LIVER FLUKE

Marion McMillan
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Veterinary Services

Leading the way in Agriculture and Rural Research, Education and Consulting

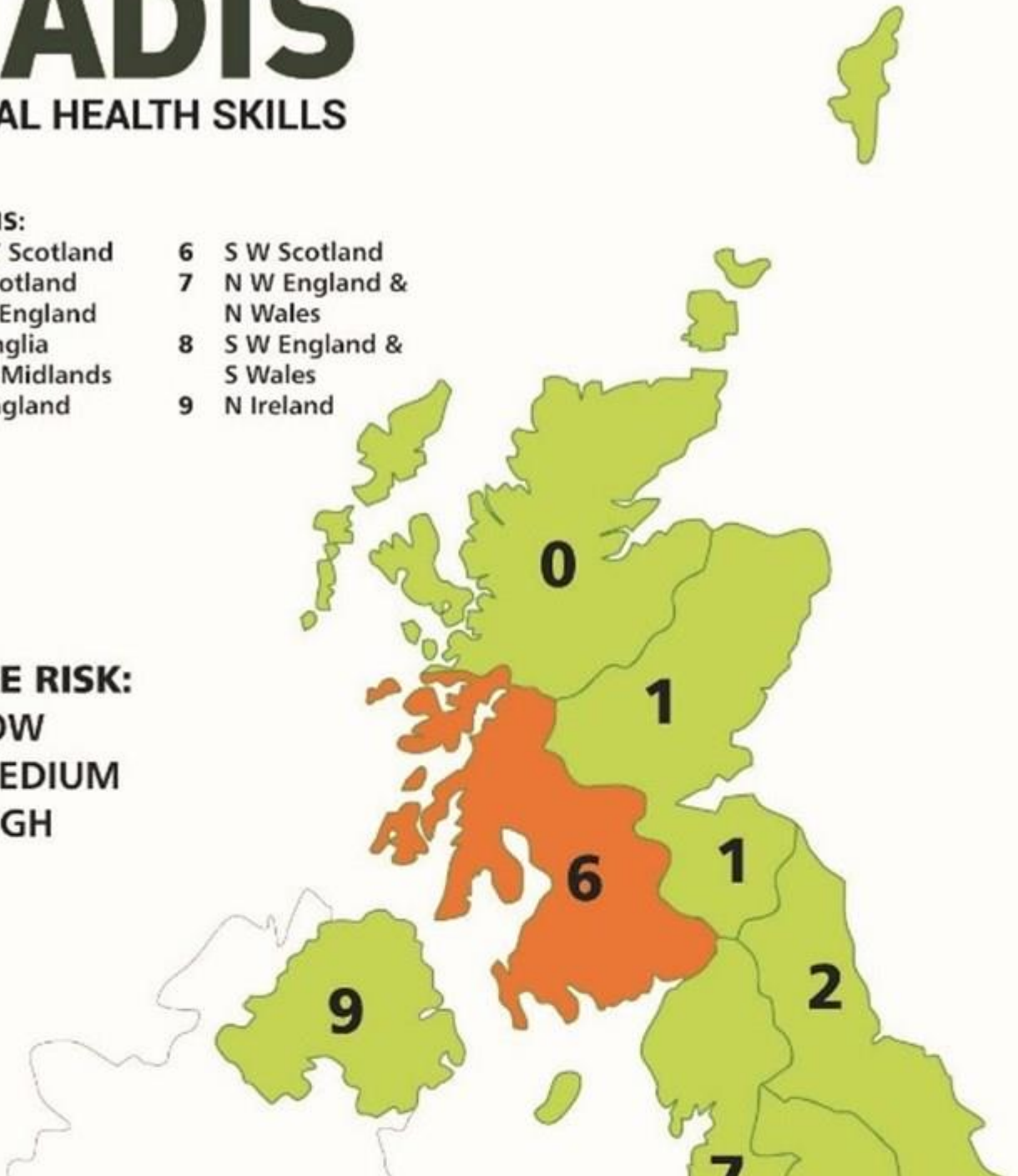
NADIS

ANIMAL HEALTH SKILLS

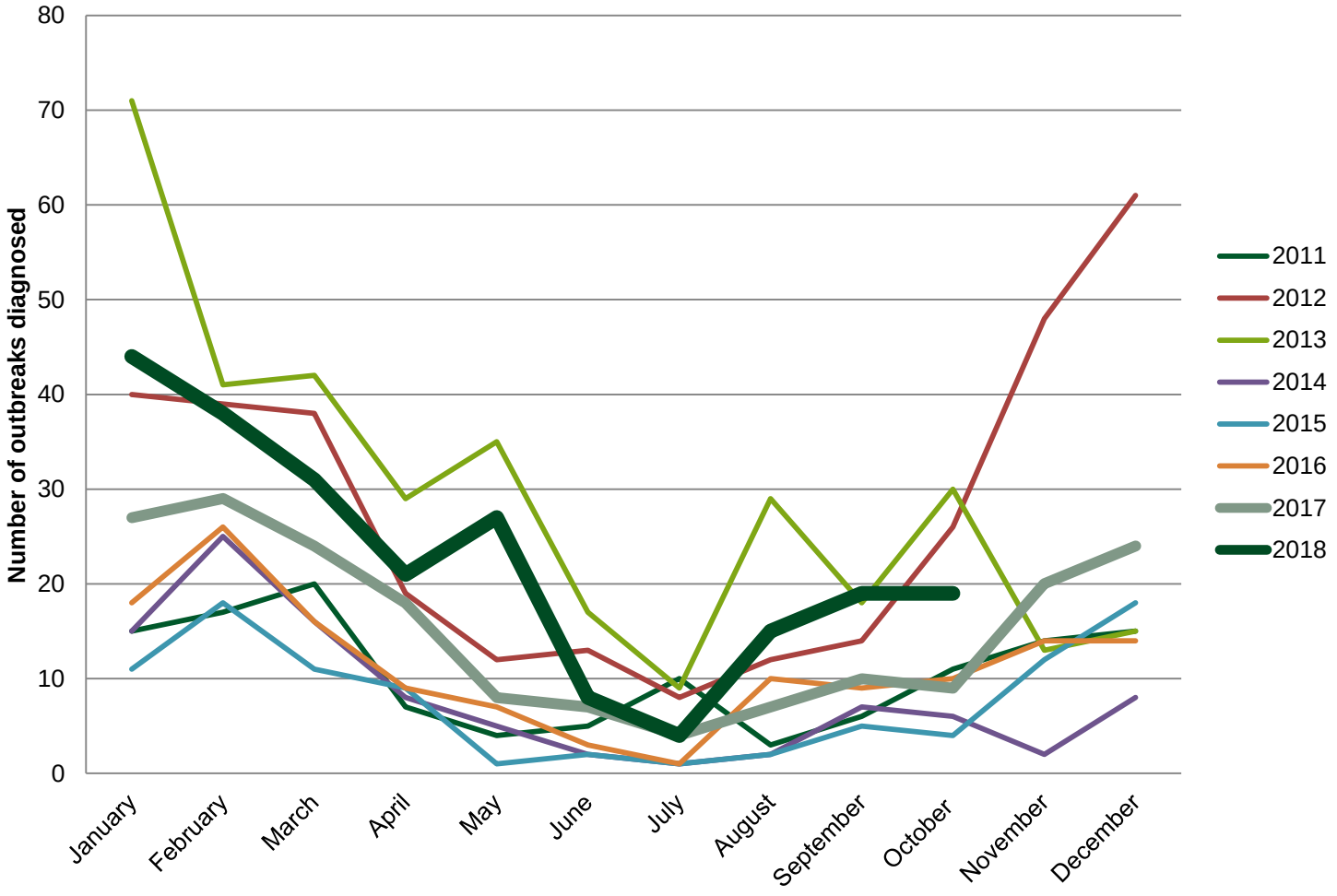
SRUC

REGIONS:

