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Parasite Control in Horses

How Do Worms Cause Disease?

All horses host a wide range of internal parasites. Parasites live mostly in the horse's large intestine with free-living larval stages on pasture, which have hatched from eggs passed in horse's faeces. These infective larvae are swallowed while the horse grazes. Certain larvae can survive over winter on pasture. Immature worms inside the horse undergo a period of migration and hibernation before maturation, during which time they are extremely difficult to eliminate. At low levels of infection, parasitic worms are well tolerated and cause no detectable harm. However, a small proportion of horses are very susceptible to worm infection and develop large burdens. These horses are at risk of suffering from diseases, such as colic, weight loss, diarrhoea and death. It is widely accepted that 90% of all medical colic cases may have parasitism as an initiating or underlying cause. Parasites are unevenly distributed throughout a population of horses. A simple way of thinking of this is that 80% of the parasites live in 20% of the horses. Also, animals are not equally susceptible and immunity plays a role in this. The practical solution to this phenomenon is that heavily infected animals can be identified with diagnostic test, and treatment efforts concentrated on these high risk animals.

Methods of Parasite Control

For effective parasite control, a combination of both pasture management and worming drugs must be put into action. There is no single blanket recommended worming protocol that is suitable for all circumstances. Studs, livery yards, competition yards, dealers and single or small groups of horses may require different protocols and this should be discussed individually with your vet.

Problems of Parasite Control

- Resistance to Worming drugs: This is a worrying situation because it means that in the future some drugs currently available to us will be ineffective. There is currently widespread resistance to benzimidazoles, developing resistance to pyrantel, but not yet to ivermectin/moxidectin. De-worming drugs that are not supplied by vets may have confusing or inaccurate information regarding dosing information and timing interval.
- Worming drugs are not all the same: To control different parasites, different drugs must be used at the appropriate times.
- Livery yards with many owners: If grazing is shared and worming control is not followed as a group, it is likely that horses will become infected. Small, overgrazed paddocks lead to close-cropped grass and horses grazing close to piles of dung. New horses with unknown worming histories are a particular threat.

- Cyathostomins living in the gut wall: Larvae in the gut wall are highly resistant to worming drugs and present, no diagnostic test is available to detect encysted parasites. Research is underway to study this.

Implementation of a Worming Programme: Pasture Hygiene.

The principle is to prevent pasture contamination by high stocking densities, heavily grazed pasture, use of the same pasture by multiple horses, presence of horses with high parasite burdens, presence of young horses which tend to be more heavily infected, and warm damp weather. Young horses are most vulnerable and should not graze with adults; they should also have first choice of 'clean' pasture. **Regular removal of manure from the field is the most effective way to control parasites** as this will remove the source of the infective larvae. Pasture rotation, mixed species grazing (cattle and sheep), and separating age groups are all measures to decrease pasture contamination.

Worming Drugs

The use of drugs to suppress faecal egg output has been the mainstay of control for years. Worming drugs (anthelmintics) can be used in a number of different ways including:

1. Interval dosing – administration of specific drug at regular time intervals. Many horse owners use drugs at inappropriate intervals and the overuse of drugs increases the speed at which parasites develop resistance.
2. Strategic dosing – use of worming drugs at specific times of year to disrupt seasonal cycle of transmission.
3. Targeted strategic dosing – as above but all horses have faecal worm egg counts (WECs) prior to dosing. If >200 epg (eggs per gram) treatment is then targeted at these animals. Anti-tapeworm treatment can be targeted by a blood test using tapeworm antibody ELISA test and treatment given to infected animals. Diagnostic limitations mean mucosal larval parasites are not detected by WECs so this regime should include a larvicidal dose for horses.

Worm Egg Counts (WEC's)

Faecal worm egg counts enable routine monitoring of parasite status. This method reduces the frequency and cost of de-worming and helps reduce the development of resistance. Tapeworm antibody tests involve a blood test and high levels of antibodies are seen in horses with significant tapeworm burdens. Horses with high tapeworm burdens are 20 times more likely to suffer colic episodes.

The three key elements in a parasite control programme are:

1. Anthelmintics used appropriately to decrease faecal worm egg count
2. Good pasture management
3. Monitor parasite transmission by regular WEC's and tapeworm ELISA's.

Please contact us on **01223 760535** or email cambridgeequine@vet.cam.ac.uk to discuss parasite control with your vet and the development of an effective parasite control programme.
