IT'S A DIRTY JOB

A good **poo-picking** regime is essential to break the re-infection cycle

THE WAR ON WORMS

Avoiding parasite problems now and in the future, by Dr Corrine Austin, Austin Davis Biologics

Best practice worm control has received a lot of coverage in recent years with the availability of a saliva test for tapeworm diagnosis and more recently a blood test for small redworm (including encysted larval phases) which complement routine faecal egg count testing.

In addition, an expert panel of veterinarians and parasitologists prepared guidelines for UK vets in 2019 on worm control, which highlighted the importance of testing before resorting to the use of dewormers.

This practice, often termed 'diagnostic-led worm control', leads owners to only administer dewormers when infections are diagnosed, and treatment is really needed. Gone are the days of routinely administering dewormers to every horse and hoping for the best. That strategy is out-dated as it has caused widespread drug resistance in worms - meaning that worms are able to survive the killing effects of dewormers and remain in place after treatment.

We are often told these facts, but what do they really mean? This article compares the effects of diagnostic-led worm control and routine treatment programmes. Whilst routine treatment programmes provide worms with regular exposure to deworming drugs, some yards may limit the use of dewormers by simply using them less frequently, so the effect of this practice is also included.

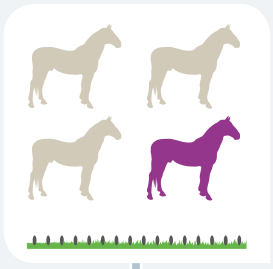
WORM CONTROL PRACTICES

Diagrams **1, 2** and **3** demonstrate the effect of different worm control practices on grazing as well as on the horses in the herd. The **purple horse** in each diagram represents a horse with a worm burden in need of deworming.

It is clear from these diagrams that diagnostic-led worm control is essential for reducing the risk of drug resistant worms and effective long-term worm control.

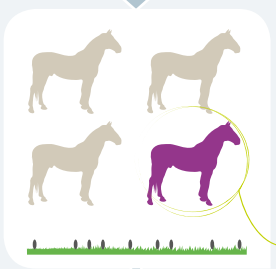
Please note, these diagrams are simplified examples to demonstrate the effect of worm control strategies. Reducing worm life cycles occurring in horses and the paddocks they graze can take time before improvements in worm infection levels are seen.

1) DIAGNOSTIC-LED WORM CONTROL



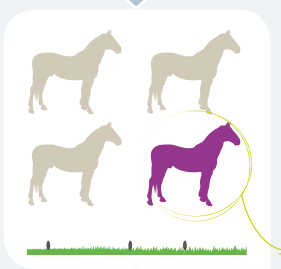
KEY
Grazing
Worm eggs
Horse with worm burden

- Commonly, a small proportion of a herd are high egg shedders – these horses are more susceptible to worm burdens
- Without management, high egg shedding will result in extensive grazing contamination



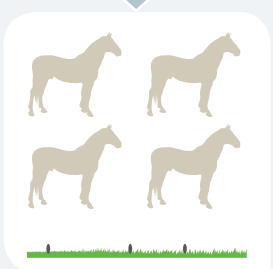
- All horses are tested for worm infection, and those requiring treatment are dewormed
- This results in reduced egg shedding and less pasture contamination

IDENTIFY AND TREAT



- All horses are routinely tested, and treatment is given where needed
- Regular testing also helps identify horses likely to be more susceptible to infection and thus at risk of disease in the future

IDENTIFY AND TREAT

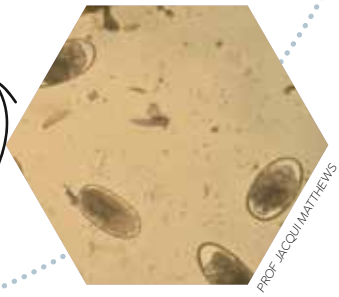


- In this example all horses are tested, but none require treatment. Alternatively, there may always be a very low number of horses requiring treatment
- **Note** Egg shedding and pasture contamination still occurs as the aim is not to eliminate all parasites, but to manage them at an acceptable level