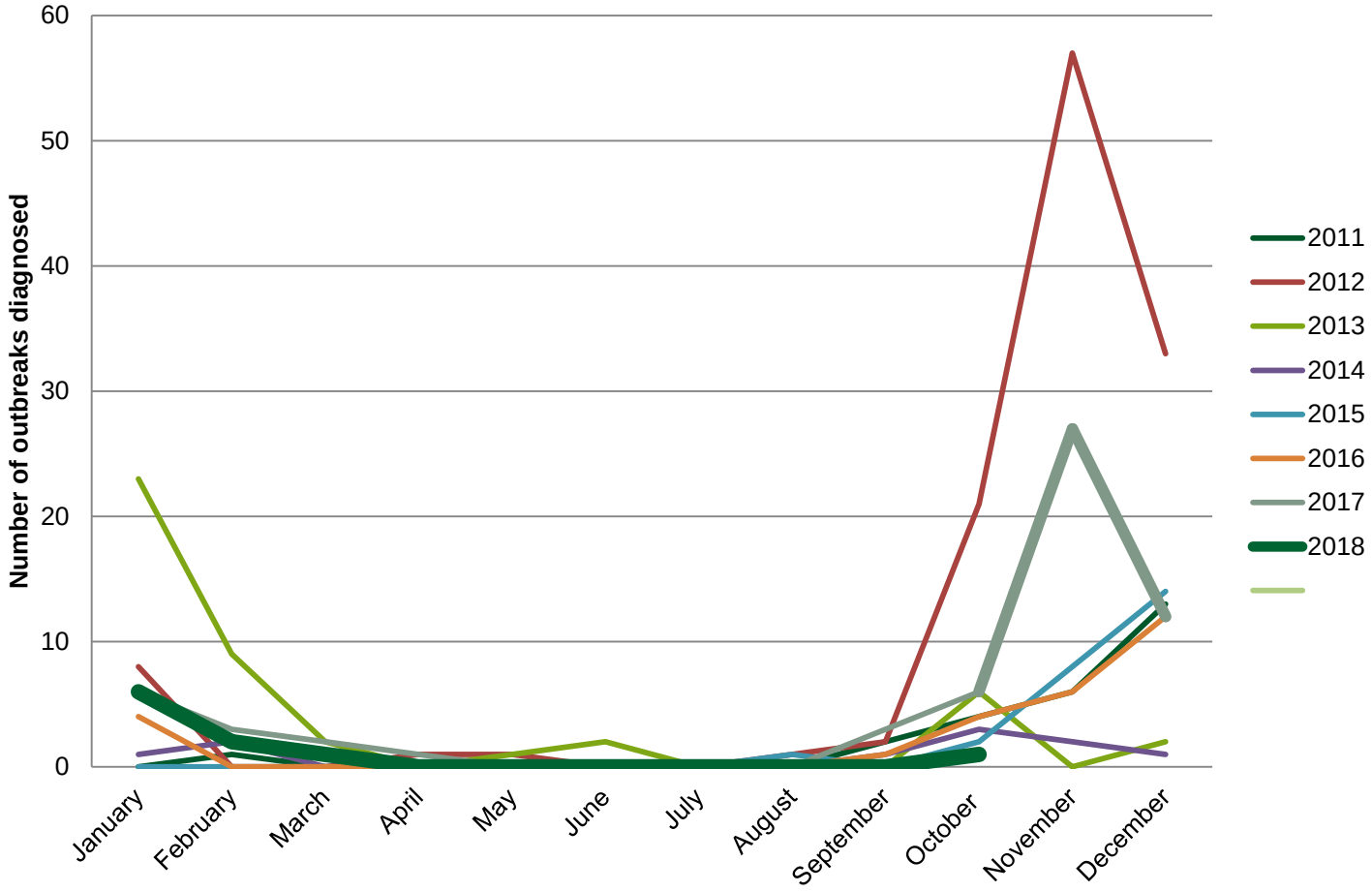
0	N W Scotland	6	S W Scotland
1	E Scotland	7	N W England & N Wales
2	N E England	8	S W England & S Wales
3	E Anglia	9	N Ireland
4	The Midlands		
5	S England		



