

ADVICE ON
Worm Control

The
British
Horse
Society



Worming

The importance of implementing an appropriate worming programme for your horse should not be underestimated. Parasitic worms can adversely affect the health and well-being of horses and ponies of all ages. These internal parasites can do irreversible damage to the gut and other organs and be responsible for poor body condition, colic and, in serious cases, fatalities.

Internal Parasites

There are numerous types of worm that use the horse as a host during their lifecycle. The degree of damage to the horse depends on the type of worm, its lifecycle (whether it remains inside the gut or migrates round the body), the number of worms present and the horse's health and immune status.

- **Small Redworm (Cyathostomes)**



Small redworms are the most common internal parasite of the horse and can account for at least 90 percent of the horse's worm burden. Some horses may be infected with as many as a million of these worms. The normal lifecycle takes place over a few weeks from ingestion of larvae to adult egg-laying worms. However, these worms have the ability to hibernate within the gut wall in small cysts. At this stage the worms become problematic as there are very few wormers that will kill them. The emergence of large numbers of larvae all at the same time (usually during the late winter) can cause huge damage to the gut lining, potentially

causing loss of condition, diarrhoea, colic and sometimes even death.

- **Large Redworm (Strongyles)**



Large redworms are potentially the most dangerous internal parasite of horses. However, due to improved worming regimes and effective treatments, this parasite is not as common as it used to be. The larval stage of the lifecycle is of most concern, because they migrate through blood vessels to develop within the major artery supplying blood to the intestinal tract. This migration not only damages the blood vessel walls but can also lead to blood clots and a weakening of the blood vessels. Disruption to the blood supply can cause colic and, in rare cases, death.

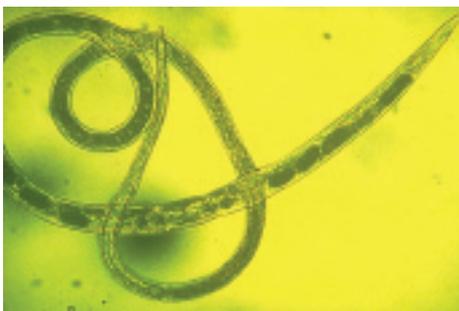
- **Large Roundworms (Ascarids)**

Adult large roundworms can reach up to 50cm in length. Large roundworms typically only affect foals and young horses. Adult horses are not normally affected as they develop immunity with age. Adult ascarids and migrating larvae can be problematic to



foals and young horses, causing poor growth, digestive and respiratory problems and occasional fatalities. The horse will often develop a cough as the larvae migrate from the lungs to the small intestine. The eggs of large roundworms can survive in the soil and in stables for many years. Young horses become infected by ingesting these eggs from the pasture and their surroundings.

- **Threadworms**



During the first few weeks of life foals are susceptible to this very small worm which can cause diarrhoea, loss of appetite, anaemia and dullness. It is recommended that foals are routinely wormed at six-eight weeks old, but earlier treatment (from four weeks old) may be required for threadworms. Natural immunity usually develops by the age of six months.

- **Pinworms**

Female pinworms migrate to the horse's rectum and lay their eggs on the skin around the outside of the anus. This can cause



intense irritation, provoking the horse to scratch and rub the tail area. Persistent scratching can result in loss of hair from the dock and the development of sores and open wounds. The eggs are then shed onto the pasture or bedding as they become dislodged by the horse's droppings.

- **Lungworms**

Donkeys are thought to be the natural host of this parasite but horses can also be infected with lungworms. This infection is likely to occur when horses share the same grazing as donkeys. Donkeys can tolerate a large infestation of lungworms without any obvious signs, whereas infected horses show obvious respiratory signs, such as persistent coughing. Horses and donkeys can live together safely as long as an appropriate worming programme is in place.

- **Tapeworm**



Tapeworms are located in the horse's gut and congregate around the narrow junction of the small and large intestine. Here, adult

tapeworms attach in clusters to the lining of the gut where they release their eggs. Tapeworms can grow to 8cm in length and 1.5cm wide. Severe tapeworm infections can cause digestive disturbances, loss of condition, colic and death.

