

## INTRODUCTION

Goats are kept in Wales to produce milk, meat or fibre; for showing; and as pets or companion animals. Gastrointestinal nematodes (worms) are a particular problem for goats due to their poor immunity. These parasites can cause severe losses in goats ranging from decreased feed utilisation to death. This leaflet focuses on methods of controlling internal parasites in goats.

## PARASITES

Amongst the gastrointestinal parasites of goats three species of nematodes (roundworm) are of particular importance; *Teladorsagia* (previously named *Ostertagia*), *Trichostrongyles* and *Haemonchus*. All species of nematodes have similar lifecycles during which there are two specific features of interest:

1. Transfer of infection from one final host to another rarely occurs. This is of significance for the control of internal parasites through pasture management. Some development usually takes place either in the faecal pat, or in a different species of animal (the intermediate host) before infection can take place.
2. Nematodes are able to arrest larval development within their host. This is seasonal and generally coincides with the onset of cold conditions. It is an adaptation which ensures the parasites' survival during periods of adversity. The maturation of these larvae will coincide with warm and moist environmental conditions suitable for their free-living development. The simultaneous maturation of larvae increases the contamination of the environment and can lead to clinical disease in the hosts.

## ANIMAL FACTORS

The disease caused by nematodes is usually due to the animal's inability to naturally overcome the adverse effects of the parasites. The simple presence of a parasite in an animal does not indicate that disease is present. Only when parasite loads become excessive, or when the animal's natural immunity to disease becomes suppressed, for example at a time of stress, will the animal show the symptoms of disease. Also young animals are most susceptible to infection.

## MANAGEMENT FACTORS

Problems caused by internal worms vary widely between animals dependent on a variety of factors. Crowding, overgrazing, and poor hygiene will tend to increase the severity of parasitism, and the extent of disease, in the hosts.

## SYMPTOMS

The symptoms shown by the affected goats will depend on the species, the numbers of nematodes present, and the susceptibility of the host to disease. Clinical signs of heavy infestation may vary from diarrhoea to sudden death. More common signs would be subtle decreases in production efficiency such as a decrease in milk yield, poor reproductive performance, unthrifty animals and poor feed utilisation. Animals demonstrating any of these signs should be examined by a veterinary surgeon.



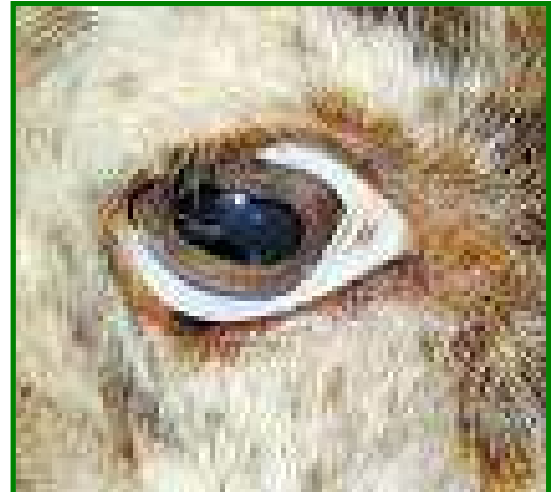
Figure 1: Angora goats grazing

## DIAGNOSIS AND TREATMENT:

Faecal egg counts are an effective and practical method of establishing the level of parasite load in an animal. The diagnosis of gastrointestinal parasitism and the necessity for treatment is best established by faecal egg counts carried out by your veterinary surgeon who will then be able to advise you on the correct use of anthelmintics (de-worming drugs). It is important to consult your vet over the correct dosing rates for goats as they are higher than those for sheep or cattle.

## CONTROL

The health status of the herd including gastrointestinal parasitism should be monitored regularly through the active use of a herd health plan drawn up in conjunction with your veterinary surgeon. As young animals are most susceptible to infection with parasites, de-worming of does before or at kidding is often an effective control strategy.



Pale mucous membranes may indicate anaemia caused by internal parasites

## PASTURE MANAGEMENT

Worm infection can be limited by grazing management and the maintenance of safe grazing. Safe grazing is pasture that has not been grazed by goats or sheep during the second half of the previous year, or pasture that has been left ungrazed until mid-July, by which time over-wintered larvae will have died off. Goat keepers should try to maintain safe grazing, particularly for kids.

## SCOPS

The current recommendations for the Sustainable Control of Parasites in Sheep (SCOPS) are also valid for goat owners. To avoid the development of anthelmintic resistance in your goats you should use the minimum number of anthelmintic treatments to control the worms on your holding. Where possible the dependency on anthelmintics should be reduced by good grazing management, faecal egg count monitoring, alternative forages and breeding for immunity. When it is necessary to use anthelmintics check that the drench gun is properly calibrated, weigh the heaviest goat and drench the whole group at this dose, change the type of anthelmintic annually and check the withdrawal period.

## TERMINOLOGY

The term helminth is used to refer to a nematode (roundworm), cestode (tapeworm), or trematode (fluke). Nematode – from the Greek *nema* “thread” and *-ode* “in the nature of”