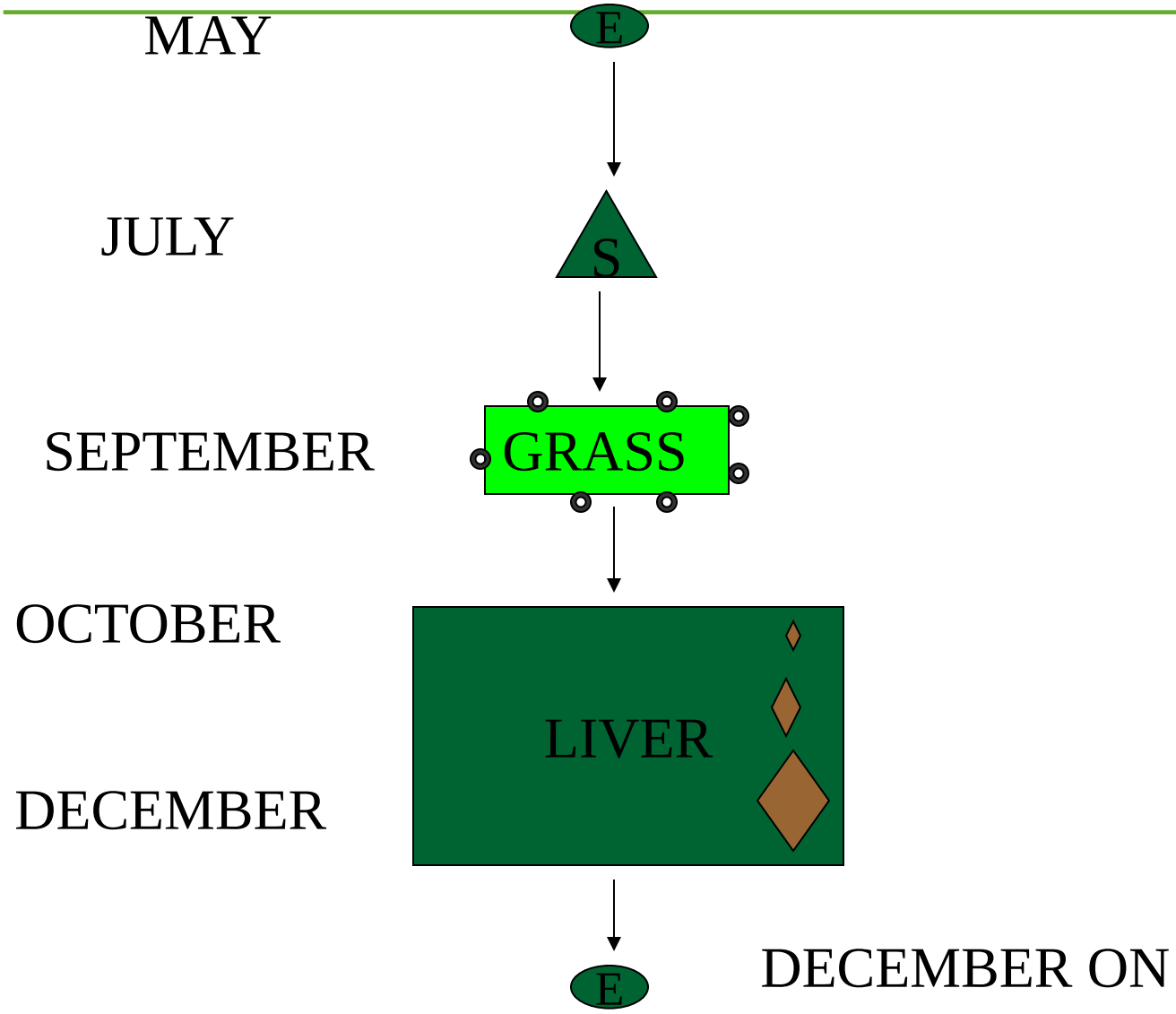
Chronic Liver Fluke diagnoses



Acute Liver Fluke Diagnoses



Fluke Lifecycle (traditional timings)