REGULAR TESTING

TESTING TIMES

There is now a **saliva test** for tapeworm diagnosis

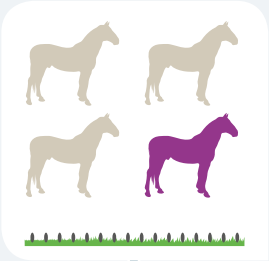


PROF JACQUI MATTHEWS

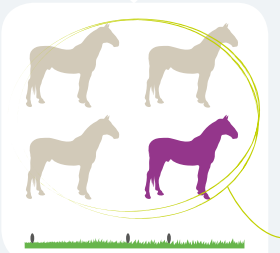
FIELD DUTY

Good **pasture management** is an essential weapon in the war against worms

2) INFREQUENT ROUTINE TREATMENT, NO TESTING

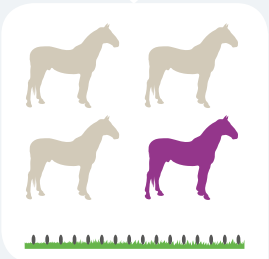


- Commonly, a small proportion of a herd are high egg shedders – these horses are more susceptible to worm burdens
- High egg shedding = high grazing contamination

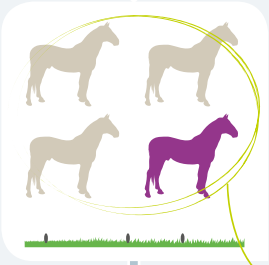


- All horses treated, without testing, to monitor for high shedders or for effectiveness of the worm control
- Egg shedding reduces **temporarily** and pasture is less contaminated

ALL TREATED



- High egg shedding reoccurs and contaminates the pasture, and others are exposed to higher infection risks
- Higher levels of exposure may result in other horses becoming infected before the next treatment

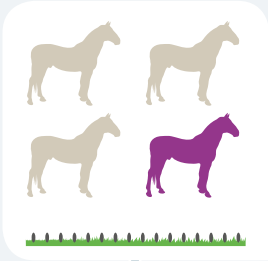


- After all horses are again treated, egg shedding is reduced and grazing contamination is lessened. But the ongoing cycle continues, resulting in a cycle of contaminated grazing and infected horses
- Eventually this method of worm control could result in drug-resistant worms emerging

ALL TREATED

CYCLE CONTINUES

3) FREQUENT ROUTINE TREATMENT, NO TESTING



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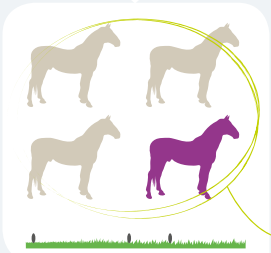
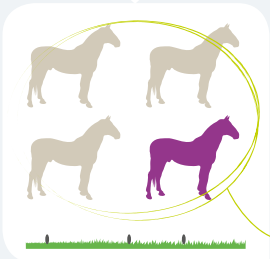


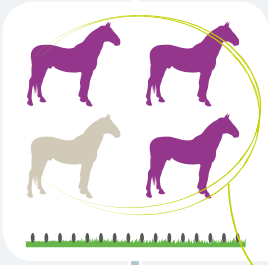
- All horses treated, without testing, to monitor for high shedders or for effectiveness of worm control
- Egg shedding reduces and grazing becomes less contaminated

ALL TREATED



- All horses treated/no monitoring
- Egg shedding reduces, grazing becomes less contaminated
- BUT worms still existing on the property are regularly exposed to deworming drugs and adapt to survive their effect = drug resistance

ALL TREATED



- Drug resistance results in worms surviving treatment, high pasture contamination and greater worm challenge for other horses that are not normally as susceptible. Herd members suffer continuous infection, often resulting in disease

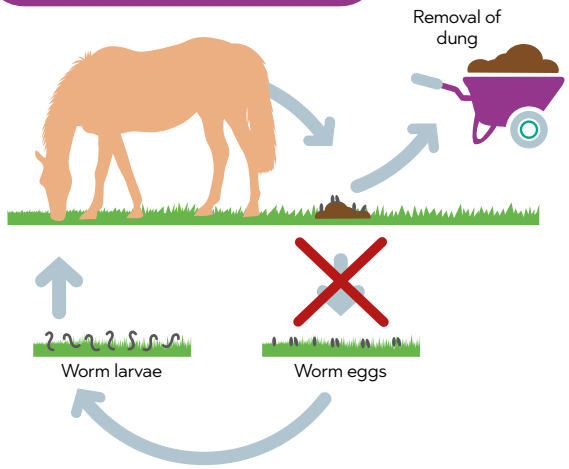
THERE IS NO WAY BACK FROM THIS SITUATION

ALL TREATED

DRUG RESISTANT WORMS

ADOBESTOCK

4) DUNG REMOVAL REDUCES INFECTION RISK



CORRECT PASTURE MANAGEMENT

As well as correctly managing worm burden levels within horses as described on the preceding pages (diagrams 1, 2 & 3), it is important to manage worm life cycles occurring on the grazing too. Good pasture management can reduce the need for dewormer use which will in turn slow the emergence of resistance.

