

## Health and welfare information about your horse from Vetlexicon Equis.



### Worms - what are they?

Every horse owner has heard about the danger of worms but without some knowledge it is hard to understand the full impact of a worm infestation (or burden). Intestinal worms can seriously damage your horse and in some circumstances can kill it, even if the burden is not life-threatening your horse may lose condition. Implementing an effective worm control programme is one the greatest responsibilities of a horse owner.

### What are worms?

Worms are parasites which means that they live within, and take nourishment from the host (your horse).

The most common types of internal parasites are small and large redworm, large roundworm, tapeworms and the insect larvae, bots. Of the parasites that affect your horse, the most common and harmful parasite today is the small redworm.

### Small and large redworms (strongyles/cyathostomes)

- **Stage I:** Eggs are passed in the horse's faeces and contaminate the pasture. The eggs develop into infective larvae - with warmer and wetter winters infective larvae are found on pasture late in the year. The infective larvae migrate out onto the grass when it is damp. The grazing horse eats the larvae on the contaminated grass.
- **Stage II:**
  - Small redworm - ingested larvae burrow into the gut wall and encyst. These encysted larvae may emerge from the gut wall and develop into adults in the gut within a few weeks. However, the majority may become dormant, known as inhibited encysted larvae, only to emerge '*en masse*' from the gut wall without warning typically in late winter/early spring. This mass emergence, known as larval cyathostomiasis is potentially fatal. The presence of the small redworm larvae in the horse's gut wall causes inflammation and damage, and horses may lose condition, particularly young horses.
  - Large redworm - larvae burrow through the gut wall and migrate through the internal organs for 6-10 months causing irritation and damage, which can result in attacks of colic. They then return to the gut where they mature.
- **Stage III:** Adult worms live in the gut where the females can produce thousands of eggs per day.

### Large roundworms (ascarids)

- **Stage I:** Eggs are passed in the faeces of young horses as horses develop immunity to this worm at around 18-months of age. They develop to infective larvae in the eggs in the summer. The eggs are very sticky so attach to grass, hay, walls, etc. The eggs have very thick shells and so the larvae in the eggs can remain alive for a year or even 2-3 years.
- **Stage II:** When eaten, the larvae hatch from the eggs, burrow through the gut wall and migrate through the internal organs to return to the gut. Large numbers may cause inflammation and damage when they migrate.
- **Stage III:** The adults are very large and use the digested food of the horse causing the horse to lose condition and if in large numbers can occasionally block the gut.

### Tapeworms

- **Stage I:** Segments containing eggs are passed in the faeces. The eggs are eaten by an intermediate host (a mite living in the soil and on the grass, hay and straw).
- **Stage II:** Larvae develop inside the mites which are eaten by horses as they feed. The larvae develop into adult worms in the horse's large bowel.
- **Stage III:** Adults live in the ileo-caecal junction of the gut where they attach to the gut wall by suckers. They cause inflammation and decreased gut motility which can

lead to an increased risk of colic due to gut obstruction or even rupture.

## Bots

- **Stage I:** Adult flies lay yellow-coloured eggs on the chest, forelegs, throat and nose of the horse. Eggs are laid in the summer.
- **Stage II:** When the horse grooms, the larvae hatch, attach to the tongue and lips, and enter the mouth. The eggs can stay on the coat for a few months waiting for the stimulus to hatch. Some eggs laid around the head are different in that they hatch spontaneously and migrate into the mouth. The larvae migrate to the stomach and duodenum, causing irritation, digestive problems and possibly gut obstruction, but they are not common causes of ill health or disease. After around 8-10 months, they are passed in the faeces. They burrow into the ground to pupate.
- **Stage III:** Bot flies emerge from the ground to lay eggs in the summer.

## How do I know if my horse has worms?

Even a horse that appears to be in good health may have worms causing internal damage. Worm infestations are most commonly found in young and older horses. Infestation can result in:

- Loss of condition, or ill thrift, typically seen as a 'ribby horse'.
- Lethargy.
- Weight loss.
- Diarrhoea.
- Colic.
- Loss of appetite.
- Dull, rough haircoat.

If you suspect that your horse has worms, your vet needs to confirm the diagnosis and then identify the type of worms so that the most effective treatment can be used. There are two methods your vet will use, faecal egg count and blood testing.

## How can my horse be tested for worms?

## Faecal egg count

This method is extremely useful as it identifies the most common types (small and large redworm, and large roundworm) of parasite, and gives an indication of the number of adult worms in the intestine which, in turn, gives a measure of the degree of pasture contamination. A very fresh sample of faeces should be placed in a clean plastic bag and taken to your vet. The sample should be delivered within a few hours of collection, if delivery is delayed the sample should be kept cold to prevent the eggs from hatching. Your vet will arrange for the sample to be tested. The count is given as 'eggs per gram' (EPG).

For example, if the analysis gives a count of 250 eggs per gram, and a horse produces approximately 4.5 kg (4500 g) of faeces per day,  $250 \times 4500 = 1,125,000$  eggs per day being shed onto pasture.

This technique gives a rough estimate of the number of adult worms present, and therefore consequences of infections with adult redworms or large roundworms. Analysis only sometimes recognises tapeworms, due to the sporadic release of eggs by tapeworm, and will not indicate the existence of bots.

## Blood testing

It is possible for a horse to have a heavy larval infestation but have very low faecal egg counts. This is because the larval stages can remain in the tissues of the body and gut for several months, eg overwinter. During this time they do not produce eggs. A blood test helps to detect whether a horse is infected with larvae. It measures certain chemicals in the blood produced by inflammatory responses to the migration of the larvae. Tapeworm can also be detected via a blood test; your vet will take a blood sample which is analysed in the laboratory using an ELISA test, which detects tapeworm antibodies and gives some indication of the severity of an infection.

## Saliva test

Testing for tapeworm can also be undertaken using a simple saliva test.

The Equisal® Tapeworm Test uses equine saliva to test for *Anoplocephala perfoliata* (tapeworm) antibodies, and is designed to be used by owners to determine tapeworm burden. It allows assessment of tapeworm burden prior to deciding whether anthelmintic treatment is required, as well as in the investigation of acute and chronic colic cases. The best time to carry out the first test is 4 months after worming for tapeworm.

The test is simple and minimally invasive to perform, and allows formation of a targeted/selective worming program, limiting unnecessary use of anthelmintics and slowing the development of parasite resistance.

Saliva from the tongue is collected on a swab - on average it takes 10-20 seconds for the indicator on the swab to change colour (pink) confirming collection of the sample. The swab is then placed in the transport container supplied, and for best results posted to the laboratory on the day of sampling. Routine (6 monthly) testing of tapeworm burden is advised as part of a parasite control programme.

### **How does my horse get worms?**

Your horse will get worms if it is turned out with horses or donkeys that have worms, because the pasture will be contaminated with eggs and larvae. Your horse will eat these as it grazes. Pastures can remain contaminated for a considerable time, even a year or more, after horses are removed so even if your horse is turned out alone, it could still get worms from the pasture or contaminated hay.

Bots can affect any horse as the flies can move from field to field although they do not usually fly between stables - the larvae in the stomach of the horse can be carried between stables though. Similarly, if your horse has worms, it can infect other horses grazing in the same field. Horses most at risk from heavy worm infestations are young or older animals or those on multi-horse premises, eg livery yards with grazing paddocks.

Do not forget that if your horse goes to another stables, for a show or rally, it could get worms if it grazes there. Similarly, any horse from another stables visiting yours, could be leaving worms in the faeces it deposits, so pick them up and dispose of them.