- **Bots**



Bot flies are a common irritant to grazing horses during the summer months. The female flies lay their small, sticky yellow eggs on the horse's coat; typically on the forelegs, shoulder or abdomen. As the horse licks itself, or is groomed by another horse, the eggs hatch and the larvae are transferred into the horse's mouth, where they burrow into the tissues of the tongue and mouth before being swallowed. Once in the stomach the larvae attach themselves to the gut lining to continue their development through the winter. The 'bots' eventually detach to continue unharmed through the digestive system to be passed out in the horse's droppings. After pupating in the ground they emerge as a new generation of flies. Daily removal of the eggs from your horse with a bot knife will help disrupt the life cycle.

Worm Control

Effective worm control aims to prevent worms from completing their lifecycle and thus prevent further pasture contamination. Worming programmes have evolved over the years and there are now a number of strategies that horse owners can use to help maintain their horse's health and performance. Routine blanket use of anthelmintics (wormers) is no longer recommended as this may encourage the development of drug resistance.

What exactly is Resistance?

Resistance is when a greater frequency of individuals in a parasite population, usually affected by a dose or concentration of compound, are no longer affected. Once resistance is present in a worm population, the health, welfare and performance of horses infested with resistant worms will be compromised. For this reason it is essential that your horse is dosed accurately according to bodyweight.

Using too low a dose of wormer may speed up the development of resistance. On the other hand, frequent, unnecessary worming may also increase the potential for development of resistance. The key to reducing the likelihood of resistance is choosing the right wormer, then giving it at the correct dose and time.

Worm egg counts have an important role in this, as they help to identify when your horse actually needs to be wormed. Use worm egg counts as part of a **SMART** worming programme. **S**imply **M**onitor and **A**ssess the **R**isk and **T**reat accordingly.

Pasture Management

A rigorous pasture management programme will make a major contribution to effective worm control.

- Do not overstock pastures. As a guide the BHS recommend a ratio of two horses per hectare on permanent grazing (1-1.5 acres per horse). Overstocking results in pasture with a high concentration of droppings and therefore great potential to infect the grazing animal if these droppings contain parasites or their eggs. Overgrazed paddocks can become 'horse-sick' and horses may be forced to graze closer to droppings increasing the risk of ingesting higher levels of worm larvae.



- Horse manure should not be used as a fertiliser for equine pastures due to the risk of spreading parasites and making the grass unpalatable.
- Ideally droppings should be removed from the pasture at least twice a week. This will help prevent the development of latrine areas and removes the source of new worm eggs.
- Where possible, sub-divide the grazing area into smaller paddocks and rotate the horses around the paddocks at regular intervals. To be effective, it is important that all horses grazing together in the paddocks are on the same worm control strategy (this does not necessarily mean that all horses are treated at the same time with the same product).
- Harrowing rested pasture can be useful in dry conditions only, as it exposes the larvae which dry out and die.
- From late summer until the following spring, allowing pasture to rest where possible aids worm control as the majority of larvae on the pasture will die-off over the winter. However, certain species such as large roundworm eggs, can survive in the soil for years.
- Once horses have been wormed it is best not to move them immediately to a new pasture.
- Once feasible, graze the pasture with cattle or sheep. The livestock will happily eat grass that horses consider unpalatable (such as latrine areas) and in the process ingest equine worm larvae which will not survive in the cattle or sheep host. It is important to remember that the livestock will also need a suitable worm control programme for their own welfare.

Types of Wormer

Wormers are grouped together depending on their active ingredients which target specific parasites.

The main groups include:

Ivermectin

- Kills large redworms, small redworms, pinworms, large roundworms, lungworms, intestinal and neck threadworms and stomach worms
- Dosing interval 8-10 weeks
- Single dose in May, July and December
- Also highly effectively against bots

Praziquantel

- Kills tapeworms
- No known resistance in the UK

Ivermectin + praziquantel

- All the benefits of ivermectin activity with added tapeworm control
- Single dose in Spring and Autumn (March/April and September/October) for roundworms and tapeworms

Moxidectin

- Kills small redworm including encysted stages, large redworm, pinworms, large roundworms, intestinal threadworms, stomach worms and bots
- Dosing interval for small redworm 13 weeks

- Single dose in winter to treat encysted small redworms

Pyrantel

- Kills large redworms, small redworms, large roundworm and pinworms. Tapeworms at elevated dose rate
- Dosing interval for strongyles every four-six weeks during summer and autumn at pasture, every four weeks for foals from one to eight months old

