

Liver fluke

(*Fasciola hepatica*)

factsheet

Key messages

- Liver fluke can cause significant reductions in livestock production and in severe case will lead to death.
- Carcasses of affected animals will be condemned if they show signs of emaciation and oedema.
- Most fluke infections are picked up during summer to early autumn, so late autumn drenches will eliminate flukes collected over summer.
- Drenches during late winter–early spring help to ensure no flukes are available to infect developing snails during mid-summer.

What are liver fluke?

Liver fluke are grey or brown, flat, leaf-shaped parasites that live in the bile ducts of sheep livers.

Adult flukes are about 2cm long and 1cm wide.

Economic impact

Most of the economic cost associated with fluke is through production losses from infections that may not be apparent. Deaths only account for part of this loss — significant losses in sheep include reduced production of meat and wool; lower lambing percentages; poor growth rate of lambs and increased costs for replacement stock.

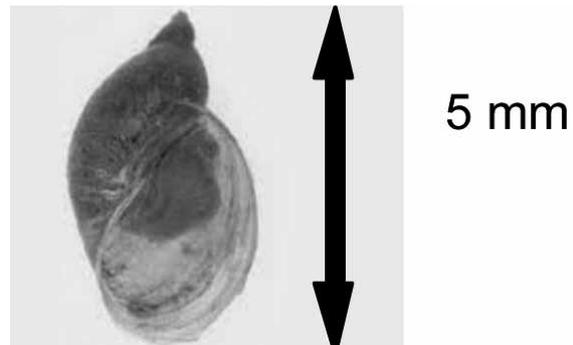
Production losses can be economically significant even in relatively light fluke infections as the fluke suck blood and affect sheep's ability to utilise feed on offer.

In the abattoir, carcasses of affected animals are condemned if they show emaciation and oedema (watery accumulation in tissues of thin animals). Affected livers are condemned.

Parasite life cycle

The liver fluke parasites have a complex life cycle, requiring a host freshwater snail. The most common host in Australia is the fluke snail — a small snail found in swamps, drains, dams, rivers, irrigated pastures and the edges of slow-moving water.

In Tasmania, the snail (and fluke) are normally only seen in the North, North East, Northern and Southern Midlands, East Coast and Derwent Valley. The most commonly infested flocks are in the Central Highlands.



Host snail: Liver fluke parasites require a host freshwater snail to complete their life cycle.

Host snail

The life cycle starts when sheep eats cysts on infected pasture.

Immature fluke migrate through the liver for 6–8 weeks then settle in the bile ducts, where the now adult fluke lays eggs. Eggs pass out in faeces and larvae hatch in water and seek out and infest snails.

The larvae develop and multiply in the snail. Advanced larvae encyst on pasture. The snails are only active during the warmer months. Infestation of sheep usually occurs during summer and autumn.

Mature liver fluke can remain in the bile ducts of sheep for many years.

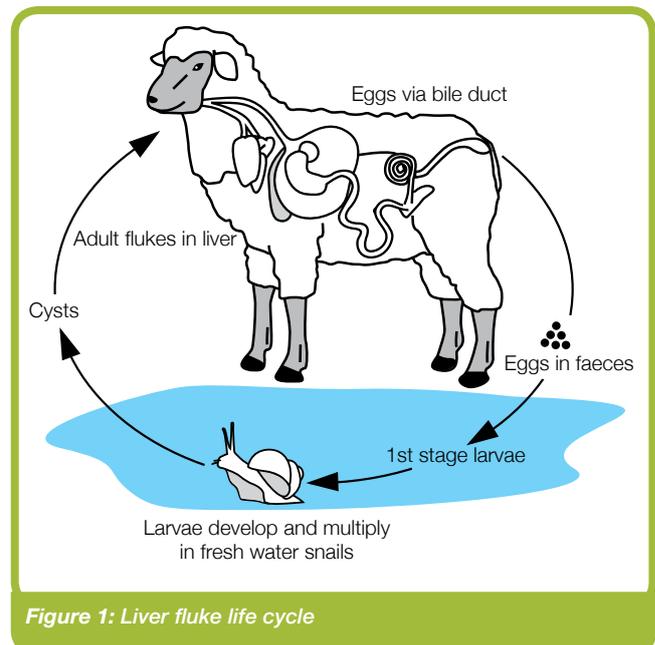


Figure 1: Liver fluke life cycle

Associated syndromes

There are various disease syndromes associated with liver fluke:

- Acute liver fluke disease occurs 5–6 weeks after a sheep swallows a large number of liver fluke cysts. The immature fluke cause severe damage to liver tissue as they burrow through it. Sheep are dull, weak, pale, and lose their appetite. They usually die within two days.
- Chronic liver fluke disease results from liver damage and scarring caused by immature fluke burrowing through the liver, as well as the effect of the mature fluke blocking the bile ducts and sucking blood. Sheep may develop swelling below the jaw due to poor liver function. They have pale membranes due to blood loss and are weak. These sheep will do poorly and the losses to production come from reduced growth, decreased fertility, weight loss, poor feed conversion and brittle wool.
- Black disease occurs when the immature fluke migrating through the liver stimulate certain bacterial (*Clostridium novyi*) spores. The spores activate and produce a lethal toxin. It is highly fatal and occurs in liver fluke areas within unvaccinated or incompletely vaccinated sheep.

Diagnosis

Post mortem examination of the liver reveals immature fluke, a few millimetres long. Mature fluke are found in thickened bile ducts. The lower lobe of the liver is shrunken and scarred.

A fluke test will detect mature fluke in live sheep. A blood test is available to detect immature fluke.

Suspicious signs in fluke country are weak sheep with painful abdomens and a pot-bellied appearance. Affected sheep may die when driven.

Treatment and prevention

Treatment is via triclabendazole drench to target both mature and immature fluke in summer and autumn. Drench during late winter/early spring, with a drench that will kill adult fluke (preferably a drench from a different family to triclabendazole). The aim is to reduce the number of adult fluke that available to infect developing snails.

Most fluke infections are picked up in summer and autumn, so late autumn treatment will eliminate flukes collected over summer.

Consult your local vet or animal health specialist for further advice.

Control snails by minimising snail habitat and improving drainage where possible. Laser-levelled land is less at risk compared with areas where water can sit.

Fence off swampy areas to stop sheep access. Provide a clean water source.

Ensure stock are fully vaccinated against Black disease.

Monitor with faecal egg counts or blood tests. 🐑



Photo: Bruce Jackson

Liver damage: Immature fluke migrate through the liver tissue and the adults live in the bile ducts, where they each can suck 2ml of blood per day.

For further information:

Contact your local DPI/PWE Animal Health officer or local veterinary practitioner; or phone DPI/PWE toll free helpline on 1300 368 550.

FOR ANY SIGNS OF UNUSUAL OR SERIOUS ANIMAL DISEASE, RING THE DISEASE WATCH HOTLINE: 1800 675 888.

Acknowledgements:

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