Fluke requirements

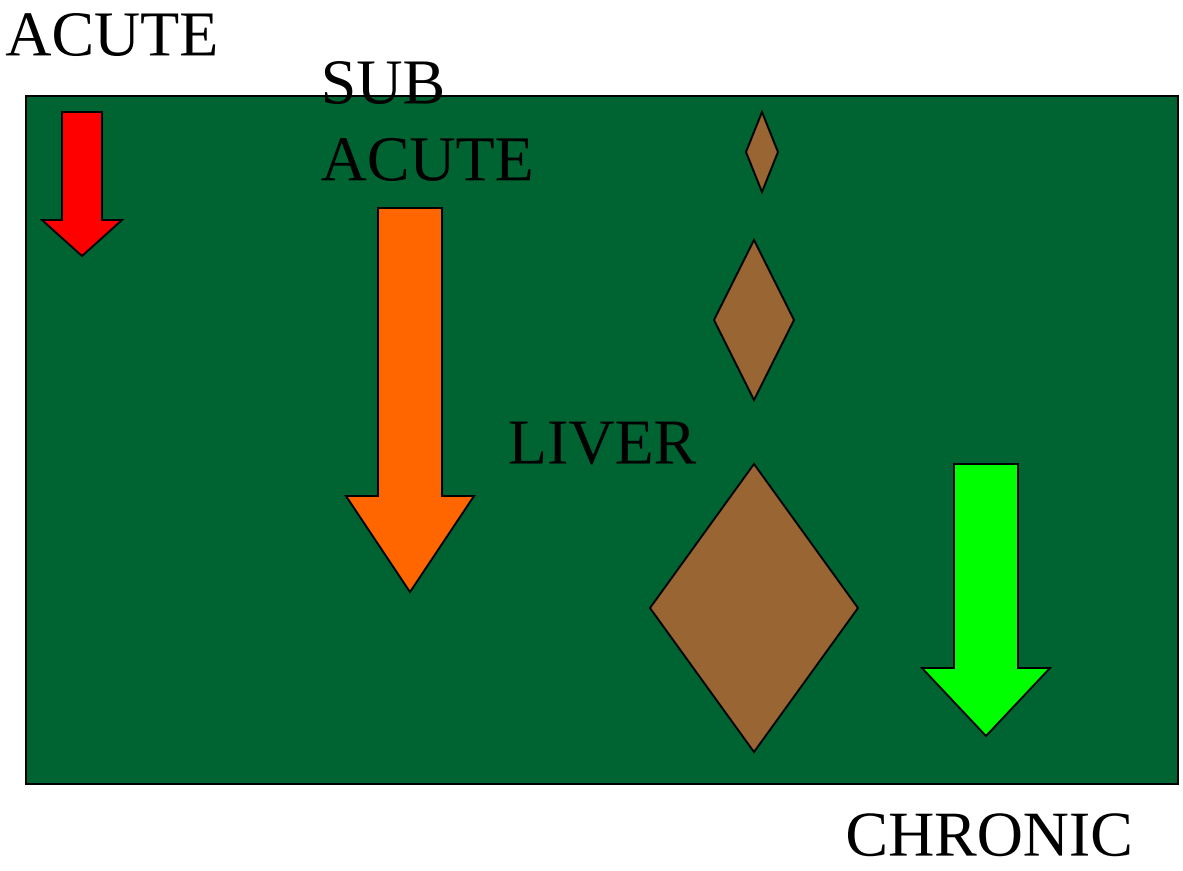
- Snails

- Water

- Temperatures >10ºC
- Sheep, cattle, deer, rabbits, horses, man

Immature and Adult Fluke

