

Managing Parasites

RESPONSIBLE WORM CONTROL PRACTICES



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Global Leaders in Parasiticides



RESPONSIBLE CONTROL PRACTICES

What's the problem?

With increasing concerns about cattle wellbeing, the environment, biodiversity and the development of resistant parasites, promoting the responsible use of anti-parasitics is essential.

This process involves all players: pharmaceutical companies, diagnostic labs, veterinarians, animal health medicines advisors and farmers.

Best practices aim to protect herd health and productivity, whilst maintaining a long-term sustainable balance in parasite control on farms. When developing a best practice worming programme one must take into consideration the characteristics of the animal, the parasites, the environment, and the parasiticide.

There are three underlying principles:

- the right pasture/grazing management
- the optimisation of livestock immunity
- the correct use of anti-parasitics

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RESPONSIBLE CONTROL PRACTICES

1 Identify the parasites

Which parasites infect cattle?

SKIN:

- Lice
- Mites
- Flies
- Ticks

GASTROINTESTINAL TRACT:

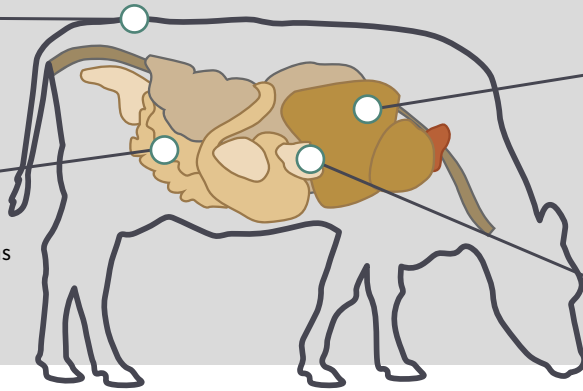
- Gastrointestinal tract nematodes - gutworms
- Coccidia
- Rumen fluke

LUNG AND TRACHEA:

- Lungworm

LIVER:

- Liver fluke



How can you tell which parasites infect your cattle?

Proper diagnosis is crucial to make a sound decision about parasite control strategies.

Current diagnostics identify parasite presence and indicate relative level of infection. This is a critical indicator of potential impact on an animal or herd and is vital information in making the decision as to which treatment protocol to implement. Diagnostics can identify what parasite is present to allow an appropriate product with the right spectrum of action to be selected.



Parasites can be internal (endo) or external (ecto), and can use animals as

hosts or live in their surroundings, in the manure and on the pasture (free living stages). They vary depending on the climate, season and husbandry/management.

Parasites can have a negative impact on growth, weight gain, productivity, reproductive health and can even lead to the death of the animal in severe cases.

Utilising diagnostic tools will identify which parasites are of concern and help decide on appropriate treatments.



FAECAL EGG COUNT (FEC)

The immunity that young cattle develop in the months after turnout and first exposure to worms, means that FECs do not provide an accurate measure of worm burden after this time. However, pooled FECs can be used to assess the level of egg shed onto pasture. Monitoring trends over the grazing season can provide some insight into worm challenge.



LIVWEIGHT

A worm challenge is the most likely cause of impaired growth in otherwise healthy animals receiving appropriate nutrition. Regular weighing can identify those individuals that are at risk of subclinical disease and enable targeted treatment to take place.



PEPSINOGEN CONCENTRATION

Blood pepsinogen tests can be performed at the end of the grazing season to assess the level of exposure/challenge to *Ostertagia ostertagi* that youngstock have experienced. The results can be used to assess worm control strategies and give insights into immune status.¹



BULK MILK ELISA TEST

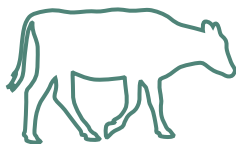
Testing bulk milk samples for antibodies to *Ostertagia ostertagi* provides an indication of the level of worm exposure that cows have received. The results can be used to inform treatment strategies but antibodies will remain elevated for several months after worm exposure even if treatment takes place.²

2 Identify the animals to treat

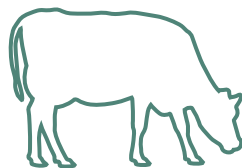
When animals are put on pasture, **some are more susceptible to parasitism than others.** The parasite control programme will vary depending on their age and level of immunity.



Non-immune or naïve calves are very susceptible to parasites in their first grazing season. The parasite burden in the animal can impact animal performance and even result in clinical disease and death. A treatment during the grazing season is usually necessary.



During the second grazing season, diagnostics should be considered. Treatment may or may not be indicated. If no treatment is given at the start of the grazing season, cattle should be monitored closely and further diagnostics done later in the season.



After around eight months of effective contact with infective larvae, adult cattle develop immunity to gutworm species. Nevertheless, the impact of a parasite burden should be monitored though diagnostics and treatment administered accordingly.

Why is establishing immunity important?

The development of immunity is progressive. When established, it³:

- Reduces the proportion of ingested larvae that develop into adult worms
- Reduces the number of worms carried by individual animals
- Reduces the number of eggs shed by adult female worms

Immunity contributes to a reduction in the parasite load in animals.

A sufficient time of effective contact⁴ (TEC) with the infective larvae of parasites is necessary to build up immunity. In cattle, eight months is considered an adequate TEC.

3 Manage pasture properly

Pasture management is an essential component of parasite control. It is often estimated that 95% of parasites are on the pasture and only 5% in the animal⁵.

Parasitic load on the pasture depends on the season, temperature, humidity, animal density, forage type, and rainfall, as well as the parasite control practices implemented by the farmer and on neighbouring farms.

All these variables need to be taken into account to reduce the parasitic load and minimise the impact on productivity on your farm.

