

Planned Worm Control for the Beef Herd

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Technical Note

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SUMMARY

Gut worms and lungworm have a severe adverse effect on the growth rates of immature beef cattle. However in many herds worm treatments are also given when they are not required, wasting time and resources. The way to prevent losses and to ensure that cost effective worm control is achieved is to plan the whole season's worm control before turnout.

There are four key elements to consider:

- **Age of stock.**
- **The availability of and the grazing history of the pasture.**
- **The type of treatment programme.**
- **Completing the plan.**

Age of stock

Adult cattle will not normally require treatment for round worms. There is a strong age related immunity that ensures that by the time cattle reach two years of age gut worms will cause them little or no adverse effect. Furthermore the immunity means that few worms will establish in the gut and only limited numbers of worm eggs will be produced. These cattle therefore have a cleansing effect on a pasture contaminated with worms as they consume the infective stages of the parasite, but are not infected by them. The immunity also works to some extent for lungworm, but there can be problems where there has been little contact with lungworm when the cattle are immature and worm control has been extremely effective. Relatively few lungworm larvae are needed on pasture to cause clinical disease therefore to ensure that lungworm is not a problem in adult cattle a lungworm vaccination programme should be considered for all breeding replacements, including bulls.

Spring born calves at foot do not generally require preventive treatment strategies for gut worms as long as they are with their mothers. This is the cleansing effect that adult will have on the pasture. However some limited trial work has indicated that a marginal cost benefit response may be gained from the use



Larvae of lung worm detected in faeces from a calf

of worm boluses. Once the calves are weaned worm control will be required. As is the case for adults, lungworm may cause problems in young stock both before and after weaning. Strategies to avoid this include vaccination and treatment with an appropriate wormer if coughing is observed in the calves. Knowledge of the history of lungworm on the farm and careful observation of calves for coughing will allow this problem to be managed. If calves are still at grass when weaned then a wormer with persistent action can be used to cover the period until housing.

Weaned autumn born calves and spring born calves in their second season are susceptible to gut worms

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and a control programme for these age groups is required. Lungworm control is also essential, but the control programme for the gut worms will also control lungworm.

The availability of and the grazing history of the pasture

The infective stages of the parasites, third stage larvae (L3s) will over winter on the pasture from one year to the next. After that they have a limited period of survival and die off progressively in the spring so that by the time mid summer arrives the infection from last year has mostly gone. That is why aftermath from hay crops and silage, where it is not cut too early, is considered to represent safe grazing. If weaned immature cattle are turned out on to infective pasture in the spring then they will be infected with L3s which develop to adult worms (L5s) in the gut. These produce eggs that in turn hatch on the pasture to give a new generation of infective larvae. By the end of June this contamination will be of such severity that the cattle will be scouring and losing body condition.

If the pasture has not been grazed or grazed only by sheep in the previous grazing season then it is considered to be clean. There is relatively little cross over between the parasites of sheep and those of cattle, although occasionally nematodirus worms can cause problems in younger calves under these conditions.

Therefore in planning a worm control programme the grazing history from the previous 12 months grazing must be known.

Lungworm is the exception to the above and small numbers of infective lungworm can persist on the pasture for periods beyond a year. Where cattle are coughing at grass the possibility of lungworm must be considered and appropriate early action taken.

The type of treatment programme

Where the susceptible age groups of cattle are to be turned out onto contaminated pasture then a

worm control programme is required. If cattle are to continue to graze the same pasture albeit with aftermath being added then a suppressive treatment regime is the best approach. This can be achieved in a number of ways, but essentially means that the animals are treated throughout the first half of the grazing season in such a way that worms do not get a chance to mature and produce eggs. This means that as the season progresses the overwintered contamination gradually dies off and the pasture becomes safe as no new infection is added to it.

This suppressive control can be achieved at its simplest by using wormer boluses administered at turnout. If this approach is followed there is no further requirement to handle the cattle for worm treatment until around housing in the autumn (see below). The same effect can be achieved by the periodic treatment at intervals dictated by the duration of the effect of the wormer used. Wormers with no persistence require to be given at three week intervals. This period can be extended for these products which have a persistent effect and prevent reinfection, eg ivermectin 3, 8 and 13 weeks after turnout. In most situations treatment is not required after mid July.

Where these suppressive treatments are used there will usually be some exposure to worms towards the end of the grazing season. This is not of great importance but it does mean that the young stock should be given a worming dose at or around housing.

Completing the plan

The grazing groups that are planned should be entered into a table. The need for treatment should be entered next to each group based on the above categories. The pasture that is earmarked for each group should then be entered next. Against this the grazing history for the previous 12 months should be entered. Considering the information entered across the columns then the need for worm control can be assessed. In the final column the programme to be used should be entered.

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Grazing Group	Need to treat	Pasture	Pasture history (last year)	Treatment programme
Spring cows with calves at foot 1	None, watch calves for coughing	Field A	Cows and calves	None until calves weaned
Spring cows with calves at foot 2	None, watch calves for coughing	Field B	Cows and calves	None until calves weaned
Weaned calves 1, born previous year	High risk treatment required	Field C	Weaned calves	Suppressive regime
Weaned calves 2, born previous year	High risk treatment required	Field D	Weaned calves	Suppressive regime
Bulling Heifers	Moderate risk treatment may be required	Field E	Ewes and lambs	No treatment. Lungworm vaccination may be required

Worming of Cattle at Housing

The final element in the control programme is worming cattle at housing. The major gut and lungworms of cattle have developed survival strategies to ensure that there are worms about in the spring of the year to perpetuate infection. When the infective larvae of the gut worms are ingested along with grass in the latter half of the grazing season a proportion of them enter a dormant phase of development in the stomach and gut lining. In the spring of the year these dormant stages are reactivated and burst through the lining of the gut to resume their life cycle and cause disease.

Lungworms can live for a long enough period in the lungs to last from one grazing season to the next. Dosing at housing is therefore vital to remove the burden of worms both dormant and active. This prevents disease in the spring and breaks the life cycle of the parasites. It also ensures that worms do not depress the animals' ability to make the most of their food in the housing period.

What types of stock require to be wormed at housing?

All young stock should be dosed. Some benefit may be achieved from dosing adults, but it is unlikely to be cost effective and the standard advice is that adults do not need to be wormed.

Does it matter what the worm control programme in the summer was?

Not really. Most control programmes do not result in absolute control of the parasite, particularly in the last month or so of the grazing season.

What type of wormer should be used?

Both the benzimidazole group (white wormers) and the macrocyclic lactone group (clear drenches, includes the avermectins) group are effective against the inhibited worm larvae. The levamisole group (yellow drenches) is not effective at this time and should not be used.

When is the best time to worm the cattle in relation to housing?

Use white wormers several days after housing to ensure all worms are at the susceptible stage. The macrocyclic lactone group has persistent activity and can therefore be used prior to housing the cattle when they are still grazing. This is beneficial where lungworm is known to be a problem, removing the worms when they are at grass, preventing reinfection and reducing the risk of pneumonia in the period immediately after housing.

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How do you make sure you get the best programme for your own herd?

It is always best to discuss the fine detail of worm control programmes with your own vet to ensure you make effective use of the products available and consider the control of other parasites such as fluke and lice. The autumn part of the worm control programme should also dovetail with the pneumonia control programme for young cattle housed for the first time.

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