Immature and Adult fluke



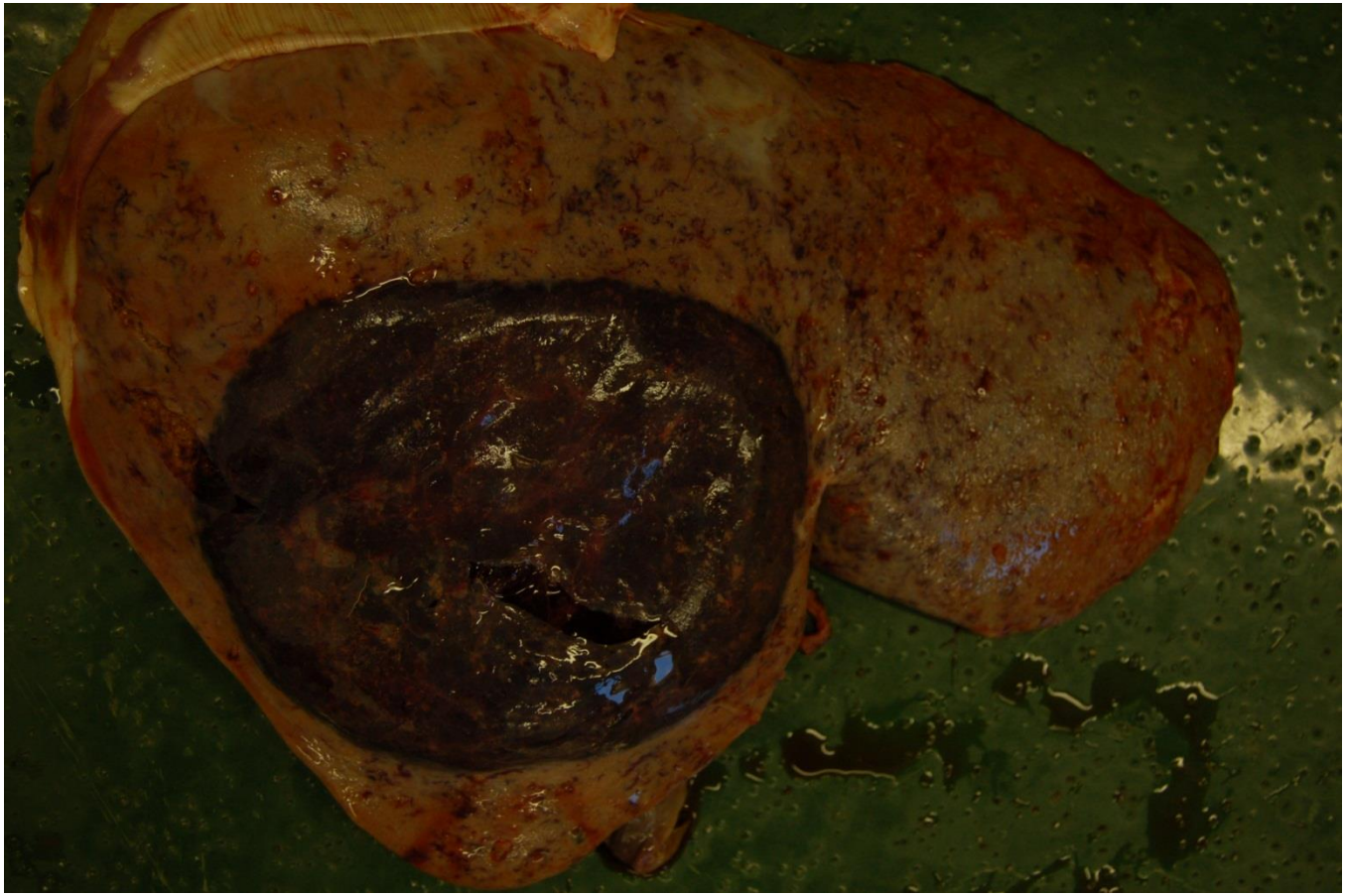
Acute disease

- Usually sheep

- Sudden deaths
- Anaemia - weak, slow, lethargic
- Abdominal pain
- No weight loss

