

Introduction

The liver fluke, *Fasciola hepatica* is a parasite that infects the liver of grazing animals including cattle, sheep, deer, South American Camelids (SACs) and some wildlife, such as rabbits. The lifecycle includes a species of snail as an intermediate host and the parasite causes liver damage in the animal by the migration of immature flukes and blood loss by the feeding activities of adult parasites. The symptoms of the disease include a reduction in milk yield, lower growth rates and anaemia. Animals become infected in the autumn and early winter by grazing on infective pasture and to monitor clinical and sub-clinical liver fluke infection in cattle herds, samples should be taken and tested in November, December or January. Dairy herds should be tested within this time frame when at least 75% of the milking cows are contributing towards the bulk milk tank.

Protocols

Below are details of each protocol and the actions required. The Herdsure Management System is designed to ensure that this is a simple and clear process to follow by providing automatically generated sampling prompts and submission forms. Samples are returned to the laboratory using business reply labels, supplied by Herdsure.

■ **Entry** - To measure and control clinical and sub-clinical liver fluke infections in cattle herds, samples are taken in November, December or January. Dairy herds should be tested within this time frame when at least 75% of the milking cows are contributing towards the bulk milk tank.

Two groups are sampled, the main suckler or dairy herd and the 'at risk' cattle that have grazed the farm pastures for at least 12 weeks before sampling. Examples of these would be dry cows and other cows not contributing to the bulk milk tank and cows managed separately from the main herd, such as replacement heifers, grazing youngstock, calves and bulls which have access to pasture. Cattle treated for liver fluke infection within 3 months of sampling, bought-in cattle, cattle with significantly lower risk of having acquired infection and cattle that have co-grazed with the main cow herd should be excluded.

■ Beef and dairy herds

Level 1 - Establishing health status

The main herd will have either bulk milk samples, 40 floor faeces samples or up to 15 clotted blood samples taken. The 'at risk' cattle will have 40 faeces samples or up to 15 clotted blood samples taken. If all the test results for the farm are negative at Level 1 for the main herd and the 'at risk' group then the herd enters Level 3.

Level 2 - Improving health status through disease reduction strategies

Sampling is the same as Level 1 above. Farmers and/or veterinary practitioners will receive a sampling reminder from Herdsure each November. If there is known infection prior to joining Herdsure or if results are positive/inconclusive at Level 1 the herd then enters level 2. This level spans a period of 12 months and aims to reduce the burden of liver fluke in the herd to a level at which it does not significantly affect cattle production or welfare. The focus is on treatment, control, management and biosecurity. The herd progresses to Level 3 if test results are negative or it remains at Level 2 for a further 12 months until results are negative.

Level 3 - Monitoring and maintaining health status

The main herd will have either bulk milk samples, 40 floor faeces samples or up to 15 clotted blood samples taken. The 'at risk' cattle will have 40 floor faeces samples or up to 15 clotted blood samples taken. These should be tested annually in November, December or January.

Biosecurity & Treatment

The farmer and veterinary surgeon should work together to ensure good biosecurity.

■ **Non-lactating cattle** - The minimum number and timing of recommended treatments are:

Treatment 1: A flukicide effective against both adult and immature fluke should be given in winter as soon as possible after receipt of a positive Herdsure liver fluke result.

Treatment 2: In the subsequent May following receipt of a positive Herdsure result, cattle that are housed over the winter should be given a flukicide effective against adult liver fluke. Cattle grazing pastures that might be contaminated with liver fluke cysts should be treated with a flukicide which is effective against both adult and immature liver fluke.

Treatment 3: In the subsequent autumn or early winter preferably after housing, and following the receipt of a positive Herdsure liver fluke result, cattle should be given a flukicide effective against both adult and immature liver fluke.

■ **Lactating cattle** - In years in which rainfall and temperature indicate a high risk of infection, additional treatments may have to be given in consultation with your veterinary surgeon and disease forecasts. This would normally take place at 'drying off'.

■ **Mixed grazing** - For a mixed cattle and sheep farm where fluke infection is diagnosed, treatment of sheep is advised.

■ **Treatment and control** - This should be planned in conjunction with advice from your veterinary practitioner.

■ **Added animals** - Added animals should be sampled and tested for antibody to liverfluke. A negative result is required before entry onto the farm or release from quarantine. Alternatively added animals can be treated with flukicide 4 weeks before they are moved onto the farm pasture.