



Liver Fluke

Key Messages

1. Liver fluke costs the sheep industry \$25 million per year.
2. Most losses occur on farm due to weight loss, deaths, decreased fertility and reduced wool growth and staple strength.
3. Losses at the abattoirs are due to condemnation of affected livers and the occasional jaundiced carcase.

What is liver fluke?

Liver fluke are large flat worm parasites that infect sheep and cattle in “flukey” areas throughout the high rainfall areas (>600mm) and irrigated areas of eastern Australia. Liver flukes require permanent water and specific snails for the life cycle to occur.

Disease on farm

Liver fluke has a complex life cycle that requires a definitive host (usually sheep or cattle), specific fresh water snails and permanent water to maintain the snails. Sheep become infected when they eat fluke larvae on pasture, the immature flukes leave the gut and migrate through the liver for 6-7 weeks causing damage and subsequent scarring. At about 8-10 weeks after ingestion the now fully mature adult liver fluke starts to produce eggs in the bile duct. If suitable wet conditions are present, larvae hatch, then they must find a specific snail species to complete their life cycle. After 3 -4 months in the snail the larvae, transform into an infective cyst on pasture.

If a property does not have the right snail species or a suitable habitat, accessible to stock, then the liver fluke life cycle can't occur. Unlike cattle which develop an age related resistance, sheep remain highly susceptible to fluke infection all their lives. The liver fluke can live in a sheep for many years.



PIRSA Biosecurity SA

Figure 1 Adult liver fluke in a sheep liver.

Most of the costs of liver fluke are due to the direct effects of the fluke and occur on farm. The signs can include, ill thrift, jaundice (yellow), anaemia, bottle jaw and in severe infections sudden death. Liver fluke also makes sheep more susceptible to one of the clostridial diseases, black disease.

Disease picture at the abattoir

Livers which are affected by active liver fluke or scarring, are condemned.

Carcasses that are jaundiced are condemned.

February 2016

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Treatment

Liver fluke is best prevented through an Integrated Parasite Management (IPM) approach with a mixture of strategic drenches and grazing management. The drenching regime will depend upon the seasonal conditions, level of infection and pasture contamination on farm.

Strategic drenching aims at reducing pasture contamination and build-up of infective larvae and often initially consists of three drenches:

1. A late autumn (most important) drench,
2. A late winter/early spring drench; and
3. A mid summer drench

Most infections are picked up over summer and early autumn. A triclabendazole based drenches is usually recommended for the late autumn drench for its ability to target both mature and immature fluke. However, resistance to fluke drenches has been documented and drench groups should be rotated where possible.

Prevention

1. Good Biosecurity - stock introductions

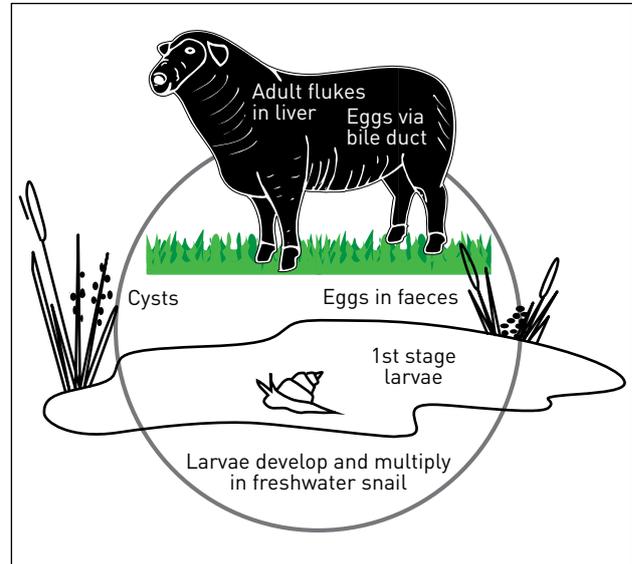
- Avoid introducing sheep or cattle onto your property infected with fluke.
- Quarantine and drench all sheep that come from a liver fluke area with a triclabendazole based drench.

2. Monitor fluke status

- Utilise fluke egg counts (or blood tests for early infections), abattoir surveillance reports, and post-mortem findings.

3. Snail habitat control

- Minimise snail habitat by improving drainage where possible
- Alternatively convert areas to deeper, faster moving water and keep drains clean so water can flow freely.
- Fix broken pipes/leaking troughs to stop permanent wet areas.



4. Grazing management

- Exclude stock from flukey or swampy areas.
- Provide clean trough water as an alternative to drinking from dams, swamps and drains.
- If infested paddocks must be used, consider using more resistant adult cattle or graze uninfected sheep over contaminated areas, moving them to a snail-free paddock after 8-10 weeks and drench. This prevents fluke eggs from reaching the snails and continuing their life cycle.

5. Vaccination to prevent black disease

- Ensure stock are fully vaccinated, including correct timing of boosters, against black disease. Commercial 5-in-1 and 6-in-1 vaccines cover black disease.

For further information:

<http://www.wormboss.com.au/worms/flukes/liver-fluke.php>