A simplified version of a generic worm life cycle can be seen in diagram 4, above, where the effect of dung removal on worm life cycles is illustrated. By removing dung, there is a significant reduction in eggs contaminating the grazing therefore limiting the number of infective larvae accessible for the horse to ingest.

To ensure your grazing has a low level of infective worm larvae, dung should be removed every 1-2 days, but twice a week may be suitable providing beetles and birds are not spreading the dung. It may be beneficial to keep horses on manageable sized paddocks to make dung removal more feasible and rotation of paddocks prevents grass from becoming overgrazed.

If possible, it is important to completely remove the dung from paddocks and avoid harrowing to break up the dung. Harrowing practices simply spread the worm eggs/larvae throughout the grazing as most UK weather conditions are not hot or dry enough to eliminate worm eggs/larvae.

Conducting regular testing (as described below) will indicate how successful your paddock management is. If horses continually have test results indicating high infection levels, then there could be scope to make further improvements to your paddock management.

A suitable testing programme for most adult horses in the UK is illustrated in diagram 5 (right). Diagnostic-led worm control is where testing is used to tell you when your horse needs deworming.

5) DIAGNOSTIC-LED WORM CONTROL TESTING PROGRAMME

"To ensure your grazing has a low level of infective worm larvae, dung should be removed every 1-2 days, but twice a week may be suitable providing beetles and birds are not spreading the dung"

Blood or saliva testing should be conducted every six months to detect tapeworm burdens, preferably during spring and autumn. Faecal egg count (FEC) analysis should be carried out for assessing redworm and roundworm egg shedding throughout March to October for detection of adults.

The small redworm blood test (including encysted larval phases) should be used from September to December, but if this is missed, testing should still be considered until April.

ADDITIONAL FACTORS TO CONSIDER

New horses arriving at a yard should be kept separate from the rest of the herd for at least three days after treatment with a moxidectin/praziquantel combination dewormer.

This practice will reduce contamination of your grazing with additional worm eggs. Testing prior to this treatment would inform you of the horse's infection levels and whether additional testing or treatment may be required before the rest of the herd's routine testing is due.

Underdosing should be avoided at all costs as the risk of developing worm resistance is increased due to worms being exposed to the drug without being killed. Ensure that you are using the correct dewormer dosage by using a weighbridge to determine the horse's weight. And always administer deworming paste on clean flooring where possible so that any paste spat out can be re-administered.

Don't leave worm control to chance, speak to your veterinarian or SQP to find out more on how to conduct appropriate testing for diagnostic-led worm control for your horse. Ⓡ

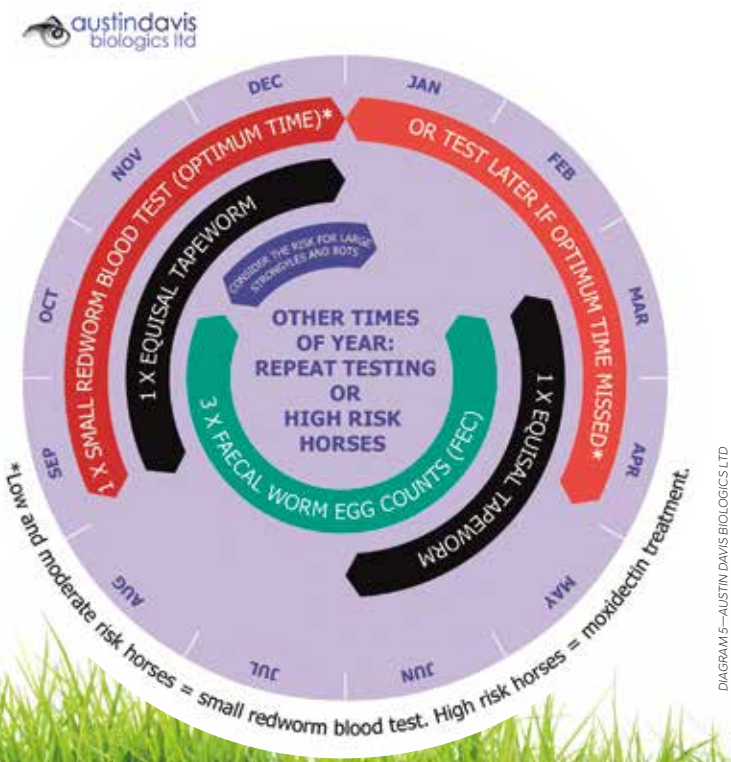


DIAGRAM 5—AUSTIN DAVIS BIOLOGICS LTD