

Managing Parasites in Beef Cattle

LIVER FLUKE



Global Leaders in Parasiticides



MANAGING LIVER FLUKE

What's the problem?

The liver fluke, *Fasciola hepatica* is a parasitic flat worm that affects cattle and sheep, and is often associated with wetter pastures.

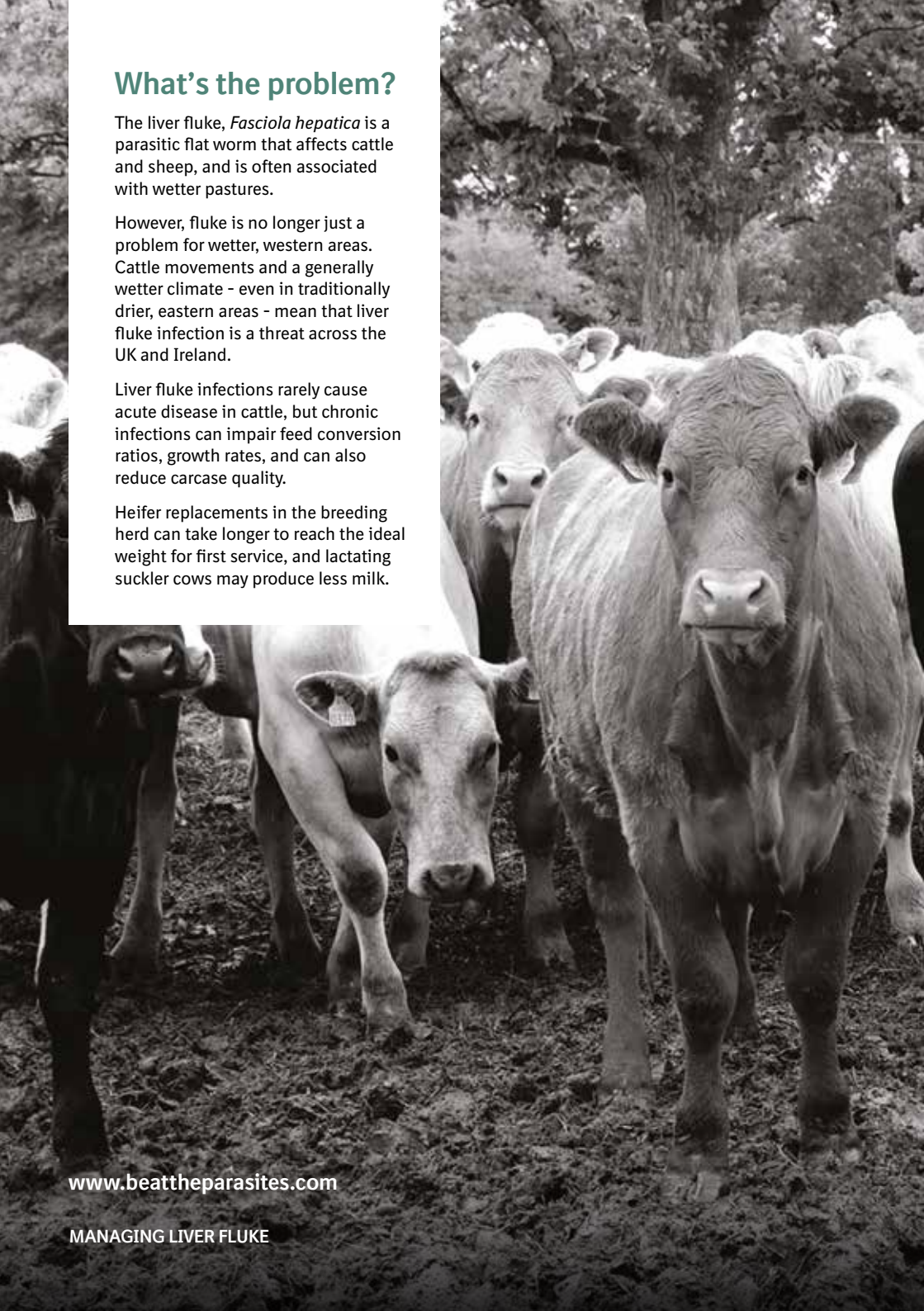
However, fluke is no longer just a problem for wetter, western areas. Cattle movements and a generally wetter climate - even in traditionally drier, eastern areas - mean that liver fluke infection is a threat across the UK and Ireland.

Liver fluke infections rarely cause acute disease in cattle, but chronic infections can impair feed conversion ratios, growth rates, and can also reduce carcase quality.

Heifer replacements in the breeding herd can take longer to reach the ideal weight for first service, and lactating suckler cows may produce less milk.

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Why does it matter?

Fluke feeding on blood in the bile ducts can cause anaemia. Fluke infection can also lead to hormonal and metabolic imbalances, impacting on reproduction in female animals¹.

