



Gone are the days when all good donkey owners could sleep safe at night in the knowledge that they were keeping their donkeys parasite free by simply following a worming calendar. For those of you too young to remember, up until about a decade ago it was common practice amongst all horse, donkey and mule owners to administer a wormer (or more accurately de-wormer) every 4-13 weeks depending on the drug. The de-wormer to be used would vary according to the time of year, and drugs would be rotated so that no one product was used repeatedly. This system of interval dosing really took off in the 1980s when ivermectin was developed and quickly became the most effective anti-parasitic drug ever to be developed. Prior to ivermectin usage large strongyles were a common cause of colic and ultimately death. It's no surprise that ivermectin was seen as a wonder drug as following such widespread use large strongyles have all but disappeared. Rising in their ashes though as number one parasite pest are small strongyles, also known as cyathostomes. The repeated doses of wormers over the last 30 years or so have not wiped out the small strongyles, but we have instead caused them to up their game! Enter drug resistance...

RESISTANCE

MISUSE OF CHEMICAL WORMERS

A combination of repeated doses, under-dosing and unnecessary dosing has speeded up the process of natural selection and artificially selectively bred those worms that are most able to survive dosing of chemical wormers. Under dosing due to incorrect weight estimations can mean that all too often a smaller volume of drug is given which may not be sufficient to act on all the parasites in an animal's digestive tract. By leaving some worms exposed to a less than lethal dose they will be able to build up some sort of a self-preservation response to future dosing. Poor technique may also be responsible for under-dosing as worming pastes can be spilt, spat out, or may still be contained within the tube.



PASTURE CONTAMINATION

As 80% of worms are found in only 20% of the animals (known as 'high shedders'), treating an entire group of animals results in the majority of the herd receiving an unnecessary dose of drugs. These high shedders are responsible for most of the pasture faecal egg contamination that keeps the worm lifecycle going. Donkeys can naturally tolerate a low level worm burden without any detrimental effects to their health. The best defence against high shedding is maintaining a healthy immune system, proper nutrition and good management.

So where do we go from here? What not to do is an easy answer;

- not to carry on de-worming animals as a matter of routine
- not to de-worm animals that have no/minimal egg output
- not to use drugs that have no/little effect

PARASITE CONTROL AND FAECAL EGG COUNTS

Instead of repeated 'blanket' dosing of drugs we can start to use targeted treatment strategies to de-worm those animals that are responsible for pasture egg contamination. In order to know who the high shedders are, we have to run some faecal egg count (FEC) tests to find out. FEC tests involve sending a dung sample to a lab, and having them screen the dung to identify type and number of eggs present. FEC test results give a snapshot of the type and number of eggs being released at the time of sampling, and are best used to build up a picture over time. We recommend testing at least four times a year, and consulting with your vet to see if he/she thinks you need to do more than just a basic test looking for the most common parasites. If your vet has any concerns they may suggest running what is known as a 'full profile' to look for all types of parasite eggs.

So once you've identified which donkeys in your group are the high shedders, you can give them a targeted dose of wormer and leave the non-offenders alone this time. This saves you money on wormer, time spent handling and possible related stress to the donkeys (and you), less chemical contamination on the land and preserves a proportion of worms as being untreated this time round – thus not speeding up the selection for drug resistance process.



The next step on is to check that the dose of de-wormer you've given has worked. This is called a faecal egg count reduction test (FECRT) and involves recounting the number of eggs found in the dung sample 14 days after treatment. This doesn't have to be done every time you sample and treat, but be guided by your vet on frequency. Performing the FECRT will give you more confidence in the product that you chose to use and if the FEC result post treatment has dropped to 0 you will know the treatment was successful. If there is still a positive result then it is likely that the worms inside your donkey have developed some level of resistance to that drug, or class of drugs and you will be advised to try another course of action and keep monitoring the situation.

Unfortunately once resistance has developed there is no way of reversing the process.

The best we can do is become aware of it and try and slow down the process as much as possible, preserving any remaining efficacy of the drug in question for future use.

PASTURE HYGIENE

A worm control strategy that doesn't involve 'blanket treating' has to include an element of pasture management, or pasture 'hygiene'. Good pasture hygiene involves;

- Not overstocking
- Pooh picking (ideally daily but at least twice a week)
- Harrowing in hot, dry weather in the summer
- Cross grazing with sheep/cattle as donkey worms tend not to be a problem for sheep/cattle and vice versa (the exception to this rule is liver fluke, a worm found only on marshy, wet land)
- Not moving to new pasture immediately following de-worming, in a misguided attempt to keep pasture 'clean'

If you are a Donkey Sanctuary foster owner then we are able to offer you free FEC tests on your donkeys and any co-grazing animal's dung samples. Please contact us for specific advice on dung collection, packaging and posting. If you are a donkey carer, owner or breeder we are happy to provide the same service for your donkeys on a donation basis

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The Donkey Sanctuary was founded by Dr Elisabeth Svendsen MBE in 1969.

The Donkey Sanctuary (registered charity number 264818) and its sole corporate trustee, The Donkey Sanctuary Trustee Limited (Company number 07328588), both have their registered office at Slade House Farm, Sidmouth, EX10 0NU.

Incorporating: The Elisabeth Svendsen Trust for Children and Donkeys (EST); The International Donkey Protection Trust (IDPT).

WORKING WORLDWIDE