

# Rumen Fluke - The facts



Adult rumen fluke attached to the lining of the rumen of a cow. Magnified c. 4x life size.



AHI gratefully acknowledges the financial and other contributions of our stakeholders.



*Contributing to a profitable and sustainable farming and agri-food sector through improved animal health*

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## Introduction

Rumen fluke are parasites of ruminants and occur worldwide. They have a snail intermediate host. The adult parasites live in the rumen (stomach) and the immature larval forms live in the small intestine. Clinical disease is due to intestinal damage caused by massive numbers of larvae in the intestine. The adult worms in the rumen are not usually considered to cause disease.

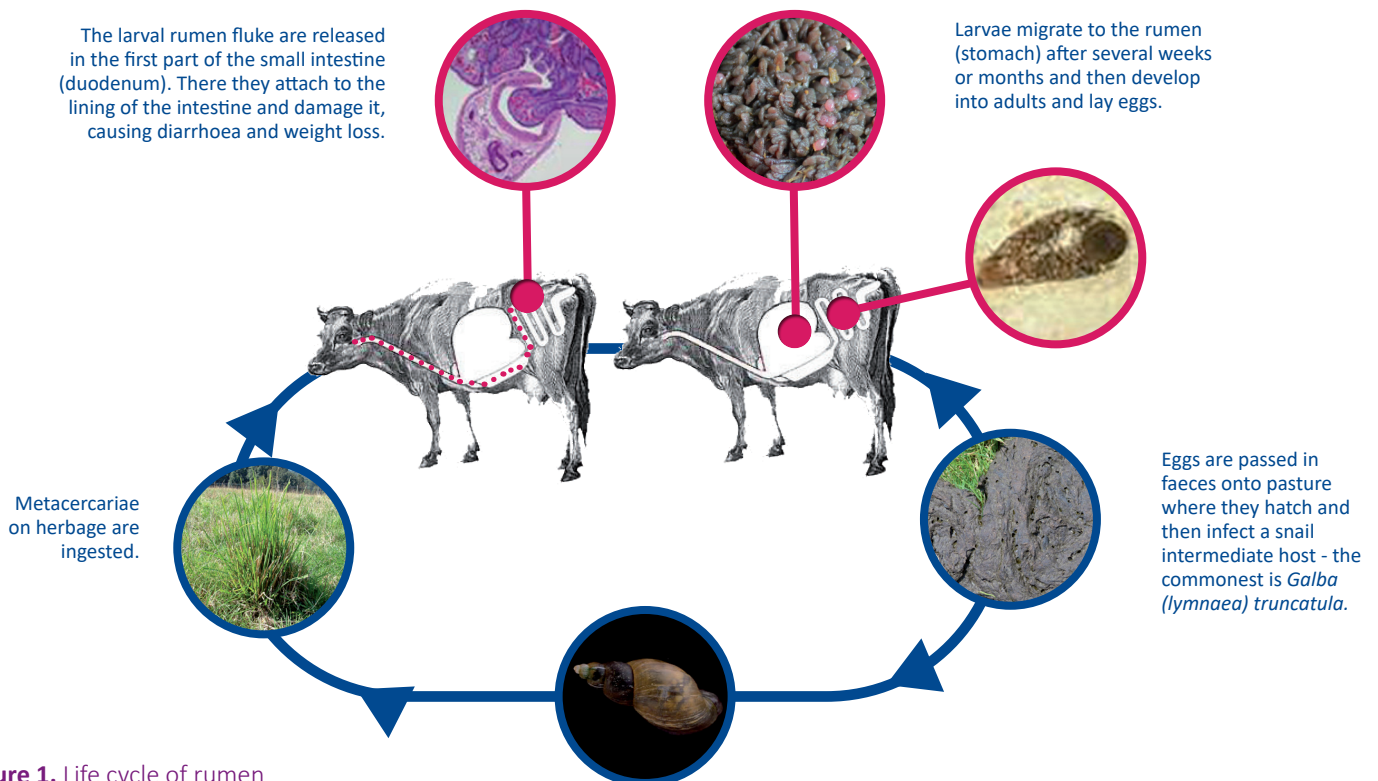
In recent years, the prevalence of rumen fluke in Ireland has increased. A few fatal cases have been recorded by the regional veterinary laboratory service and veterinary practitioners in practice see occasional cases of clinical disease.