Affected animals may also be more susceptible to secondary bacterial infections, such as *Salmonella* and *Clostridia*¹.

Beef cattle losses range from £30 – £200 per head, with up to an 80kg reduction in market weight due to fluke². AHDB Beef and Lamb estimates that fluke damage can cost cattle farmers up to £90 per head through poorer growth rates and carcass quality alone, even before any further losses at the abattoir from damaged liver tissue³.

The presence of fluke at slaughter and evidence of historic fluke damage makes cattle liver less valuable and may result in condemnation at the abattoir, resulting in the loss of fifth quarter income. In 2014, the Food Standards Agency reported that 22% of cattle livers in England and 27% in Scotland and Wales were condemned due to fluke damage⁴.

Overall, fluke infection has been estimated to cost UK agriculture about £300 million each year⁵.

Metacercariae ingested with grass.

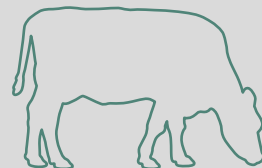
Cercariae attach themselves to blades of grass, where they encyst to form metacercariae.

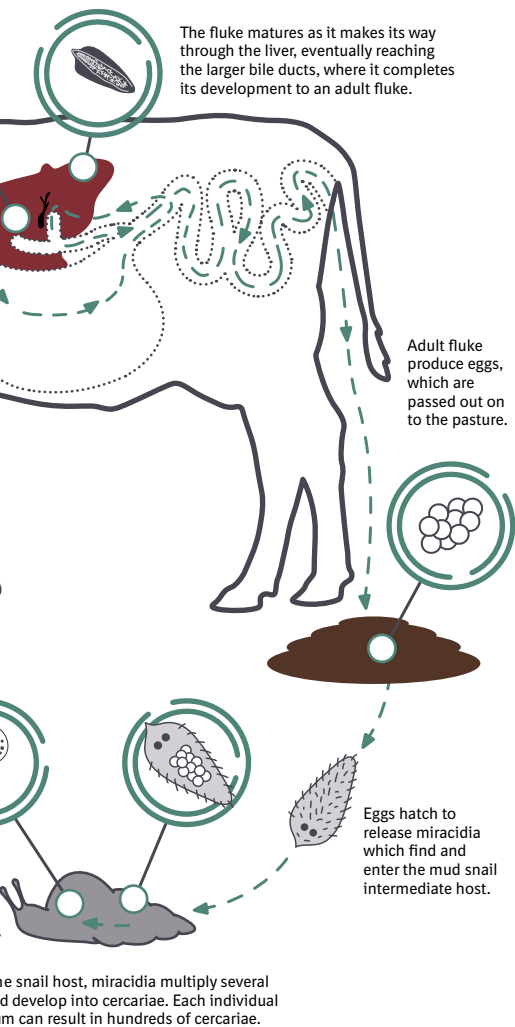
The immature fluke tunnel through the liver tissue and enter the small bile ducts.

Once ingested, the metacercariae break open to release the immature fluke which migrate through the gut wall and abdominal cavity to the liver.

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How to control liver fluke





Lifecycle of the liver fluke

The adult stage of the liver fluke lives in the liver of infected animals, specifically in the bile ducts. Adult fluke lay eggs which are passed along the bile ducts and into the intestine, where they are excreted in dung. Once outside the animal, eggs can survive for several months, but usually hatch within 2-20 weeks depending on soil type and ambient temperature.

Freshly hatched larvae, called miracidia, depend on a secondary host - the mud snail *Galba truncatula* - to complete their life cycle. After entering the snail the miracidia multiply several times and develop into cercariae. After around six weeks the developed cercariae exit the snail and attach to blades of grass on the pasture, where they form cysts, called metacercariae, ready to be ingested by grazing animals. Each individual miracidium can produce hundreds of cercariae, meaning pastures can become rapidly infective.

After ingestion the cyst breaks open to release the immature liver fluke. This migrates through the animal's gut wall and abdominal cavity to the liver. The maturing fluke tunnels through liver tissue, enters the small bile ducts, and eventually reaches the large bile duct where it develops into an egg-laying adult, to complete the cycle.

Pasture management

Cattle are most likely to be infected when grazing near to the habitat of the mud snail, the intermediate host for liver fluke. Mud snails feed on algae that can be found in wet, muddy areas around water troughs, gateways, tractor ruts and other poached areas. They can also be found in slow moving water such as ponds and boggy low-lying areas of land. Management techniques such as limiting poaching and restricting access to high-risk, wet pastures will help reduce infection.

Bought-in animals

Fluke control should form a part of any quarantine plan to reduce the risk of fluke being introduced to uninfected farms, and the spread of triclabendazole-resistant fluke.