95%
on pasture

5%
in host



- **Prioritise low risk pasture for high risk animals.**⁶
- **Rotate animals out of a pasture before they eat the grass down to an extreme**⁶.
The closer to the ground the grass is, the more likely animals are to ingest a higher number of parasite larvae.
- **Reduce the density of animals on pasture.** This will mean animals don't need to feed near faecal pats and thereby decreases the risk of ingesting parasites.
- **Encourage 'refugia'**⁷. Seek to preserve a population of worms that are genetically diverse with a low prevalence of resistance genes, both on pasture and in untreated animals.
- **Strategically coordinate parasiticide treatments with pasture grazing season.**
- **Rest grazing for a season, if possible, or use it to graze other species.**



- **Do not use pasture where the grass is too short**⁶.
80% of parasites are concentrated in the first 5 centimetres of grass. Supplement grazing with hay when the grass gets too short.
- **Do not allow animals to drink directly from rivers and streams.** Give preference to water tanks sited on dry ground.
- **Do not spread manure that has not been effectively composted.**
- **Do not overlook the risk of rotational grazing strategies with a 2-3 week cycle.** This could mean that cattle return to the pasture as the larval contamination peaks.

4 Adopt a sustainable parasite control strategy



A sustainable approach involves the correct use of anti-parasitics[®]: the right dose, the right product, at the right time, and on the right animals. Historically it was common to worm the entire herd. Blanket worming of all animals results in increased selection for resistance.



To achieve sustainable parasite control on a farm, you will need to:

- Keep in mind animal age, time of year, estimated length of grazing season, type of parasites, and production goals.
- Keep accurate records. Know what you did, when you did it, and to which cattle.
- Incorporate diagnostic tests (e.g. FEC) to better understand your herd's parasite burden and to locate 'problem' animals.
- Manage refugia. Do not treat all animals in the herd at the same time.
- Choose the best anti-parasitic for your situation and then check its effectiveness using post treatment diagnostic testing.

4 Adopt a sustainable parasite control strategy

Adopt the right treatment approach based on your needs

- **Strategic treatment**

Plan the treatment of groups of animals based on previous experience/history to minimise worm burden, pasture contamination, and disease.

- **Targeted treatment (TT)**

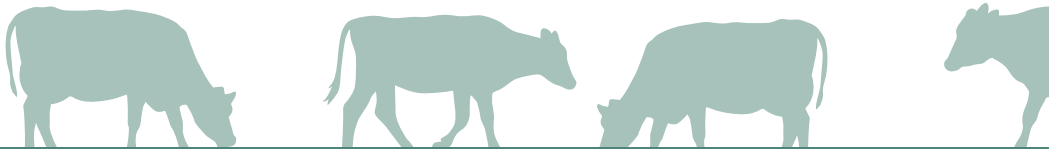
Treatment of groups of animals based on assessment of current parasite risk. For example, treating in the first grazing season when FEC indicates. This can be part of refugia strategy.

- **Targeted selective treatment (TST)**

Treatment of individuals or subgroups based on an assessment of current parasite risk (e.g. treating only poorer doing calves). Leaving a small proportion of animals untreated is often discussed. This can be part of refugia strategy.

- **Therapeutic treatment**

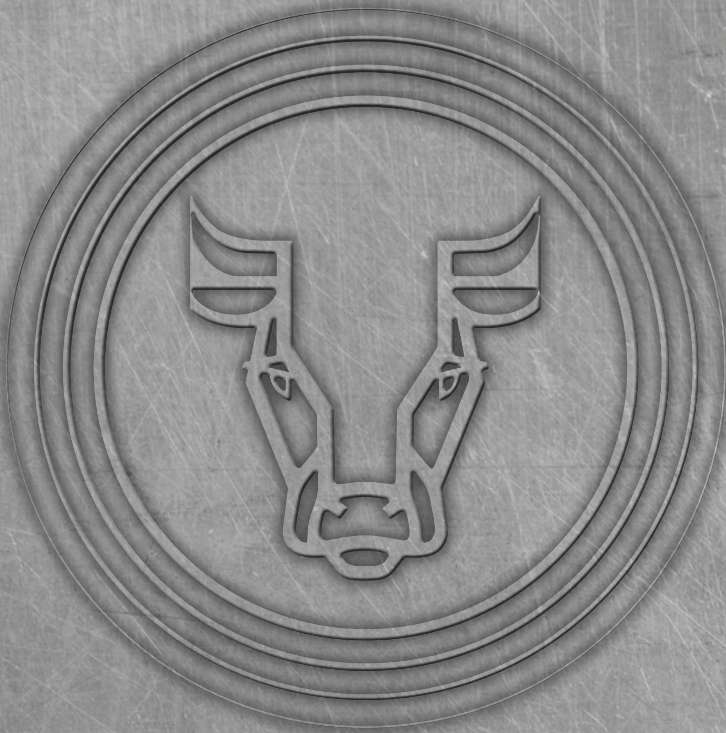
Treatment in response to clinical disease.



Use anti-parasitics properly

- Choose the **right parasiticide** for the parasites you are treating (diagnostics can help identify the parasite).
- Use the **proper dose based on individual animal weights** (don't dose on 'average' or estimated weights).
- Use the **recommended application device** whether for oral, pour-on, or injectable administration. Keep equipment maintained and clean.
- Use **appropriate animal restraint** with good cattle handling equipment.
- Use the **parasiticide at the appropriate time** by taking into account the life cycle of the parasite and the time of year.
- Consider the **animal classification** (calves, second season grazers, cows, dairy, beef etc) when choosing the right product and pay attention to the relevant withdrawal periods.
- Consider **production targets and the length of parasite exposure** to determine the duration of activity needed in the product.
- Check **product efficacy** by performing a post-drench FEC.





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