Fenbendazole

- Kills large redworms, small redworms including encysted stages at elevated dose rates, pinworms, large roundworm, intestinal threadworms at elevated doses
- Five-day course can be used against inhibited mucosal stages of small redworms
- Dosing interval for strongyles six-eight weeks (if no benzimidazole resistance)
- There is widespread worm resistance to this wormer group against small redworms

Worm Egg Counts

To minimise the risk of worm resistance, a targeted approach to the use of anthelmintics (wormers) is now recommended via the use of Worm Egg Counts (WECs). WECs are used to identify horses with high worm burdens. Horses with a WECs of more than 200epg (eggs per gram of faeces) should be treated with an appropriate anthelmintic. Those with lower WECs do not require treatment, preventing the unnecessary and ineffective use of wormers. Performing WECs regularly aids in your understanding of your horse's worm burden through the seasons.

You can purchase a Worm Egg Count kit from one of the main testing laboratories or from



your local retailer. Many veterinary practices will also offer the service. Once you have your kit, performing the WEC is simple. It should be done at 8-10 week intervals after worming (depending on the product) or at similar intervals if no worming has been required. Simply collect a small sample of fresh dung, double-bag it and place this in the envelope provided and post that day. It is important that it is fresh as the older the sample, the less reliable the results will be. If you are unable to post your sample the same day, place it in the fridge until posting.

The sample will be analysed and the results will be sent to you, along with recommendations for the next course of action: worm or wait and retest.

Unfortunately there is no diagnostic test as yet for encysted redworm, so if you suspect an infection you may need to treat accordingly.

Additionally, tapeworm eggs do not show up reliably using this method, so you should still treat for this parasite or get your vet to perform a blood test which will give information on tapeworm burden.

Worming Dosing Strategies

There are a number of worming strategies in common use.

Interval dosing

The administration of specific anthelmintic treatments at set intervals throughout the year. For example:

During spring (March) use an appropriate wormer to target routine worms and tapeworms.

For summer (May and July) routine worming, use an appropriate wormer to target routine worms.

In autumn (October) use an appropriate wormer to treat for routine worms and tapeworms.

For winter, treat routine worms and bots, and if needed also treat for encysted small redworms. The main disadvantage of this strategy is that horses may be dosed unnecessarily which may encourage the development of resistance.

Strategic dosing

This is the administration of broad-spectrum anthelmintic treatment at specific times of year. This helps to disrupt the seasonal cycle and transmission of parasites by reducing parasite egg output by horses and so prevents the build-up of larvae on the pasture.

Given the seasonality of horse parasites, dosing

three times a year – once in the spring, in the middle of the grazing season and again in the autumn – should be effective at reducing the levels of infection.

However, problems can arise as a result of abnormal weather patterns. For example, wet, warm summers can lead to early or late peak pasture larval burdens. Worm Egg Counts can help determine the need to treat.

Targeted strategic dosing based on Worm Egg Counts

This is the strategy best suited to minimise the problem of resistance to wormers. A Worm Egg Count (WEC) is performed prior to potential dosing, and if the count is greater than 200epg, anthelmintic treatment is required. Worm Egg Counts should be performed every 8-10 weeks.

Diagnostic limitations mean that negative WECs do not guarantee a horse is parasite-free as, for example, a horse may be harbouring immature parasites which have not yet started to produce eggs. Also, small redworms developing in the gut wall cannot be detected by this method.

Tapeworms are not detected by routine Worm Egg Counts, so a tapeworm antibody ELISA (blood) test should be carried out in Spring and Autumn.

Where to Buy Wormers

Wormers can be purchased from veterinary surgeons or from saddlers and merchants whose premises are licensed by the Pharmaceutical Society of Great Britain. The Internet also provides the opportunity to buy wormers. The wormers should be purchased from a reliable site.

Administration of Wormer

The horse will first need to be weighed in order to determine the amount of wormer they require. This can be done using a weight tape when a weighbridge is not available. If you are using oral syringes, identify the correct dose then remove the syringe cap. Stand at the side of your horse, in front of their shoulder, and open your horse's mouth. Guide the syringe into the corner of the horse's mouth and aim it toward the back of the tongue before dispensing the wormer (do not dispense the wormer at the corner or front of the mouth where the horse may just spit it out). It may be necessary to raise the horse's head briefly to ensure the wormer is swallowed. If there is any paste left, do not rub this into or around the horse's lips.

If administering wormers in the horse's feed, mix the dose into part of the normal ration and if necessary add succulents to tempt the horse. Once the wormer has been eaten, the remaining ration can be fed.



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