Sequential treatments may be required as part of a quarantine strategy to ensure that all stages of the fluke carried by an animal are effectively removed. Farmers should discuss this with their vet to determine the most appropriate approach for their farm.



Diagnostic testing should be used to determine whether animals require treatment. A number of different tests can be used to assess the liver fluke status of an individual or group of animals. Speak to your vet or animal health advisor to determine which is most appropriate for your farm.

Treatment

While fluke eggs can be shed all-year-round, spring is when levels peak. Therefore, it is important to ensure that cattle are turned out free of liver fluke to reduce the risk of re-infection from pasture later in the grazing season.

Treating cattle at housing to remove liver fluke infection picked up during the grazing season will help ensure that cattle maximise feed conversion over the winter period. Depending on the level of pasture challenge that year and the product used at housing, a follow up treatment in late winter or early spring, before turnout, will help ensure cattle are turned out fluke-free, and do not re-infect pasture with eggs. Diagnostic testing can also help to determine whether a second treatment is required.

In order to manage pasture contamination through the grazing period, a mid-summer treatment at grass may be warranted in high-risk areas. It's useful to know the risk on your farm and build a treatment plan accordingly.

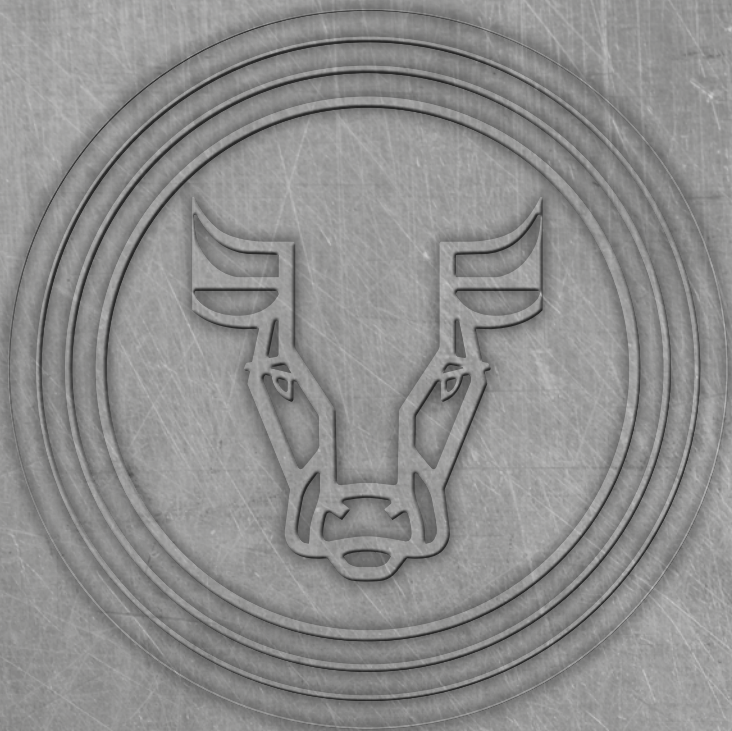
Five active ingredients are available to treat liver fluke; triclabendazole, closantel, clorsulon, albendazole and oxcyclozanide. Resistance to triclabendazole is now widespread. This is the only flukicide effective against the early immature stages of fluke that are responsible for causing acute fluke disease, a condition seen primarily in sheep. Alternative flukicides should be used when immature fluke are not the primary target of treatment to reduce the selection for resistance to triclabendazole. Disease in cattle is predominantly associated with the chronic form of fluke infection, caused by adult and late immature fluke feeding on blood in the bile ducts of the liver.

Understanding the dynamics of fluke infection, the challenge at farm level and the spectrum of activity of the products available will allow appropriate and effective treatment decisions to be made.



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References

1. Charlier *et al.* (2014) Recent advances in the diagnosis, impact on production and prediction of Fasciola hepatica in cattle. *Parasitology* 41, 326–335.
2. Better returns from controlling fluke - ADAS/EBLEX (2012).
3. Wright, N. Economic Impact of Health and Welfare Issues in Beef Cattle and Sheep in England. Final report prepared by ADAS and submitted to EBLEX (17/04/2013).
4. FSA Statistics (2014).
5. COWS - www.cattleparasites.org.uk

IVOMECS® Super Injection for Cattle contains ivermectin and closulone. POM-VPS. Advice should be sought from the prescriber. Further information available in the SPC or from Boehringer Ingelheim Animal Health UK Ltd., RG12 9YS, UK. Tel: 01344 746957. Email: vetenquiries@boehringer-ingelheim.com. IVOMECS® and the Steerhead® logo are registered trademarks of Boehringer Ingelheim Animal Health France SAS, used under licence. ©2022 Boehringer Ingelheim Animal Health UK Ltd. All rights reserved. Date of preparation: Jul 2022. UF-BOV-0091-2022. Use Medicines Responsibly.

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