LIVER FLUKE CONTROL IN THE DAIRY HERD

Animals become infected with liver fluke when they eat fluke cysts along with the grass. The fluke life cycle means that cysts most commonly start appearing on the grass in August and their numbers peak in September/October. Once cysts are eaten the fluke travels to the liver where it takes 10 to 12 weeks to reach adult size and start producing eggs. In order to avoid milk withdrawals, treatment of dairy cows is mainly restricted to the dry period. In herds that calve all year round, on farms where fluke are present, it is likely that some cows will be shedding fluke eggs in their faeces on any given day. In addition, the products that can be used during the dry period may fail to kill 100% of the fluke present in the liver. Both facts contribute to continuation of the fluke life cycle and re-infection of grazing cattle.

- Where the routine dry period is 6 to 7 weeks long don't use products containing triclabendazole all year round as this could lead to liver fluke developing resistance to these products. It is best practice to keep them for when they are needed most. Immature fluke are most likely to be found in the liver in autumn and early winter. Cows dried off at this time should be treated with triclabendaozle particularly if the summer has been wet, as this increases the level of fluke challenge.
- Try and identify the driest fields (least fluke risk) for the milking herd and dry cows to graze in autumn. Fencing off boggy/wet areas can be useful. Improve areas prone to poaching such as around water troughs, gateways and tracks. Only allowing access to mains water is ideal. Fields that remained ungrazed from turn out to mid July are also lower risk in autumn.
- No fluke treatments are long acting. If you treat a dry cow in September and it remains at grass re-infection may occur before it is housed.
- With a 6 to 7 week dry period you will need to treat the cows straight away if using a triclabendazole product. These products kill fluke from 2 weeks of age so any younger flukes will survive treatment. Where time allows, e.g. seasonally calving herds with a longer dry period, delay treatment for 2 weeks after housing.
- Once cows have been housed for 10 to 12 weeks all the fluke in their livers will be adult. There is therefore no need to use triclabendazole products in animals dried off after this time. Products that target adult fluke should be used but note that they may not be 100% effective.
- There may be groups of cows within the herd that are at very low risk of fluke infection and do not need to be treated at all. For example, if high yielders are always housed, cows that calve in the late spring/early summer may remain inside all year. In general, when weather conditions are favourable for fluke, the longer the grazing season the higher the risk.
- Following a wet summer housing early will reduce the fluke challenge as well as preventing poaching.
- Wintered sheep are a risk even if they are treated before they arrive. They may become re-infected during the winter and shed fluke eggs. Testing faecal samples in January will help to decide whether further treatment is needed.
- Once spring grass appears any cysts that have survived over winter become unimportant because they remain in the layer of old vegetation and the new growth is eaten preferentially.
- Can housed cows become infected with fluke via the silage? Information available on this is poor and contradictory. The risk from silage cut in May, June and July is very low as the greatest numbers of fluke cysts do not appear on the grass until the autumn. In addition it will be many months before the silage is eaten. There could be a small risk from very late cut silage, e.g. September, particularly if the field was grazed by livestock shedding fluke eggs in spring/early summer. If cysts are present on the grass the highest numbers will be in the wettest areas of the field. These areas are less likely to be cut for silage. Any risk is likely to be higher in poor silage and in the first two months after it was made.

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FLUKICIDES FOR DAIRY CATTLE

The data sheet should always be checked before a product is used as recommendations and withdrawal times can change. (Information from www.vmd.defra.gov.uk, checked 4/5/17.)

The figures below assume that pregnancy lasts for 284 days but there will be variation between animals. To save space and avoid repetition products have been grouped. See Table 1 for explanation of products in each group.

Combination products (marked *), and those in group D, have activity against worms as well as fluke. Combination products should only be used if there is a need to treat both worms and fluke.

Where no milk withdrawal is shown (marked X) products should not be used in cattle producing milk for human consumption at any time including during the dry period.