Many cattle have small numbers of adult rumen fluke in their stomachs and have rumen fluke eggs in their faeces. Small numbers of adult parasites cause little or no damage. **It is important to distinguish between the mere presence of rumen fluke in animals that are performing well and disease associated with rumen fluke.**

This leaflet will give you some background information on rumen fluke. Your veterinary practitioner will help you reach a diagnosis and decide if a control programme for rumen fluke is required on your farm. Liver fluke and rumen fluke can be found on the same farm so **remember that liver fluke disease is always harmful and should be given priority, whereas rumen fluke only rarely causes disease.**

## Life Cycle

Preliminary scientific investigation suggests that the principal (if not the only) rumen fluke in cattle in Ireland is *Calicophoron daubneyi* which uses the mud snail *Galba (Lymnaea) truncatula* as its intermediate host. This snail also acts as the intermediate host for the liver fluke *Fasciola hepatica*.



**Figure 1.** Life cycle of rumen fluke *Calicophoron daubneyi*. Both cattle and sheep are equally susceptible to infestation

## What are the signs that rumen fluke may be a problem in your herd?

Clinical disease occurs occasionally with the following signs:

- Dullness.
- Dehydration.
- Rapid weight loss.
- Severe watery scour, which may contain traces of blood.
- Low blood protein concentrations.
- Swelling under the jaw, known as bottle-jaw.

Left untreated, severely affected animals may die due to dehydration.

The clinical signs described above are not exclusive to rumen fluke, so diagnosis by clinical signs alone is unreliable. However, certain features of the disease such as severe scour and weight loss, abnormally low levels of albumin (a blood protein) in blood samples combined with a history of grazing wet ground, especially in the late summer or autumn would raise suspicions. Demonstration of rumen fluke in a faecal sample (eggs/larvae) would help confirm the diagnosis.

Laboratory testing will readily detect eggs in the faeces of an animal carrying adult rumen fluke. The eggs superficially resemble those of liver fluke, but laboratory analysts can easily differentiate between them. It is much more difficult to confirm disease caused by the immature fluke (*larval paramphistomosis*) but sometimes laboratory testing may demonstrate rumen fluke larvae in faeces. This test may not be widely available and negative findings do not necessarily rule out the diagnosis. To detect rumen fluke eggs or larvae, the laboratory will require approximately 20 grams of faeces (a dessert spoonful), packed in a watertight, clean, non-breakable container, and marked with the animal's tag number or other identification. Blood samples are required to test for blood proteins.

If disease caused by immature rumen fluke is suspected, a faecal sample may be checked for eggs and larvae. (Occasionally, small numbers of eggs may be present in larval paramphistomosis). In very severe cases, observed by the Irish Regional Veterinary Laboratories, large numbers of immature rumen fluke have been found in the faeces.

The finding at post mortem examination of large numbers of larval rumen fluke attached to the wall of the small intestine in an animal that showed the clinical signs described above is a very reliable way of confirming the diagnosis of severe disease due to immature rumen fluke (*larval paramphistomosis*). Note that carcasses must be fresh for accurate diagnosis as larvae detach from the intestinal wall shortly after the death of the host animal.



Rumen fluke egg

Photo courtesy of Jim O'Donovan RO, Athlone RVL.

