Control of liver fluke (Part 2).

This article should be read in conjunction with the excellent article on non - drug fluke control written by Tyndale vets. It is important that both drug and non-drug control measures are used together, rather than relying on medicines alone.

To treat liver fluke, you need to strategically treat with a flukicide product tailored to the stage of the fluke lifecycle. The stage of the fluke lifecycle is determined by the time of year and local farm factors such as climate, grazing management, stocking density, ground conditions etc. As a result the dosing regime must be tailored to the **individual farm.** There is no such thing as a 'routine' or 'blanket' control program. A Fluke control program should be incorporated into the individual farm's health plan.

As with all medicines it is important to store and use them appropriately. Eg Fasinex data sheet reads "protect from frost", Combinex data sheet reads "store in a dark place below 25C". Whilst data sheets may not represent the most stimulating read and can induce a state of stupor, their content is vitally important as failure to abide by these guidelines may result in reduced drug efficacy. The Landrover dashboard / passenger seat is not a suitable drug cabinet!

Ensure all drenching equipment is clean and correctly calibrated before use, and DO NOT mix products in the same drench.

Accurate dosing according to weight is very important as underdosing is a strong driver for resistance, whilst overdosing risks toxicity. As a rule of thumb, treat according to the heaviest in the group. If wide weight variation exists split the group into 2, allowing for smaller and more even groups and then dose to the heaviest in each group.

Before embarking on a liver fluke treatment regime it is important to determine whether a fluke problem actually exists on your farm. Treating unnecessarily costs you money and time, and promotes resistance. Ask your abbatoir for feedback on liver condemnations and perform routine faecal worm egg counts, (FECs) on representative groups. If this is done frequently enough it is possible to build a strong picture of the overall parasite burden on farm, not just fluke.

Once fluke is confirmed on farm, the following can be used as a framework for a farm's individual fluke control program:

- Treatment frequency during the grazing season will depend on environmental conditions eg wet summers provide greater habitats for the intermediate host snail and encourage proliferation of both the snail and fluke. NADIS provide regional forecast summaries which help to decide treatment protocols.

- Treat with the right product at the right time of year eg need a product that kills immature stages in October, and mature stages in January. Rotate flukicides on a yearly basis to reduce resistance

- Perform regular FECs – but egg shedding is intermittent, and none are produced until adult fluke are present 12 weeks after infection.

- Investigate all case of illthrift – remember plenty of other causes exist eg trace element deficiency, dental disease, lameness, chronic conditions such as Johnes and scrapie etc.

- Investigate sudden deaths – clostridial disease commonly causes sudden deaths secondary to liver tissue damage caused by an underlying fluke problem.

- Quarantine bought in stock and use a flukicide to avoid introducing fluke in animals carrying the parasite. As levels of resistance to the fluke medications rise, it may become prudent to dose using 2 different fluke medicines at quarantine.

- Resistance, (especially to triclabendazole), is increasing so any perceived treatment failures should be thoroughly investigated.

Only a limited number of products are available, and a key point is that not all will kill all the different stages of the fluke life cycle, and there is even variation in susceptibility within the ages of the individual stages of the life cycle eg triclabendazole has activity against the mature and immature fluke down to 2 weeks in cattle, whereas Nitroxnil injection only has activity down to 6 weeks, (so fluke less than 6 weeks old will not be killed by Nitroxinil). Albendazole only kills adult fluke. Also, there is variation between the different methods of application eg oral preparations kill younger stages than pour on preparations.

These points are important, as most of the liver damage is caused by the migrating immature fluke. Also, the inability to kill the earlier stages means that repeat treatments may be needed approximately 8-10 weeks later - those fluke in the earlier stages will then be within the age of the' killing zone' and any adult flukes developed since the last treatment can be killed before they start producing large numbers of eggs.

No flukicide has any kind of persistant action – so reinfection can occur immediately after treatment.

The situation for dairy cattle has recently become even more difficult as in November 2012, the European Commission banned the use of straight flukicides containing triclabendazole, rafoxanide and nitroxynil in animals producing milk for human consumption, including the dry period. However, the flukicide Fasinex 240, (containing triclabendazole), from Novartis Animal Health has been granted a variation approval allowing it to be continued to be used in cattle

producing milk for human consumption. However, this product is subject to certain restrictions and it is important to discuss these with your vet before using it.

Treatment for an acute outbreak of disease should include the use of a product containing triclabendazole as this kills all stages of the parasite. However, due to increasing concerns over resistance, it may be prudent to use another product eg closantel, which will remove any late immature or adult flukes present which have escaped the effects of triclabendazole. No other flukicide is available that offers the wide spectrum of activity of triclabendazole.

Trials for a vaccine are currently underway and in the future, we may have a vaccine available for fluke control which would greatly simplify things!