

# Liver Fluke Disease in CATTLE

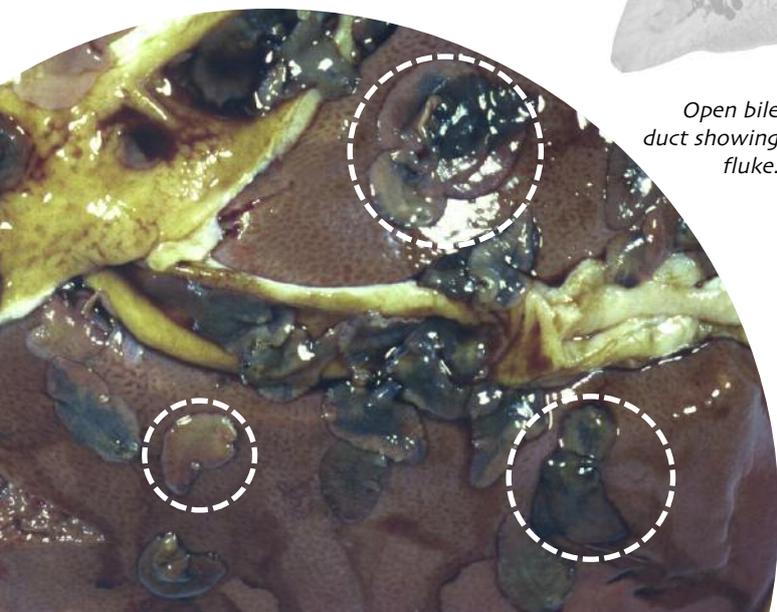
The liver fluke (*Fasciola hepatica*) is a flat leaf-like parasite found in the tissue and bile ducts of the liver. Although the adult parasite only measures 2-3 cm, it causes severe damage to the cattle it infects and costs Scottish farmers millions of pounds each year due to lowered production of infected animals. Cattle fertility and milk yields can also be reduced significantly by this parasite.

## Cost Of Fluke Infection

- Occasional deaths due to acute or untreated chronic infections.
- Losses due to condemnation of livers.
- Reduced live weight gain.
- Lower feed conversion efficiency.
- Reduced conception and calving rates.
- Lower milk yield and quality.

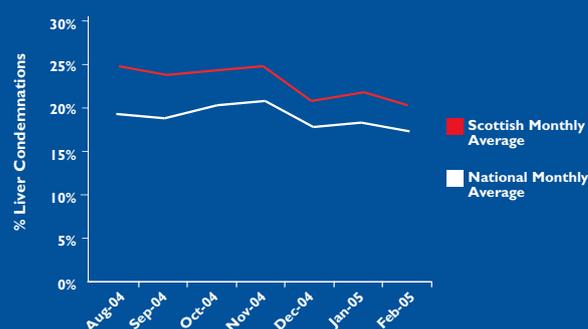
Liver fluke is a significant problem for cattle farmers in Scotland. Between July 2004 and June 2005 over 110,000 cattle livers were condemned in Scotland, which is about a fifth more than the UK average (see Figure 1). This equates to 22% of cattle livers over the same period.

Chronic fluke infections in growing cattle can depress liveweight gain by an average of 0.5kg/week, but can be as high as 1.2 kg/week. Current estimates therefore suggest that the parasite can lead to a 10-15% reduction in market value per finished animal. Studies in dairy cows have shown that fluke infections can reduce calving rate by up to 30% and milk yield by 0.5kg per day.



Open bile duct showing fluke.

FIGURE 1 *Liver Fluke: Cattle Liver Condemnations*



Data supplied by Novartis Animal Health Fluke Warning

However, both dairy and beef producers can minimise any financial loss associated with this parasite, by learning more about fluke infections and by developing an effective treatment and management strategy.

## Damage Caused By Liver Fluke

This depends on the type of infection.

- **Acute Infections:** are caused by the migration of masses of young immature flukes through the liver, leading to extensive damage to the tissues and blood vessels resulting in haemorrhage. Cattle tend to be more resistant to the parasite so deaths due to acute infections are very rare in cattle.
- **Chronic Infections:** are more common in cattle and are usually seen in late winter/early spring. These are mainly associated with adult flukes within the bile ducts. The resulting damage to the wall of the ducts and their blood-feeding activity can lead to anaemia. Chronic fluke infections have severe effects on production with greatly lowered weight gains, milk yields and predispose cattle to metabolic diseases.

