until July.

In the following spring/early summer it is advisable to give 1 or 2 drenches especially to Wapiti-type calves which may not develop immunity to lungworms as quickly as red deer calves.

Adults are relatively resistant to lungworms and need to be drenched infrequently or not at all depending on management, stocking rate etc. Their status can be checked by submitting faecal samples to the Animal Health Laboratory through your veterinarian.

## Vaccinations

Deer calves acquire some passive protection from colostrum and this lasts for 2-3 months. After this time they must make their own antibodies for protection. Therefore it is advisable to vaccinate deer calves in the autumn against the common clostridial infections (pulpy kidney, tetanus, etc) and also leptospirosis in areas where there is potential contact with cattle and pigs or their effluent. A vaccine against yersiniosis is currently being evaluated by Invermay and if it is effective it should be available next year. Optimal protection with the above vaccines requires 2 doses 4 weeks or so apart, i.e. give primary sensitising dose in March/April and a secondary booster in April/May. This should protect them for a year and they can be boosted annually, especially hinds so that good antibody levels are passed onto their calves in the colostrum.

## Trace elements

Rapidly growing calves have the greatest requirement for trace elements:

- Selenium deficiency may lead to poor growth rates or white muscle disease.
- Copper deficiency may lead to enzootic ataxia.
- Cobalt deficiency may lead to poor growth rates.

Most of New Zealand is deficient in Se but Copper and Cobalt vary throughout the country. Pasture and soil samples can be checked. Your local veterinarian can take samples from the animals and give advice on supplementation.

## Stockmanship

The most essential features of good stockmanship are:

- a. minimise stress
  - b. intelligent observation
  - c. prompt treatment
- a. Careful, calm handling of young deer and a gentle introduction to yards will pay dividends. Minimise stressful treatments, e.g. use oral Ivomec rather than injectible Ivomec (which stings) on young calves. At weaning do as few stressful procedures as possible. Weaning itself is a stress but pre-rut weaning occurs in warmer weather with good feed and it allows easier management of calves in the autumn. Post-rut weaning is perhaps less stressful to the calves but care must be taken that it does not coincide with bad weather or a shortage of good quality feed. Post-rut weaning also makes regular drenching difficult during the rut.
- b. Intelligent observation. Know your calves! Take time to watch them. Observation from a

distance will allow you to pick out any that are off-colour, scouring or coughing.

- c. Prompt treatment. Calves have few energy reserves. A few days without eating or of scouring will severely affect them.

## YERSINIOSIS

Yersiniosis, caused by a bacterium *Yersinia pseudotuberculosis*, is recognised by a dramatic watery green scour which often turns bloody. If you ever see calves with such a scour, yersiniosis is by far the most likely cause. Calves are usually off-colour and the scour can be seen around the tail and on the hocks. Prompt treatment is necessary otherwise the calf is likely to die in a day or two. Isolate affected animals and call your vet. Usually if you get an outbreak of yersiniosis it will only affect 5-10%, occasionally up to 20%. Blanket treatment of a group with antibiotic injections is recommended if the outbreak is severe enough.

Fortunately the majority of deer calves experience subclinical *Yersinia* infections and develop some immunity. The bacteria are usually present in the environment in winter and are spread on pasture or feedstuffs by rabbits, hares, cats, rats, mice, birds and domestic animals including pigs, goats, sheep and cattle. If deer calves are well fed, sheltered and unstressed at the time of exposure then the calves will usually not become visibly affected by the infection. If, however, they are stressed in some way, especially by bad weather, underfeeding or transportation then a proportion will develop the clinical disease and start scouring.

As mentioned before, I hope to have a vaccine available next year which will help to prevent the disease.