

Navigating the Worming Minefield

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The question frequently occurs in practice “how should I worm my horse?” As vets and owners alike come to terms with the idea of drug-resistance, the question of how to worm horses has never been more pertinent or difficult to answer. Achieving effective worming, whilst preventing development of resistance, requires more than drugs. Management, such as field rotation and regular removal of droppings, will always be the cornerstone of effective worm control. They are vital to control worm burdens and are things to which resistance can never develop. In this article I will discuss a number of principles to take into account when worming your horse, both now and for the future.



Before discussing horses and resistance issues, it is worth considering new research carried out in humans. Hookworms are a type of blood-sucking intestinal parasite found in people. In common with a lot of diseases that used to be common, the incidence in the developed world is very low due to increasing living standards with improved hygiene, in combination with hyper-effective worming drugs. Scientists in Manchester have found that the presence of very low numbers of worms actually stop the symptoms of asthma, irritable bowel syndrome (IBS) and some other diseases; they seem to lend a protective effect on the body's immune system. This is thought to be due to release of compounds from the worm that can change the human's immune response. The current increase in asthma and IBS in people may be connected to the absence of intestinal worms today. Although this phenomenon has not been investigated in horses yet, it seems likely that a

small worm burden is better for your horse than no worms at all. So do not become obsessed with removing every last worm.

Despite what you may read elsewhere, choice of wormer is not cut and dry. What you have always done is not necessarily appropriate now. Some new drugs are highly effective today, but will not be so in a few years. An example of how resistance develops is seen with the antibiotic penicillin, developed in the 1940s; bacterial resistance developed rapidly due to its widespread use: now the drug has action against a tiny proportion of the bacteria it originally killed. Likewise, resistance to benzimidazole wormers is so widespread that few vets now recommend a single dose as adequate worming for horses.

Several methods can be used to improve drug effectiveness in the face of resistance: First, more of the drug can be given *i.e.* increase the dose rate. Secondly, another type of drug can be added with a different mechanism of action, so that the two drugs act in combination. Thirdly, new drugs can be developed. Development of new drugs is made more difficult partly because the mechanism of action of current drugs is not completely understood. The international market for wormers is not large, especially for horses. Taking an already-known worming drug from the laboratory through clinical trials and to the market place is a massive financial undertaking for a drug company; new worm drug development is almost static worldwide. Instead, drug companies rely on using the drugs available here and now. This leaves us a responsibility to use these drugs sensibly in order to maximise the time before resistance develops. But what drugs do we have?

Wormers in horses fall into three groups; these are: imidazothiazoles (*e.g.* pyrantel), benzimidazoles (*e.g.* fenbendazole) and the avermectins (*e.g.* ivermectin, moxidectin). The last group is now the most effective in horses for nematodes; nevertheless, resistance has been seen already and will probably become more widespread. Benzimidazoles do not have any action on tapeworms; high burdens of tapeworms are a significant cause of surgical colic and reliance on benzimidazole drugs will therefore end with colic. Pyrantel at double dose rate is an excellent choice for tapeworm treatment; rather than using the drug every year is better to use the blood test your vet can arrange to test for tapeworms. This could be carried out when your horse receives its annual vaccinations. You may be surprised to find that this way you rarely need to treat your horse for tapeworms (if at all), and the drug's effectiveness can be preserved for the future.

The same principle applies to the other sorts of intestinal nematodes. Worm egg counts carried out on droppings are a cheap and reliable indicator of how your worm control strategies are working; you can arrange these through your vet or directly. Remember that at certain times of the year, especially winter, many worms 'hide' from the drugs inside the intestine wall and worm egg counts taken then can be misleading. Only certain drugs

kill these 'encysted' worms so the choice at these times is critical too. You may think it is cheaper and easier just to worm your horse, but it is both more expensive and will shorten the life of those drugs we have available considerably. There is a myth that horses should be wormed every 6 weeks, at least in summer. On heavily grazed pasture where new horses arrive frequently this is the case. However, in many cases it is overkill. Horses do not pick up worms in stables! Many could wait considerably longer, as long as worm egg counts are taken reasonably often to check for rising counts. A sensible compromise would be to worm every 6 weeks at the start of the spring grass flush, then to ease back in summer and check worm egg counts.

In veterinary surgeries and equestrian centres across the country you can pick up leaflets containing wormer strategies; most of them share one thing in common: they are effective, at least in the short term. They take account in seasonal changes in worm burdens and exposure to new infection. But every horses' worming needs vary wildly according to many factors: these include weather conditions, grazing density, management of droppings, previous worming history, disease and health status of the horse, pregnancy. Any article purporting to tell you how to worm your horse is probably simplistic, or just caters for worse case scenario. A number of basic principles should be followed, but the application to your set-up is up to you. Better than relying on strategies, talk to your vet about suitable worming schedules for your particular circumstance. In many instances the cost of consulting your vet may result in overall saving in terms of wormer.

To conclude; worming should be tailored to individual circumstance, which in many cases will be less often than some articles and printed annual timetables would lead you to expect. Try and alter what you do annually on a 3 or 4 year rotation. Rather than blindly worming every 6 weeks, take worm egg counts to see if it is necessary; your local vet practice can arrange this, either 'in house' or by post. Do not forget tapeworms: many horses do not need to be treated as often as they are, whilst many others are never treated at all! Get a blood test to see if your horse needs it. New research in people may indicate that a low level of worms is preferable for your horse's health than having no worms at all. Colic happens to many horses from time to time despite following very rigorous and careful worming schedules; it is a feature of horses. Resistance to the drugs we have will also gradually develop in worms. If you follow the principles outlined here you can sleep with a clear conscience that you are doing your part to slow down the development of resistance and therefore should colic occur, it is most unlikely to be due to worms.