## Is Liver Fluke Disease A Problem On Your Farm?

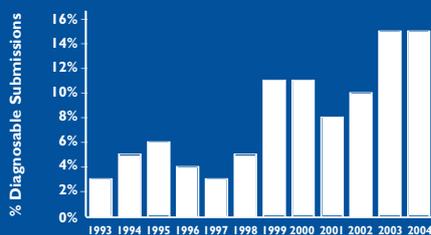
If you farm in an area where liver fluke is a problem, it is important that you monitor your stock closely. Liver fluke disease can be diagnosed on the clinical signs described above, but your vet can take blood tests to look for liver damage or conduct faecal examinations to look for fluke eggs. Ask your abattoir for reports on the fluke status of the livers of the cattle you send for slaughter.

*Fasciola hepatica* has a complicated life cycle that takes 18-20 weeks and is dependent on a mud snail and certain climatic conditions in order to complete the entire cycle.

## Why Is Liver Fluke Increasing In Scotland?

Cases of fluke disease in cattle grazed in Scotland have increased in recent years (see Figure 2) and there have been reports of fluke in areas which have previously been considered too dry to consistently maintain mud snails. This may be due to milder winters, warmer and wetter spring, summer and autumn seasons which will favour snail survival and increase the season of snail activity and fluke development. Some management practices also contribute to the problem.

FIGURE 2 *Outbreaks of Liver Fluke in Cattle in Scotland*



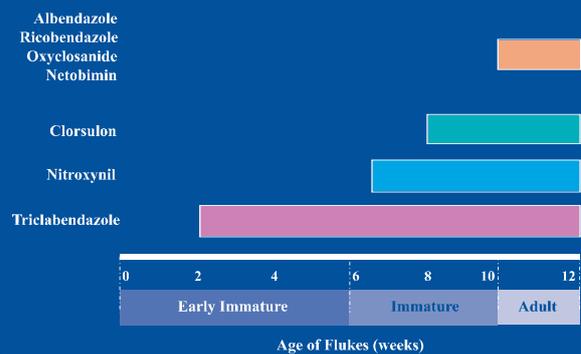
- **Farm Management:** Moving untreated cattle or sheep from endemic fluke areas can establish infections on farms that didn't have a fluke problem previously. On many mixed farms, cattle are often not treated for liver fluke as generally they are more tolerant of fluke than sheep, showing less clinical signs. Be aware that some wildlife (such as deer and rabbits) may also introduce fluke infection into new areas.
- **Flukicide Resistance:** Although resistance to flukicides is very rare in cattle it is important to:-
  1. Regularly monitor the effectiveness of the flukicides on the farm.
  2. Adopt a rotation of drugs to prevent using one chemical family of flukicide for several years. Remember that some flukicides are effective against immature flukes and others only show efficacy against adult flukes (see Figure 3).

The fact that the liver fluke requires two hosts to survive gives an opportunity for farmers to attack the parasite through either host or its habitat.

## Protecting Your Herd From Disease

- Try not to graze cattle close to muddy ponds or ditches or on heavy low lying pastures. Boggy areas should be fenced off if possible and drainage should be considered on farms with a fluke problem.

FIGURE 3 *Estimated Flukicide Efficacy in Cattle*



- Try and prevent fluke infection from being imported onto your farm with newly introduced sheep, goats or cattle. Your vet or specialist advisor will help you develop an effective quarantine strategy for any new stock. Where likely snail habitats exist, treat all bought-in livestock with a flukicide that kills immature fluke and if possible keep treated imported animals on drier pastures or housed for 3-4 weeks.

## Treating Fluke Disease

The following treatment schedules are meant as guidelines only and apply to an average rainfall season. **Your veterinarian will be able to advise you about specific treatment strategies for your stock.**

- **Autumn:** Irrespective of whether cattle will be housed or out-wintered, dose them with a flukicide which is effective against immature fluke to reduce liver damage.
- **Winter:** Dose grazing cattle with a flukicide which kills both immature stages and adult fluke. In-wintered cattle need to be treated after housing (timing of the dose varies with the flukicide used).
- **Spring:** Dose out-wintered cattle with a flukicide which is effective against adult stages. This will remove fluke burdens, lower the deposition of eggs onto pastures and thus reduce the summer infection of snails.

Dairy cows can be treated at drying-off as many flukicides should not be used during lactation (see manufacturers withdrawal periods for milk).

Further treatments may be necessary in high risk fluke areas if the spring/summer has been very wet. Frequency of treatment will also be influenced by the spectrum of activity of the flukicide.

*MoreDun would like to acknowledge Dr George Mitchell, SAC Auchincruive for his help in the production of this factsheet.*

