



**Massey University**

# Veterinary Teaching Hospital

## PARASITES AND DEWORMING

Parasitic worms live in the intestines of horses and ponies. Small numbers of worms can be tolerated, causing no effect on well being. Larger worm burdens can cause a range of problems including ill thrift, diarrhoea, colic and death. Pasture management and drug administration assist the horse's immune system in keeping the intestinal population of worms under control. The immune response to worms is better in some horses and ponies than others and as such some are more susceptible to worm infestation.

### What types of worms are there and what problems do they cause?

1. Small redworms (Cyathostomins): These are now by far the commonest equine intestinal parasite. As the horse grazes it swallows the larvae of the small redworms, which can be found on blades of grass in contaminated pastures. The larvae colonise the lining of the large intestine where they develop into adults who lay eggs that are passed with the horse's droppings onto the pasture and develop into larvae to complete the life cycle. Larvae picked up in the autumn can go into hibernation in cysts in the intestine wall. These 'encysted larvae' can survive in this state for a considerable length of time, to develop into adult worms when the conditions become right for them, typically in the spring. They are fairly resistant to most wormers whilst in this 'hibernating' state. It is the emergence from the bowel wall of large numbers of encysted larvae that can result in severe diarrhoea and weight loss - a disease known as cyathostominosis.
2. Large redworms (Strongyles) (such as *Strongylus vulgaris*, *S. edentatus* and *S. equinus*): Once the scourge of horses, these worms are now very rare. Again, larvae are picked up and swallowed as the horse eats contaminated pasture. The lifecycle of these worms involves the migration of larvae through the blood vessels of the intestine and liver, where they can cause inflammation and obstruction of the blood vessels resulting in damage to the intestine supplied by the damaged vessel. Symptoms of infestation can include colic, ill thrift, and diarrhoea.
3. *Parascaris equorum*: these worms typically affect younger horses, particularly foals as a good immune response develops with age. Worm eggs are picked up and swallowed whilst grazing. The eggs develop into larvae that migrate through other organs such as the liver and lung before returning to the small intestine to develop into adults, when they can again complete their lifecycle by shedding eggs. Heavy infestation can cause stunted growth, ill thrift, lung damage, diarrhoea and colic due to intestinal obstruction.
4. *Strongyloides westeri*: this parasite usually affects the small intestine of young foals and is transmitted from the mare to the foal as larvae in the milk. Typically a strong immune response is developed keeping the infection under control as the foal ages, but where large doses of larvae are swallowed and foals are overcrowded or immunocompromised, severe diarrhoea can occur.
5. Tapeworms (*Anoplocephala perfoliata*): Probably the second most common equine intestinal parasite (after cyathostomes). These typically live at the junction between the small intestine and caecum. A mite, present on the pasture, acts as the intermediate host for the transmission of tapeworms, allowing it to complete its lifecycle. Recently it has become apparent that tapeworms are important causes of spasmodic colic in horses. Also, it can cause some other forms of more serious colic.
6. Bots (*Gasterophilus* spp.): These are common but generally harmless parasites. They are the larvae of the adult bot fly. The larvae develop in the stomach of horses and are passed in the droppings. They hatch and the adult flies lay eggs on the horses' coat, usually on the legs. The eggs are then swallowed when the horse licks its legs. Bots can result in mild ulceration of the stomach wall and have been reported to have caused stomach ruptures but are now rarely recognised to cause a problem.

7. Lungworm (*Dictyocaulus arnfieldi*): the larvae of this worm can be found in the lungs of horses that live with donkeys and can cause parasitic bronchitis and bronchopneumonia. This is a very rare problem.

How are worm infestations diagnosed?

Typical signs and symptoms (including ill-thrift, weight loss, colic, diarrhoea) and poor quality management (overcrowding, inadequate and contaminated grazing, and inadequate use of effective wormers) often suggest that intestinal parasitic problems are most likely. Laboratory investigations are the definitive method of diagnosis. Two types of tests are performed:-

1. Dropping samples are analysed to count the number of worm eggs per gram of faeces. This gives an indication of the types and number of adult worms present in the intestine who are producing eggs. False negative results can occur when the adult worms are not producing enough eggs to be detected and this can sometimes occur when the horse is very unwell. Dropping samples are most useful when collected from all or representative batches of horses on a routine and regular basis to monitor the success of a worm control programme. Generally worm egg counts below 50 eggs per gram (50 epg) are not concerning.

2. Although blood samples are often suggested to help diagnose parasitism, the results of most tests are non-specific and hard to interpret. There is, however, a specific blood test which has been developed to demonstrate tapeworm infestations.

### **How can I make sure my horses do not suffer from parasitic worms?**

Whether you own one horse or a whole studfarm, you should develop a worm control policy with advice from your veterinary surgeon. This will be based upon many factors including your geographical location, the types and ages of horses that you have, your stocking density and the frequency with which horses come and go at your premises. Effective parasite control depends upon both management of grazing to minimise worm egg and larval contamination and the use of wormers to remove parasites from the horses' intestines. One cannot be adequately effective without the other.

How can I best manage my available grazing?

Horses re-infest themselves by eating parasitic eggs or larvae by grazing contaminated pasture. Therefore:-

1. All horses grazing the pasture should be well wormed to reduce their output of parasitic eggs and larvae.
2. New arrivals should be treated with an effective wormer on arrival and should be stabled separately for 2-3 days before turning out on clean pasture.
3. The pasture should not be overcrowded so horses can avoid eating contaminated grass.
4. Droppings should be frequently and regularly picked up (twice weekly should suffice) and removed from the pasture to minimise contamination. If you have sufficient acreage, mechanical 'dropping pickers' (vacuum-type devices powered by small tractors), are particularly effective. This approach is extremely effective at reducing parasitism (perhaps more so than worming!) and should always be encouraged.
5. If possible paddocks should be regularly grazed with other species such as cattle or sheep, in rotation and then rested. These animals are not affected by equine parasites, their parasites do not affect horses, they graze more evenly than horses and their droppings stimulate good grass growth.