Liver fluke infestation (fasciolosis) has always been a problem during the late autumn and winter in the wetter western areas of the UK. More recently, liver fluke has been reported increasingly in eastern areas of the country due to the introduction of infested sheep. Slaughterhouse liver condemnations indicate that fasciolosis is now widespread and increasing in frequency. Autumn/winter 2015/16 was a high-risk year for liver fluke in many regions.

**Fig 1: Store lambs grazing wet pastures - at risk from fluke?**

**Most recent update**
The most recent fluke forecasts can always be found in the NADIS parasite forecast. For more specific information concerning the likely risk of liver fluke in your area contact your veterinary practice.

**Fig 2: Sheep with acute fluke die suddenly from haemorrhage and liver damage with the first evidence of a problem being sudden death.**

**The causal parasite**
Fasciola hepatica infects the liver in both cattle and sheep. For part of its life cycle it inhabits the snail, *Galba truncatula*. This important stage of the parasite life cycle necessitates wet and warm conditions (above 7 - 10°C) during the summer months. Liver fluke causes three types of disease, acute, sub-acute and chronic. Essentially, late spring early/summer infestation of snails result in the autumn fluke challenge to sheep with immediate acute disease, sub-acute disease over the following weeks, or chronic disease apparent three months later depending upon the level of challenge.

**Fig 3: Sudden death caused by acute liver fluke.**

**Sub acute fluke affected liver (left) compared to normal liver (right). Such damage has a huge effect on growth rate and body condition.**

**Clinical presentation**

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**“PREVENTION IS BETTER THAN CURE”**
Plan for health with your vet - get a veterinary health plan

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Acute fasciolosis
Affected sheep die suddenly from haemorrhage and liver damage with the first evidence of a problem being sudden deaths in previously healthy sheep from August to October (Figs 2-3). Inspection of others in the group reveals lethargy and reduced grazing activity. Gathering may prove difficult because sheep are reluctant to run caused by abdominal pain. Sudden deaths may affect up to 10 per cent of sheep at-risk causing grave financial loss.

Subacute fasciolosis
The major presenting clinical findings are rapid loss of body condition and poor fleece quality despite adequate flock nutrition. (Figs 4-5) Typically, some sheep present with severe depression, inappetance, weakness, and may be unable to stand. Losses typically occur from December onwards but may be much earlier (October) with severe challenge.

Chronic fasciolosis
The major presenting clinical findings are very poor body condition score and poor fleece quality and in many sheep, bottle jaw (Figs 6-8). Affected sheep may die in an emaciated state especially when infestation is compounded by the metabolic demands of advanced pregnancy/early lactation. Loss of the ewe and her lamb(s) can severely affect farm profits.

Other causes of sudden death your vet will consider include:
- Clostridial disease; pulpy kidney, blackleg, Black disease, braxy in unvaccinated stock
- Tick diseases as habitats often similar for both snails and ticks
- Pasteurellosis or other septicaemic diseases
- Louping ill

Diagnosis
Acute/subacute fasciolosis
Diagnosis of acute/subacute fasciolosis is based upon the epidemiological data (high risk year such as 2015), and veterinary investigation of blood samples which reveals raised liver enzymes. At necropsy immature flukes are found in the liver parenchyma, causing enlarged liver and subcapsular haemorrhages.

Chronic fasciolosis
Chronic fasciolosis is diagnosed by demonstration of fluke eggs in faecal samples. Faecal samples can be tested using the coproantigen ELISA test. Mature flukes are demonstrated in the bile ducts and gall bladder at necropsy.
Fig 8: Classical ‘Bottle-jaw’ may not always be the result of fluke infestation.

**Treatment**

Triclabendazole is highly effective at killing all stages of flukes responsible for acute fasciolosis. Drenched sheep should be moved to clean pasture. Re-treatments of sheep every three weeks or so during a high-risk period on contaminated pasture is unsustainable and resistance to triclabendazole is now commonly suspected. A more sustainable control programme should be developed with your veterinary surgeon.

Closantel, nitroxynil and oxyclozanide are not effective against very young liver flukes and should be used in the treatment of subacute and chronic fasciolosis. Once again, treated sheep must be moved to clean pastures. Improved nutrition is essential.

Fig 9: Unacceptable losses caused by chronic liver fluke. Five dead ewes within two days is a considerable financial loss to the farmer.

**Management/Prevention/Control measures**

Fluke infestations are controlled by strategic drenching based upon advice written in the veterinary flock health plan. During low risk years triclabendazole is administered in advance of the predicted challenge during October, with another flukicide drug (possibly closantel) administered in January and another drug in May. In years when epidemiological data indicate a high risk of fasciolosis such as 2015, an earlier triclabendazole treatment may be necessary in September. While it may be possible to eradicate fluke from a property, there are considerable risks from not drenching as the appearance of clinical disease in a few sheep represents serious losses in the whole flock. In certain areas wildlife hosts may play an important role in the disease dynamics.

Fencing off snail habitats is rarely practicable and in most situations is cost prohibitive as these are often extensive sheep enterprises. Drainage is cost prohibitive and many properties are subject to environmental controls.

**Economic importance**

Fasciolosis can have a serious financial impact on a sheep farm with immediate losses up to 10 per cent caused by acute/subacute disease. Chronic disease could half profits by reducing lamb crop and increasing ewe mortality. Infestations are controlled by strategic drenching based upon veterinary advice. The role of health planning by the farmer’s veterinary surgeon is essential to maintain profitability and prevent losses.