

Tough on worms, not intestines!

New study finds moxidectin is tough on worms, not intestines!

Just look at a horse cross-eyed, and the next thing you know, it will be down with colic! Well, perhaps that is a bit of an exaggeration, but horses are pretty sensitive when it comes to their digestive tracts, and horse owners are rightly concerned about anything that might contribute to the onset of an episode of colic. Risk factors known to be related to the incidence of intestinal disorders include age, sex, breed, and nutritional status, and worm burden – not to mention other factors that are just being discovered!

Although horses may be adversely affected by large numbers of many different worm species, the most harmful and life-threatening equine parasite today is the small redworm (“cyathostomins”)¹. Over 90% of a horse’s small redworm burden can be attributed to the larvae². The larvae of this worm burrow into the mucosa of the horse’s gut wall and become encysted – and up to 85% of these may also become “inhibited”², which means that they can remain dormant in their cysts in the gut wall for many months or even years. A major problem can occur when these encysted inhibited larvae develop and all emerge at the same time from the horse’s gut wall. The related disease syndrome is known as “larval cyathostominosis”, which can cause a severe colic, with up to 50% of cases ending in death³.

Due to the seriousness of this disease, it is essential that a horse’s worm control programme specifically targets the inhibited and developing encysted small redworm larval stages. There are only two active ingredients which have been proven to control both of these stages: fenbendazole (a member of the benzimidazole chemical family) and moxidectin (a member of the newer, macrocyclic lactone chemical family). It is important to note that no products containing other members of either of these chemical families are licensed to control the inhibited and developing encysted stages of small redworm larvae: only products containing moxidectin or fenbendazole will do the job.

So the good news is that there are

products available that are proven to help prevent the potentially devastating larval cyathostominosis – but there are also other aspects to consider when deciding which product to use. Worm resistance, treatment regime, and clinical effects post-treatment are important considerations when making a decision to use a product containing either fenbendazole or moxidectin.

Worm resistance: although there is no confirmed small redworm resistance to moxidectin in horses, resistance to benzimidazoles is now widespread in the UK⁴. Therefore, before using fenbendazole, you should ensure that you do not have fenbendazole-resistant small redworms on your yard.

Treatment regime: for the treatment and control of encysted and inhibited small redworms, it is recommended that fenbendazole be administered daily for a period of 5 consecutive days. Moxidectin treats and controls encysted developing and inhibited small redworm larval stages with one treatment; i.e. a single standard dose. For both active ingredients, it is recommended that treatment be given twice a year, in the autumn and winter.

Clinical effects: recent research⁵ has evaluated possible adverse effects upon the gut wall of small redworm-infected ponies wormed with fenbendazole and moxidectin. Scientists have found that either treatment was effective against these encysted small redworms; however, they observed that the gut walls of the ponies become inflamed when they are treated with a five-day course of fenbendazole.

This inflammation began about 4 days after the end of treatment, and by day 14 post-treatment, this inflammation was frequently accompanied by ulcerations. The inflammation did not appear to be caused directly by the fenbendazole, but by toxins excreted by dying and dead larvae⁶. Similarly infected ponies treated with moxidectin did not show an inflammatory reaction. This was because, different from the fenbendazole treatment, which can also cause affected larvae to emerge into the lumen (inner “tube”) of the intestine⁷, moxidectin caused the larvae to disintegrate in the gut wall

and simply be resorbed (dissolved and absorbed) without causing severe inflammation of the gut wall.

The conclusion of this study was that whilst both fenbendazole and moxidectin were effective against encysted larvae of small redworms, there may be different clinical consequences.

Unlike the effect of moxidectin, the killing of encysted small redworm larvae with fenbendazole was associated with severe tissue damage, which may clinically mirror the situation caused by the mass emergence of encysted larvae. In other words, the effects of fenbendazole may actually mimic larval cyathostominosis – the very condition for which the worming programme may be targeted! Although no clinical signs were exhibited by any of the ponies in this study, and indeed worming is generally not associated with colic, the importance of maintaining a healthy gut wall cannot be underestimated.

When choosing a wormer, make sure that the product you use has a registered licence claim against both the inhibited and developing encysted small redworm larval stages – i.e. containing the active ingredient fenbendazole or moxidectin. And when deciding which one of these actives will be most appropriate for your own situation, be sure that you consider your horse’s worm resistance status, your treatment programme, and the potential effect upon your horse’s gut wall.

EQUEST and EQUEST PRAMOX, both of which contain the unique active ingredient moxidectin, are the only equine anthelmintics licensed to control the inhibited and developing encysted larval stages of small redworm with *one single* standard dose, with no confirmed resistance in horses the UK, and no significant tissue damage to your horse’s gut wall. EQUEST and EQUEST PRAMOX – helping you to keep your horse healthy.

1. Love S et al. *Veterinary Parasitology* (1999) 85: 113 – 122.
2. Bairden K et al. *Veterinary Record* (2001) 148: 138-141.
3. Proudman C et al. *In Practice* (2000) 90-97.
4. Bairden K et al. *Veterinary Record* (2006) 766-767.