



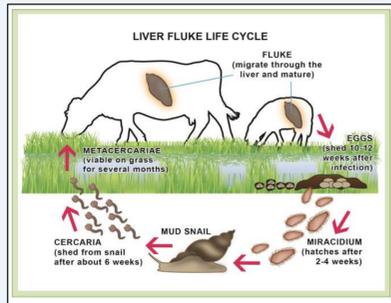
Liver fluke (*Fasciola hepatica*) and Rumen fluke (*Calicophoron daubneyi*) infection in sheep and cattle in the UK

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Aim

To better understand the epidemiology of rumen fluke infection in the UK and improve the control of both liver fluke and rumen fluke in livestock.

Background



- ▶ Liver fluke (*Fasciola hepatica*) is a common parasite of livestock in many parts of the world, causing significant morbidity and mortality in sheep and cattle¹.
- ▶ Rumen fluke (*Calicophoron daubneyi*) is considered to be an emerging parasite across Europe, with increasing prevalence in the UK.² Ongoing debates about its clinical importance in sheep and cattle in the UK.
- ▶ Liver fluke and rumen fluke overlap in their distribution and share many similarities in their lifecycle, not least the ability to infect the same intermediate host, *Galba truncatula*^{3,4}.

Farmer Awareness and Control Practices

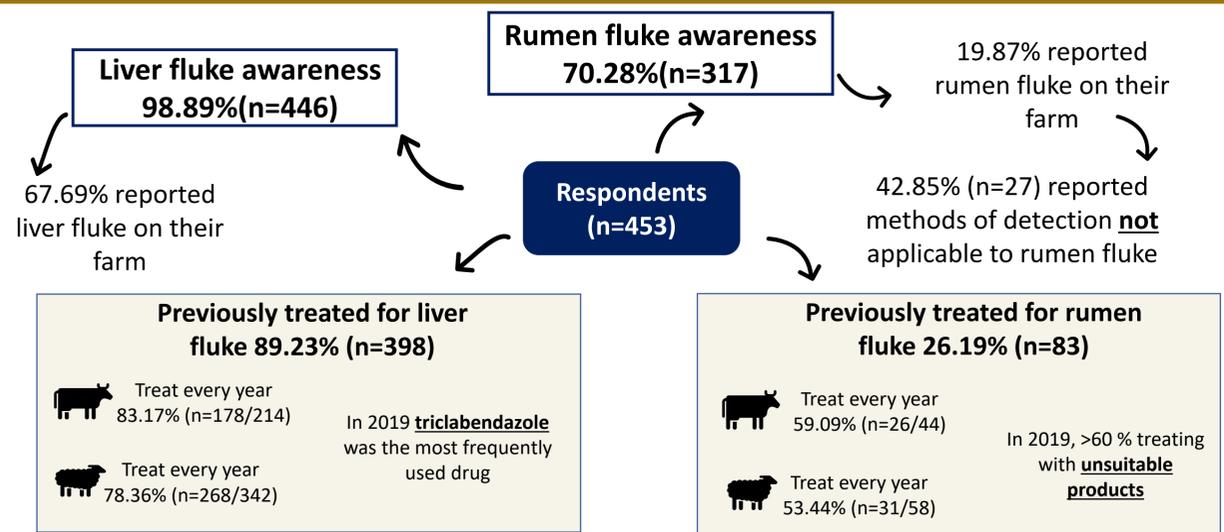
Aim

Capture **awareness** of liver fluke and rumen fluke infection and evaluate current practice in the **control** of these parasites in cattle and sheep in the UK.

Methods

Online survey designed in English and Welsh:
Section 1: Liver and rumen fluke awareness and concern.
Section 2: Liver and rumen fluke on your farm.
Section 3: Liver and rumen fluke treatments.
Section 4: Farm characteristics.
Distributed by a variety of outlets December 2019 - March 2020.

Results



Conclusions

Confusion between rumen and liver fluke

Lower awareness of rumen fluke

Farmers showed concern about rumen fluke

Farmers treating rumen fluke with unsuitable products

Liver fluke treated more routinely

Farm Prevalence

Aim

Prevalence of liver fluke, rumen fluke or co-infection on sheep and/or cattle farms in the definitive and intermediate host.

Methods

- ▶ 16 farms visited from September - October 2020 and 2021.
- ▶ On farm questionnaires completed, focused on management practices and recent treatments.
- ▶ Faecal samples collected to assess for presence of liver and rumen fluke eggs.
- ▶ *G. truncatula* habitats identified, snails collected and morphologically identified and assessed for infection with *F. hepatica* and/or *C. daubneyi* using multiplex PCR.

Results

Farm ID	Farm Enterprise	Faecal Results	GT (n)	GT LF prevalence (%)	GT RF prevalence (%)
1	Beef	LF+RF	599	0.7	23.4
2	Beef + Sheep	LF+RF	149	0.0	47.0
3	Beef + Sheep	LF+RF	157	5.1	1.9
4	Dairy	RF	53	0.0	32.1
5	Sheep	LF+RF	209	0.0	1.4
6	Sheep	LF+RF	56	0.0	44.6
7	Sheep	LF+RF	147	2.7	8.2
8	Beef + Sheep	LF+RF	480	0.2	7.7
9	Beef + Sheep	LF+RF	13	0.0	0.0
10	Dairy + Sheep	RF	105	0.0	8.6
11	Beef + Sheep	LF+RF	360	5.3	0.0
12	Beef + Sheep	LF+RF	103	5.8	11.7
13	Beef + Sheep	LF+RF	256	5.5	0.0
14	Beef + Sheep	RF	294	0.0	0.0
15	Beef + Sheep	LF+RF	167	0.0	0.0
16	Sheep	LF+RF	170	0.0	2.4
Total			3318	1.7	10.0

LF= Liver fluke (*Fasciola hepatica*) RF= Rumen fluke (*Calicophoron daubneyi*) GT= *Galba truncatula*
Table: Summary table containing combined data collected in 2020 and 2021 on *F. hepatica* and *C. daubneyi* prevalence on farms.

Conclusions

- ▶ Rumen fluke is becoming established on sheep and/or cattle farms in the UK.
- ▶ First study in the UK to report a higher prevalence of *C. daubneyi* in *G. truncatula* compared to *F. hepatica*. Suggesting *C. daubneyi* is becoming adapted to UK *G. truncatula* populations. Posing questions about the future risk to livestock in the UK.