**Contact your own veterinary practitioner to plan rumen fluke investigation and control programme**

## Why does disease due to rumen fluke occur?

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Cattle appear to be more susceptible to rumen fluke infection if they are young, sick or poorly nourished. However, if there are very large numbers of infective larvae on pasture such as in heavily grazed WET areas, all cattle are susceptible. Grazing damp or waterlogged pastures is a significant risk factor, especially in a wet summer.

Traditionally, the rumen fluke was not considered to be a significant parasite of Irish cattle, mainly because it was only seen in very low numbers, and was not associated with clinical disease. In recent years, however, a number of very severe outbreaks, with multiple fatalities, have focused attention on the rumen fluke. The characteristic eggs have been increasingly detected in faecal samples over the same period. This may be partly due to increased awareness of the parasite and separate reporting by laboratories of liver fluke and rumen fluke eggs but recent examination of archived samples indicate that the increase in incidence is real.



Grazing on damp or waterlogged pastures is also a significant risk factor, especially in a wet summer.

## How can I control Rumen Fluke in my herd?

### Reduce exposure

Reduce the possibility of exposure to rumen fluke larvae on pasture. Restricting access to fields, or parts of fields, which are or have been wet or water logged will reduce exposure to contaminated herbage. The fencing-off of drains, ponds and watercourses should also reduce exposure. These measures also have the added benefit of reducing exposure to liver fluke.

**Most drugs that kill liver fluke do not kill rumen fluke**

### Treatment - Flukicidal drugs

Most of the drugs that control liver fluke DO NOT kill rumen fluke. Although not specifically licensed in Ireland for the treatment of rumen fluke, it has been reported in the scientific literature that oxyclozanide can kill both mature and immature stages of this parasite. The dosages and treatment frequency described in the literature for oxyclozanide against rumen fluke differ from those recommended for liver fluke control and expert advice on this should be sought. Oxyclozanide is not effective against immature liver fluke, but it will kill immature rumen fluke. After treatment, cattle may occasionally show transient scouring and lack of appetite and dairy animals may have decreased milk yield.

Current veterinary advice to prevent the development of resistance is to avoid the over-use of any flukicide. Routine treatment for rumen fluke is rarely justified except on farms where severe clinical disease has been confirmed in the past. Even in these cases, treatment should only be administered when clinical disease has been diagnosed as this drug has no persistent effect against rumen fluke.

Close monitoring is essential on farm, and for the best advice on treatment and control options, you should consult with your own veterinary practitioner.



Photo courtesy of Merial, Lyon, France

The mud snail, *Galba truncatula*; the intermediate host of liver (*F.hepatica*) and rumen fluke (*C. daubneyi*).

## How should I approach the treatment of rumen fluke on my farm?

It is important to remember that the detection of rumen fluke eggs in faecal samples, or the detection of the adults in small numbers in the rumen is not in itself a reason to institute specific control measures, as light infections appear to have no effect on animal health or productivity. The routine implementation of a preventive dosing regime for rumen fluke is rarely justified, except on farms where severe disease and losses have been confirmed in the past. Because of the rarity of severe outbreaks, such a control programme would be best designed and tailored for the specific farm in question, following consultation with your own veterinary practitioner. Such a programme would aim to use treatment in a strategic manner to reduce pasture contamination, in association with other measures mentioned previously.

Apart from the economic costs that arise from unnecessary use of any anti-parasitic drug, it is especially important to treat rumen fluke sensibly and sparingly, given that there is only one effective compound (oxyclozanide). The development of oxyclozanide-resistant strains of rumen fluke must be avoided and there is a heightened risk of resistance if a single compound like oxyclozanide is used indiscriminately over several years. It is important that management of rumen fluke is undertaken as part of a comprehensive parasite control programme that will control liver fluke, gut worms and lungworm (hoose) as well as rumen fluke.

**Do not treat rumen fluke unless clinical signs are present**

**THIS DOCUMENT HAS BEEN PREPARED BY THE ANIMAL HEALTH IRELAND PARASITE CONTROL TECHNICAL WORKING GROUP.**

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