

Liver fluke information

- The liver fluke *Fasciola hepatica* is a highly prevalent parasite infection livestock in Great Britain and requires an intermediate host mud snail to complete its life cycle and infect ruminants.
- The main intermediate host in Great Britain are *Lymnaea* spp. of semi-aquatic snails, although other species such as *Galba truncatula*, can also act as intermediate hosts in Europe (Jones *et al.*, 2015). Wet and warm conditions facilitate this part of the parasite life cycle during summer months. Adult flukes lay eggs which are shed in faeces onto pasture. These eggs hatch releasing miracidia which then migrate in thin films of moisture onto vegetation. The miracidia penetrate the snail intermediate host, in which they further develop into cercaria which are shed from the snail. The cercaria migrate back onto vegetation and encyst and are in turn ingested by livestock in which they hatch, migrating from the small intestine, via the biliary tree into the liver where they develop into the adult fluke. In wet summers with environmental temperatures above 10°C snail populations and fluke infections of snails rapidly multiple.
- Liver fluke disease (Fasciolosis) causes an estimated yearly loss of £300million for the UK agriculture industry (Williams, 2014). With an estimated 76% of dairy herds in England and Wales infected (McCann *et al.*, 2010).
- Liver fluke infestation tends to be a greater issue during late autumn and winter, in wetter western areas though slaughterhouse liver condemnations indicate it is now widespread and increasing in frequency.
- The liver fluke can lead to acute, subacute and chronic fasciolosis in ruminants and therefore significantly impact on sheep and cattle welfare and production in the UK and Europe (Bennett & Ijpelaar, 2003; Schweizer *et al.*, 2005; Charlier *et al.*, 2007).
- Contributing factors that may increase prevalence and virulence of this disease include animal importation and movement (Pilarczyk *et al.*, 2011), climate change (van Dijk *et al.*, 2010), inappropriate treatment regimes such as routine drug dosing without accurate diagnosis and drug resistance (Fairweather, 2011).
- Fluke infection is usually confirmed through faecal egg count tests based on egg sedimentation (Taylor *et al.* 2007).
- Fluke infestations are controlled by strategic drenching based on veterinary advice. Fencing off snail habitats is rarely practicable and most likely costly, especially in areas of extensive sheep farming, additionally drainage is cost prohibitive and many properties are subject to environmental regulations, especially protection of wetland systems (NADIS, 2017). Keeping stock off the wettest field in autumn and winter, when the incidence of disease is at its highest, can reduce the risk from fluke (SCOPS, 2012).
- Appropriate treatment regimes will depend on level of fluke infestations, time of year, and husbandry systems on the farm in question.
- Morphologically beaver fluke (*Stichorchis subtriquetrus*) and *F. hepatica* eggs are very different. It is possible that beavers could become infected with *F. hepatica* if living in infected areas as this fluke can infect a wide range of herbivores and has been reported in two Eurasian beavers out of 20 in a short communication (Shimalov & Shimalov, 2000).

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