TABLE 1: PRODUCT GROUPS

Group	Product	Withdrawals		Contains	Approximate age of fluke killed
		Milk	Meat		
A	Endofluke	45 days	56 days	Triclabendazole	2 weeks to adult
	Fasinex 240	48 days	52 days		
	Fasinex 10%	X	56 days		
	Fasinex 100 10%				
	Tribex 10%	41 days			
	Triclacert 10%	41 days			
	Combinex Cattle*	X	56 days	Triclabendazole and Levamisole	
B1	Closamectin inj.*	X	49 days	Closantel and Ivermectin	6-8 weeks to adult
	Closiver inj.*				
	Norofas inj.*				
	Flukiver Bovis	X	77 days	Closantel	
	Trodax	X	60 days	Nitroxynil	
B2	Closamectin p/o*	X	28 days	Closantel and Ivermectin	6-8 weeks to adult
	Closiver p/o*				
	Norofas p/o*				
C	Alverin Plus*	60 days	66 days	Clorsulon and Ivermectin	Adult
	Animec Super*				
	Bimectin Plus*				
	Ivomec Super*				
	Molemec Super*				
	Supremadex*				
	Virbamec Super*				
D	Albacert SC 2.5%	60 hours	14 days	Albendazole	Adult
	Albenil 2.5/10%				
	Albensure 2.5/10%				
	Albex 2.5/10%				
	Endospec 2.5/10%				
	Tramazole SC 2.5%				

TABLE 2: COWS (See note below table in addition.)

Management Group	Stage of Production	Flukicides Available	Withdrawal		Approximate age of fluke killed
			Milk	Meat	
Milking Cows	Lactation	Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	
Dry Cows	Dry period 40 days or less.	Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	
Dry Cows	Dry period 41 to 44 days	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
Dry Cows	Dry period 45 to 47 days	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	
Dry Cows	Dry period 48 to 59 days.	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	
		Fasinex 240	48 d	52 d	
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	
Dry Cows	Dry period 60 days or more.	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	
		Fasinex 240	48 d	52 d	
		Group C	60 d	66 d	Adult
		Group D	60 h	14 d	
		Zanil	72 h	28 d	

Always follow the instructions given in the data sheet to calculate the milk withdrawal, particularly if cows calve earlier than expected. For example for products containing triclabendazole the advice is:

Endofluke – milk can only enter the tank after an interval of 45 days plus 48 hours post treatment.

Fasinex 240 – milk can only enter the tank after an interval of 48 days plus 48 hours post treatment.

Tribex 10% and Triclacert 10% - milk can only enter the tank after an interval of 41 days plus **84 hours** post treatment.

TABLE 4: BULLING HEIFERS AND YOUNGSTOCK

All of the products listed above can be used to treat bulling heifers and youngstock. The products listed in Table 4 must **NOT** be used in cattle of **ANY AGE** that are intended to produce milk for human consumption.

Product	Meat Withdrawal	Contains	Approximate age of fluke killed
Cydectin Triclamox p/o*	143 days	Triclabendazole and Moxidectin	**6-8 weeks to adult.**
Downland Fluke and Worm*	5 days	Oxyclozanide and Levamisole	Adult
Levafas Diamond*	5 days	Oxyclozanide and Levamisole	Adult

TABLE 3: IN CALF HEIFERS

Management Group	Stage of Production	Flukicides Available	Withdrawal		Approximate age of fluke killed
			Milk	Meat	
In calf Heifers	First 142 days of pregnancy.	Group A	See Table 1	See Table 1	From 2 weeks to adult.
		Groups B1 and B2	See Table 1	See Table 1	From 6-8 weeks to adult.
		Group C	60 d	66 d	Adult
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 143 to day 189 of pregnancy.	Group A	See Table 1	See Table 1	From 2 weeks to adult.
		Group B1	See Table 1	See Table 1	From 6-8 weeks to adult.
		Group C	60 d	66 d	Adult
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 190 to day 224 of pregnancy.	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	From 2 weeks to adult.
		Fasinex 240	48 d	52 d	
		Group C	60 d	66 d	Adult
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 225 to day 236 of pregnancy	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	From 2 weeks to adult.
		Fasinex 240	48 d	52 d	
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 237 to day 239 of pregnancy	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Endofluke	45 d	56 d	From 2 weeks to adult.
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 240 to day 243 of pregnancy	Tribex 10%	41 d	56 d	From 2 weeks to adult.
		Triclacert 10%	41 d	56 d	
		Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult
In calf Heifers	Day 244 of pregnancy to calving.	Group D	60 h	14 d	Adult
		Zanil	72 h	28 d	Adult