TARGETED PARASITE CONTROL

to take care of Dung Beetles

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In partnership with:

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Concern for the overuse of worming chemicals in animals has never been higher. Not only is reckless treatment causing rapid **resistance problems**, but a burgeoning area of research is revealing the devastating effects they can wreak on our **environment** too.

Following use, toxic levels of these chemicals are passed out in the dung, crippling soil ecosystems and in particular harming our dung beetle populations.

One of the best ways to reduce chemical contamination AND our reliance on them is to poo pick regularly – this breaks the lifecycle of the parasites by removing the eggs from the pasture before they hatch. But fresh dung is also essential habitat for our dung beetles, little critters that could play an important role in helping us to manage animal waste naturally, negating the need for all that heavy labour and giving a host of added benefits to the land, if we let them.

It might seem counterintuitive at the outset but if we can manage our grazing to reduce parasite infection and preserve habitat for dung beetles there are wins all round for horse health and the environment!

Getting Started

1. Begin by making sure the parasite control programme is working. A regular testing programme based on worm egg counts every 8-12 weeks will identify any problems in the herd and allow any wormy individuals to be treated accordingly. Avoid blanket treatments so there is always some non-toxic dung available to dung beetles. You may need to worm more often and poo pick with greater frequency in the beginning to reduce infection levels. Contact your prescriber for more information.

2. Worm eggs laid in dung hatch within 4-5 days. Research therefore suggests that poo picking twice a week is sufficient to significantly reduce infective larvae on the pasture. Dung beetles prefer fresher animal poo up to 48hrs old. Begin to leave the newest piles on the pasture and clear them after 3-4 days.

Minimise Chemical Contamination

Of our five licenced wormers for horses, ivermectin is the most toxic to dung beetles and moxidectin moderately toxic while pyrantel, fenbendazole and praziquantel are significantly less poisonous.

Healthy dung beetle populations will reduce the need for poo picking!

Toxic levels of worming chemicals are passed out in animal dung and contaminate soils and watercourses.

It's estimated that between 80 to 98% of an oral dose of ivermectin passes straight through the horse and is excreted in the dung without being metabolised by the body.

Once in the environment it's also one of the most resilient chemicals, persisting at high concentrations in faeces for many weeks, leaching into the soil to be absorbed by plants and invertebrates and washing into watercourses, often with lethal effects, paralysing invertebrates and reducing plant growth.

3. Where treatment is necessary, minimise the horse's time on the pasture for up to 10 days and poo pick at least daily during this time. The more eco-toxic the chemical you're using, the more diligent you should be. This will limit chemical toxins getting into the environment and reduce incidences of tapeworm reinfection for the horse.

Wormers licenced for tapeworm treatment (praziquantel and pyrantel) cause packets of tapeworm eggs to be released in the dung which can trigger a surge of eggs onto the pasture in the first few hours after treatment. Most chemicals reach their highest concentration in faeces 24-48 hours after being administered.

If you can only stable for a short time, advice is to keep horses in the day following worming. It may also help to restrict treated horses to a smaller paddock for 10 days to aid dung collection.

4. Where possible, worm when dung beetles are less active between November and February.

Managing Contaminated Dung

5. Dung collected from treated horses can be placed in carefully situated manure piles and allowed to rot down. Although dung beetles are attracted to muckheaps, they generally don't breed in them. Research has shown thermophilic composting (where the centre of the pile reaches a min 60 °C) will cause even ivermectin to break down almost entirely after a few weeks.

6. The main environmental risk from muckheaps comes from the impact of residues in rainwater run-off leaching into soils and watercourses. They should be positioned at least 3m outside of fields to prevent hatching larvae re-contaminating grazing land and away from areas of surface groundwater, field drains and not within 10 metres of a watercourse. In an ideal world cover your muck heap with a roof/tarp to reduce the risk of run-off.

7. Manure should not be spread back on the land for at least 6 months. By then concentrations of parasiticides should be low and worm eggs much reduced to minimise reinfection.

Benefits of dung beetles

Like all conservation projects, dung beetle populations will take time to recover and be greatly influenced by the surroundings outside your fields too. But take heart, there are many benefits to making the effort. Some beetle species will fly in from up to 10 miles away for the right poo!

Horses can produce around 3-5% of their body weight in dung every day. For an average 16hh horse that's around 18kg of dung a day or 6.5 tons every year! If we spend half an hour poo-picking every day, that is over 182 hours a year on removing dung from our pastures.

Dung beetles are nature's waste disposal teams; they clear-up large quantities of animal faeces by tunnelling and breeding within dung, feeding upon it and burying it below ground. This action fertilises and aerates soils, improving its ability to retain water and increasing nutrient availability to plants - beneficial for both root structures and other organisms. It's estimated that dung beetles provide 'ecosystem services' to the UK cattle industry valued at more than £367 million per year - and they could save us even more if we looked after them better!

Importantly the activity of the dung beetles is also thought to break the parasite life cycle by removing the dung medium that acts as the incubator for the parasite eggs. This prevents the worm eggs hatching into motile larvae which would otherwise wriggle away from the dung and climb the grass stalks to re-infect the grazing horses.

A little bit of strategic thinking to look after these insects will pay huge dividends to our time, our horse's health and the environment in the long run. An investment worth making for all our sakes!

Visit www.westgatelabs.co.uk or contact your vet or prescriber for more information.

Muckheaps should be carefully situated to reduce contamination.

The ecosystem services that dung beetles provide reduce livestock parasites and give a host of environmental benefits.