COWS guide to liver fluke – take action

COWS
Control Of Worms Sustainably
Promoting sustainable control of cattle parasites

Every year around 22% of cattle livers are identified as being infected with liver fluke across abattoirs in Great Britain, equating to losses of up to £3 million at abattoir level alone, not counting the more significant on-farm losses. Now is the time to find out how to take action against this parasite.

The risk to performance

Liver fluke can infect both cattle and sheep, as well as other species of domestic livestock. It has the potential to impact performance, as well as increase an animal's susceptibility to other infections such as *Salmonella*, TB and *Clostridium spp*.

Mature fluke feed in the bile ducts in the liver, where they cause thickening of the lining of the ducts and damage in the liver tissue.

In sheep, infection with large numbers of immature fluke can quickly cause serious losses and even death. In cattle, chronic disease associated with the presence of adult fluke is the most common manifestation of infection, and can result in performance setbacks.

Understanding the life cycle

The liver fluke life cycle involves an intermediate host, a mud snail, and two free-living stages of the fluke.

Infection is seasonal, with a peak of infective cysts typically seen on pasture in early autumn, leading to the main risk of disease in cattle over the winter.

This seasonal pattern is due to the free-living stages of liver fluke, and the snails only being active at environmental temperatures greater than 10°C. However, infective cysts can be present on pastures all year round due to their ability to survive for up to a year or more when conditions are right.

Weather patterns affect infection rates, with mild winters and wet and warm summers being particularly problematic.

It takes approximately three months for the parasite to develop on the pasture, and a further three months for adult fluke to develop and start to lay eggs after cysts are ingested, meaning the complete liver fluke cycle can take up to six months.

Methods to diagnose liver fluke

Test type	Details
Abattoir feedback	Always request abattoir feedback when animals are sent to slaughter. This can help identify live fluke in the liver, as well as if the liver has been damaged by fluke, even if no live fluke are present. If any signs of fluke are recorded then speak to your vet, SQP or veterinary pharmacist about options for effective future management.
Faecal samples	This involves the detection of fluke eggs in dung. Be aware that false negative results can occur with these tests, particularly if the fluke burden is predominantly juvenile.
ELISA tests	Serum or milk samples can be used to detect antibodies using an ELISA test, usually detected two to three weeks after infection. Antibodies can however persist for a period after treatment, and therefore the test does not prove that liver fluke infection is currently present, just that the cow has been infected in the past.

Diagnosis can be carried out at a herd level to check for exposure, or at an individual level if there is concern about clinical signs in a particular animal. For a herd or group test, a minimum of 15 animals should be sampled to increase the chance of detecting infection, if present.

Controlling liver fluke

Neither cattle nor sheep develop immunity to liver fluke so it is import to control infection in all ages of stock.

(Philip Skuce, Moredun)

Control of liver fluke depends on:

- The type of farm
- History of the herd
- Choice of flukicide
- Grazing strategies

When it comes to treating cattle for liver fluke, make sure you speak to your vet, SQP, farm adviser or veterinary pharmacist for advice on implementing an effective control plan and choosing which flukicide is most appropriate to your system.

Most flukicides don't kill all stages of liver fluke. It's therefore important to choose an appropriate product and to administer it at the correct dosage at the most suitable time according to the life cycle of the parasite. Treatment of dairy cattle needs particular care, and attention paid to which drugs can be used in dairy cows or in-calf heifers, with consideration to milk withdrawal periods.

Triclabendazole is the only product effective against early immature fluke i.e. two weeks and older, through to adults. It is used extensively to control fluke in sheep and, as a result, triclabendazole resistance has been reported in some parts of the UK. It is important that care is taken to reduce selection pressure where possible by only using triclabendazole-containing products when no resistance is present, and when no other option is suitable.

Most flukicides have no persistent activity, and allowing cattle onto fluke infected pasture after treatment re-exposes them to the risk of infection. If cattle are housed after treatment, then there is a very low risk of picking up new infection until they are turned out again. However, if they are turned back out after treatment, try to ensure that they are moved on to 'low risk' areas. Cattle that remain on highly contaminated pasture should be monitored for infection, as further treatments may be needed.

Summary of different flukicidal products licensed for use in cattle

Active ingredient	Administration route	Stage of fluke killed
Triclabendazole	Oral	2 weeks onwards
	Pour-on	6-8 weeks onwards
Closantel	S/c injection or pour-on	7 weeks onwards
Nitroxynil	S/c injection	8 weeks onwards
Clorsulon	S/c injection	Adults only
Oxyclozanide	Oral	Adults only
Albendazole	Oral	Adults only

Timing of treatments

Treatment at, or ideally after housing, is a good time to control liver fluke infection as reinfection is avoided. Additional treatments during winter may be required depending on the product used for fluke control around housing time. Following turn-out, cattle may benefit from treatment after 10 to 12 weeks to help reduce contamination of pastures with fluke eggs.

COWS recommend speaking to your vet, SQP, farm adviser or veterinary pharmacist about fluke control to ensure a tailored plan is implemented that's suited to your farm and herd situation.

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