

Managing Parasites

RESPONSIBLE 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:

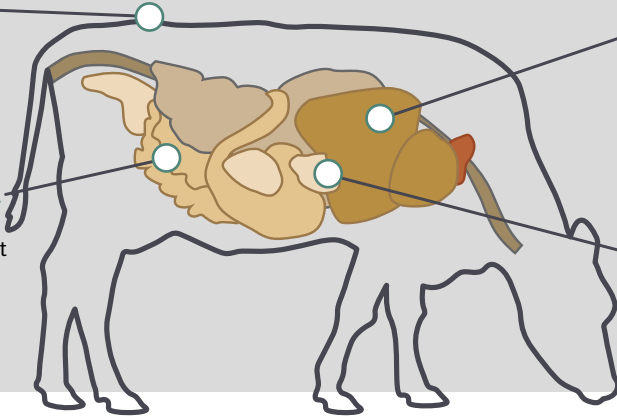
- Gastrointestinal tract nematodes (worms)
- *Cryptosporidium*
- Coccidia
- Rumen flukes

LUNG AND TRACHEA:

- *Dictyocaulus viviparus* (lungworms)
- Pulmonary strongyles

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. Some diagnostic tools provide the identification of the worm, which allows selecting the product with the right spectrum of action.



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 most common diagnostic test for GI nematodes. A faecal sample is collected and after dilution and microscopic identification and counting, results are reported in eggs per gram of faeces. This helps identify the parasite burden.



LIVELWEIGHT

As parasites reduce liveweight gain, regularly weighing cattle and intervening when growth is lower than expected ensures that parasites do not cause excessive production loss.



PEPSINOGEN CONCENTRATION

Blood serum pepsinogen concentration thresholds vary between laboratories¹.



OPTICAL DENSITY RATIO (ODR)

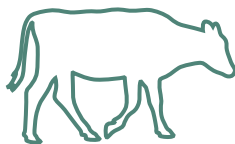
ODR is an ELISA-based test to detect *Ostertagia ostertagi* in milk samples from dairy cows. Also called the MOO test (Milk *Ostertagia ostertagi*), it can be used on an individual or herd level. It detects antibodies against *Ostertagia* in milk samples².

2 Identify the animals to treat

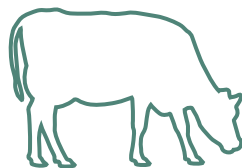
When animals are put on pasture, **some are more susceptible to parasitism than others**. The parasite control programme will vary depending on their age and level of immunity.



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 diseases (diarrhoea, death). A treatment during the grazing season is usually necessary.



During 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 8 months of effective contact with infective larvae adult cattle develop acquired immunity against some parasites. Nevertheless, the impact of parasite burden should be monitored though diagnostics and treatment administered accordingly.

Why is establishing immunity important?

The development of immunity is progressive. When established, it helps in³:

- Reduction in size of the adult roundworm parasites
- Reduction in egg laying of female roundworm
- Reduction of inhibition of fourth stage larvae
- Reduction in the establishment of the larvae
- Expulsion of the adult 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 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 in your farm.

95%
on pasture

5%
in host



- **Introduce pasture rotation rather than continuous grazing on a single pasture⁶.**
- **Rotate animals out of a pasture before they eat the grass down to an extreme⁶.**
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 decrease the risk of ingesting parasites.
- **Encourage "refugia"⁷.** Rotate between non-treated animals and treated animals on the same plot, or leave a percentage of cattle untreated.
- **Strategically coordinate parasiticide treatments with pasture grazing season.**
- **Leave a plot unused for animal grazing for one year.**
- **Mix different animals** (cattle, sheep and horses) on the same pasture to help reduce contamination.



- **Do not use pasture where the grass is too short⁶.**
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.**

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 deworming of all animals results in increased anti-parasitic 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.
- Consider adopting the practice of refugia. Do not deworm all animals in the herd at the same time.
- Choose the best anti-parasitic for your situation and then check its effectiveness using a Faecal Egg Count Reduction Test (FECRT).

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 (can be part of refugia strategy).

- **Targeted treatment (TT)**

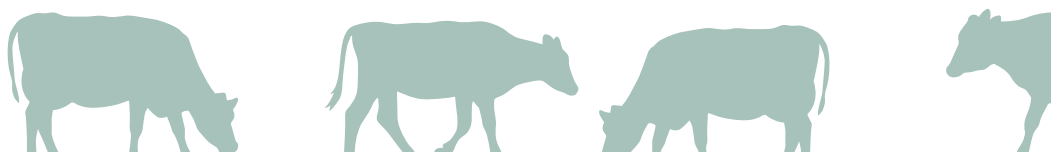
Treatment of groups of animals based on assessment of current parasite risk (e.g. treating at first grazing season when FEC indicates it) (can be part of refugia strategy).

- **Targeted selective treatment (TST)**

Treatment of individuals or subgroups based on an assessment of current parasite risk (e.g. treating only poorer doing calves). Often discussed is leaving a small proportion of animals untreated (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 for (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.

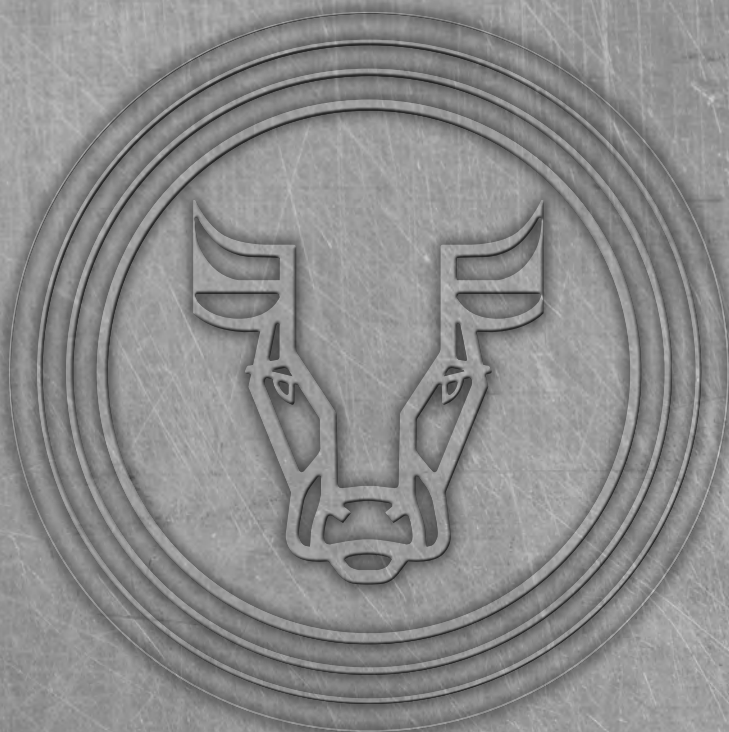
- Use the **parasiticide at the appropriate time** by taking into account the life cycle of the parasite and the time of year.

- 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** (FECR) or post drench efficacy test.





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