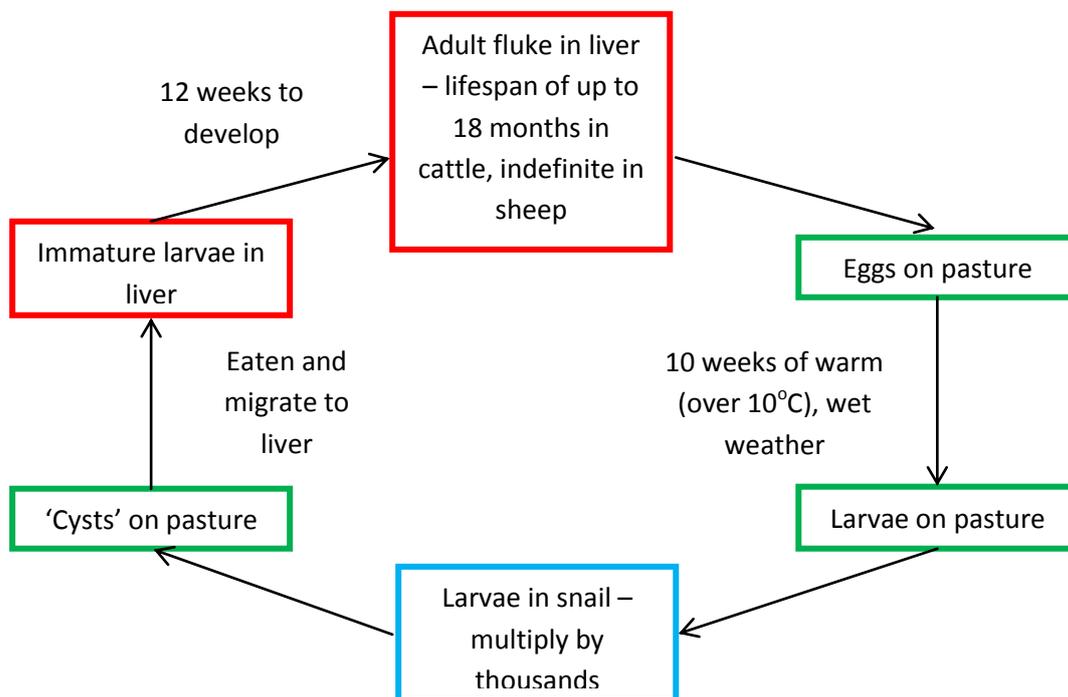


## Control of liver fluke (Part 1)

Liver fluke infection, caused by *Fasciola hepatica*, is becoming more common across the UK, with the highest rates of infection seen in the South-West, West Wales and South-West Scotland. Flukicide resistance (to triclabendazole) has been confirmed in sheep in the last few years and given our understanding of resistance to wormers, this would suggest that resistant fluke are here to stay.

Recently, the EU has taken a stricter stance on the use of flukicides in milk-producing animals. This has resulted in almost all flukicides being restricted so that they cannot be used at all in lactating or dry cows, whilst their use in replacements is also restricted.

Understanding fluke infection requires an understanding of the life cycle. Liver fluke do not pass directly from cow to cow or sheep to sheep, instead they have to go via snails, as shown below:



Therefore, infection is typically seen in the autumn and winter, after the eggs have had time to hatch and the larvae develop in snails. The multiplication phase in snails is temperature dependent (80 days at 15°C but only 20 days at 30°C), so the weather will affect infection levels.

Testing for liver fluke can be done in the following ways:

- Antibody test (only possible in cattle) – detectable for up to 9 months after all flukes are killed
  - Bulk milk
  - Blood
- Faeces test for eggs
  - Only produced by adults, so will be negative for the first twelve weeks of infection
  - Proves **current** infection
- Faecal antigen test
  - Looks for active infection
    - Still in the development stage but could be useful for assessing if treatment has been successful
- Slaughterhouse information
  - Most abattoirs will report when livers are condemned due to fluke damage

The fluke that infects cattle and sheep is capable of infecting any mammal - rabbits, deer - making infection impossible to eliminate. This means that grazing areas with snail habitats will remain permanently infected, even if left unstocked for several years. Whilst strategic treatment using flukicides will help control the problem, long term there will need to be a move towards preventing infection and reducing our reliance on medicines, as is happening with gut worms.

Therefore limiting new infections relies on preventing access of the grazing animals to snail habitats, or removing snail habitats from the farm.

Possibilities include:

- Full time housing – this may be appropriate in high-yielding dairy herds which are fed grass and maize silage
- Not grazing known fluke fields – a possibility if only some fields have a known fluke problem, assuming there is sufficient other grazing, and the 'fluke' fields can be used for silaging etc.
- Strategic grazing – it may be possible to limit grazing of 'fluke' areas in the autumn, limiting the number of new flukes entering the animals
- Fencing fluke areas – this will prevent new fluke infections but some farms may need to run an alternative water source to certain fields
- Long term drainage of fields – removal of the damp areas will remove the snail habitat and therefore the fluke risk

Each option has limitations. For example, some wet, rushy fields are only appropriate for grazing stock, the ground is too poor for good silage making or too wet to take the machinery. In other cases, the river, which is the source of infection, is also the water source for the livestock and spending all winter defrosting water troughs is impractical. However, farmers need to consider what is possible on their farm.

The solutions above will become increasingly important in the control of liver fluke as we are forced to reduce our reliance on flukicides either from legislation and licensing, or the threat of increasing resistance. Planning now for the next ten years is a sensible step as most of the proposals above require the investment of lots of time and large amounts of capital, on top of a fundamental re-think about land use on the farm. Also, some farmers committed to agri-environmental schemes will find that certain measures that will be beneficial for fluke control e.g. land drainage, may be at odds with the requirements of their environmental payments. Fortunately, many local authority or EU grants that are offered can be used for exactly this type of project.

However, we know for certain that the use of flukicides is being and will continue to be restricted, resistance to triclabendazole exists and other flukicides are certain to follow and so the only long term solution to the fluke challenge will be to alter the environment.