

dairy calf to beef

Getting the dose right

A good strategy against stomach and roundworms is key in dairy calf to beef

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Dairy calf to beef production is primarily grass-based. The most successful farms are those that optimise animal performance and achieve a high proportion of lifetime gain from grazed grass. However, these systems regularly experience outbreaks of stomach and roundworms.

Calves are particularly vulnerable to infection from stomach worms which can result in ill-thrift, with subclinical infection often resulting in reduced growth.

After their first grazing season cattle generally develop sufficient immunity to prevent clinical disease however there have been numerous cases where older animals suffer from a high worm burden.

Symptoms of stomach worms can include diarrhoea, decreased appetite and weight loss. Stomach worms can cause severe damage to the stomach and small intestine which will cause parasitic gastroenteritis.

Cattle are usually infected with a number of stomach worm species, the most common being *Ostertagia ostertagi* and *Cooperia oncophora*. The different species of stomach worms all have a similar life cycle, with free-living and parasitic stages.

Eggs laid by mature female worms in the gastrointestinal tract pass out with the faeces. The eggs develop in the faeces and the larvae hatch and feed on microbes in the dung.

Weather

The larvae develop into infective third-stage larvae after approximately four to ten days, depending on weather conditions. The infective L3 larvae migrate out of the faecal pat onto the pasture where they can persist for extended periods.

Once ingested by grazing cattle, the larvae pass to the gastrointestinal tract, where they develop into adults, mate and lay eggs within approximately three weeks.



Peter Byrne dosing cattle with Teagasc advisor John Brophy.

Control of stomach worms on dairy calf to beef farms is usually achieved by administering anthelmintic doses. There are currently three classes of anthelmintic licensed for the control of stomach worms in cattle: benzimidazole; levamisole and, macrocyclic lactone (Ivomec).

These products have been highly effective in controlling stomach worm infection in cattle and sheep for over 50 years. In recent years there have been a number of reports of anthelmintic resistance worldwide.

Anthelmintic resistance is defined as the inherited ability of worms to survive doses of drugs that would normally kill them.

Closer to home, a study on dairy calf to beef farms carried out by Teagasc

showed that benzimidazole (1-BZ) resistance was present on 60% of farms tested, levamisole (2-LV) resistance on 18% of farms, moxidectin (3-ML) resistance on 71% of farms and ivermectin (3-ML) resistance on 100% of farms tested.

Worm burden

The level of worm burden in a herd can be established by counting the number of worm eggs per gramme (epg) of faeces (faecal egg count or FEC). Most veterinary practices offer a faecal testing service to help determine if dosing for worms is required.

In order to avoid worm resistance building up, farmers should adopt a number of measures when implementing their dosing strategy.



Peter Byrne with Fergal Maguire.

FARMER EXPERIENCE: PETER AND AINE BYRNE

Peter and Aine Byrne operate a dairy calf-to-beef system alongside a tillage enterprise on their 70ha farm just outside Castledermot, Co Kildare.

"We buy in 130 calves at three weeks of age," says Peter.

"We buy 70% of them in the spring and 30% in the autumn." The Byrnes are participants in the Teagasc Dairybeef 500 programme.

"Traditionally, we have treated the calves for worms with an Ivermectin-based product three weeks after turnout and then every five weeks after this, whether they were showing signs of a worm burden or not.

"Yearlings were treated at least twice during the grazing season depending on weather conditions. However, since joining the Teagasc Dairybeef 500 programme, we have changed our dosing strategy," adds Peter.

"From the end of May, I start taking regular faecal egg samples to check the levels of stomach worm burden in all groups of stock. The results of these tests will determine when I dose. Last year I didn't dose the calves until the first week in June and the yearling

cattle wouldn't have received their first dose until July.

"Generally I won't go in with a dose until the FEC goes above 200epg. Performance of the calves remained good last year with average daily gain (ADG) for these animals through the summer being 0.8kg.

"With regards to lungworms, when the first signs of coughing start to appear I would administer a treatment. When treating I now would generally try to alternate between the different classes of the drug used to try and prevent any resistance building up on the farm.

"When dosing animals I always assess the weight of the animal and dose accordingly to ensure the correct volume is administered."

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Best practice dosing programme for calves in first grazing season

The majority of spring-born calves are weaned off milk and turned out to pasture in April-May. Faecal egg samples should be taken from these calves from early June onwards to quantify the level of stomach worm burden the calves are experiencing.

Dung samples should be taken on a monthly basis and more frequently in high risk periods.

The results of the FEC test will be the main indicator of when these calves should receive their first dose. However, poor average daily gains (ADG) should also be investigated. Subsequent doses should again be based on the results of FEC tests.

Average daily gain for dairy-bred calves over the rearing period and through their first summer is 0.7kg to 0.8kg. Regular weighing of calves allows farmers to monitor ADG accurately, if calves are falling below the target weight gain this may suggest that a worm burden could be affecting calf thrive. However, investigation into calf nutrition and herd health care should be carried out.

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mals according to their weight.

For treatment and protection of lungworms, the calves should be dosed when the first signs of coughing appear. With no known resistance to anthelmintic drugs in lungworm, there's an opportunity to use an alternative drug class to the ones normally

used on your farm to treat stomach worms.

When selecting a dosing product alternate between the different classes of drugs throughout the summer, be careful that you are not just using a different product that contains active ingredients are from the same class.

DOS AND DON'TS

Do:

- Watch for clinical signs and only dose when required.
- Take stock performance and faecal egg count (FEC) results into account when deciding on whether to dose.
- Pay attention to dose-to-weight calculations so animals receive a full dose.
- Dose based on the weight of the heaviest animal in the bunch (don't under-dose).
- If a large degree of weight variation exists, split the group into heavier and lighter groups and then dose based on the heaviest in each group.
- Read the label and instructions carefully to ensure that you know exactly what the dose can and cannot treat.
- Dose for lungworm in calves on the first signs of hoarse cough.
- Complete a drench test to verify whether or not there is resistance on farm to the drugs used (consult your local advisor/vet for more information on this).
- Alternate the drug used to dose cattle using the three classes listed above where possible.

Don't:

- Don't use flukicide/wormer combination products unless intended for control of both stomach worms and fluke.
- Don't dose and turn out to clean pasture. It is best to dose and return to dirty pasture to reduce anthelmintic resistance.
- Don't dose based on calendar dates or anticipated worm burdens.
- Don't turn calves out to the same paddocks as previous bunches of calves in the same/previous year. Try to alternate the ground calves graze during the first months post weaning/turnout.