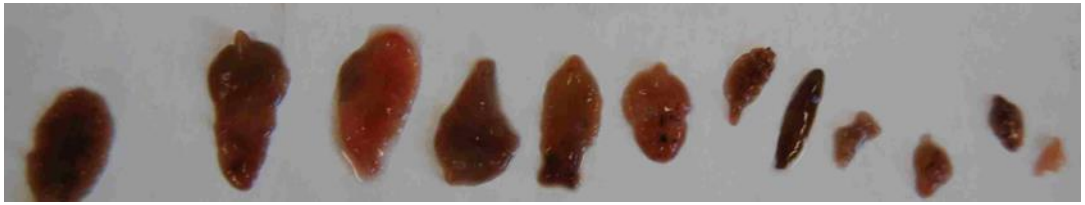
- Large numbers of immature fluke in liver
- Blood in abdomen
- Fluke up to 4-5 mm

Acute Fluke



Subacute disease

- May present as sudden deaths
- Anaemia
- Abdominal pain
- Rapid loss of condition



- Smaller numbers of immature and adult fluke in liver
- Mix of fluke lengths up to 25mm

Subacute Fluke

Chronic disease

- Sheep and cattle
- May present as sudden deaths
- Loss of condition
- Anaemia
- Bottle jaw
- Scour
- Adult fluke in the liver
- Fluke length 15-25mm

Chronic Fluke

Severe Chronic Fluke with re-modelling

Diagnosis

- Clinical signs
- Coproantigen ELISA
- Fluke eggs in faeces
- Biochemistry & Haematology
- Fluke serology Blood/bulk milk
- Post mortem
- Abattoir reports?

Anaemia

Bottle jaw

Clinical signs

- More useful for subacute/chronic disease
- What else could it be?

Fluke egg tests

- Faecal test
- The pre patent period of Fasciola hepatica is usually quoted as 10 to 12 weeks but in reality can vary from around 8 to 15 weeks.
- Will be negative in acute cases, may be negative in subacute cases

Fluke egg tests

- Faecal test
- The time to egg laying for Fasciola hepatica is usually quoted as 10 to 12 weeks but in reality can vary from around 8 to 15 weeks.
- Will be negative in acute cases, may be negative in subacute cases
- **Fluke can be up to 3-months-old in your animals and a faecal egg test will give a negative result**

Coproantigen ELISA

- Carried out on faeces
- digestive enzymes produced in the gut of Fasciola hepatica
- late immature and adult flukes
- commonly between 6 and 9 weeks after ingestion of metacercariae
- Can be negative in acute fluke cases

Coproantigen reduction test

- Useful when testing for triclabendazole resistance
- Best carried out on 10 individually identified sheep
- Weigh and collect faeces
- Dose accurately according to body weight
- Collect faeces 2 weeks again later and compare individual results
- Anything above 8 on results is positive

Coproantigen reduction test

Animal	Pre-dose	Post -dose
1	125	127
2	0.04	3.52
3	97.9	113
4	106	110
5	108	120
6	83.8	119
7	67.5	101
8	82	115
9	74.7	114
10	84.5	117

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TRICALBENDAZOLE RESISTANCE CONFIRMED

Coproantigen reduction test

Animal	Pre-dose	Post -dose
1	28.1	75
2	43	0.04
3	48.9	80.2
4	0	11.1
5	105	20.2
6	21	6.5
7	61.5	0.18
8	0	1.24
9	0	15.5
10	46.6	0.15

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PARTIAL TRICLABENDAZOLE RESISTANCE

Biochemistry

- Liver enzymes– evidence of hepatic damage
- GGT – Biliary damage
- Albumin – looking for loss of blood proteins
- Red blood cell count– identify anaemia

antibodies

- Following infection with F hepatica antibody can be detected from two weeks and will persist while the animal continues to be infected. Following the removal of exposure to the parasite (effective treatment and removal from source of infection) detectable antibody can persist for up to 10 months.
- The test is best used as an indication of group exposure to infection rather than a test to be used on individual clinical cases.

antibodies

- In west of Scotland best used in first season grazers
- Can be useful in dairies (bulk milk test) to monitor trend across the herd

PM

- Quick
- Easy
- Definative (usually)

Other problems

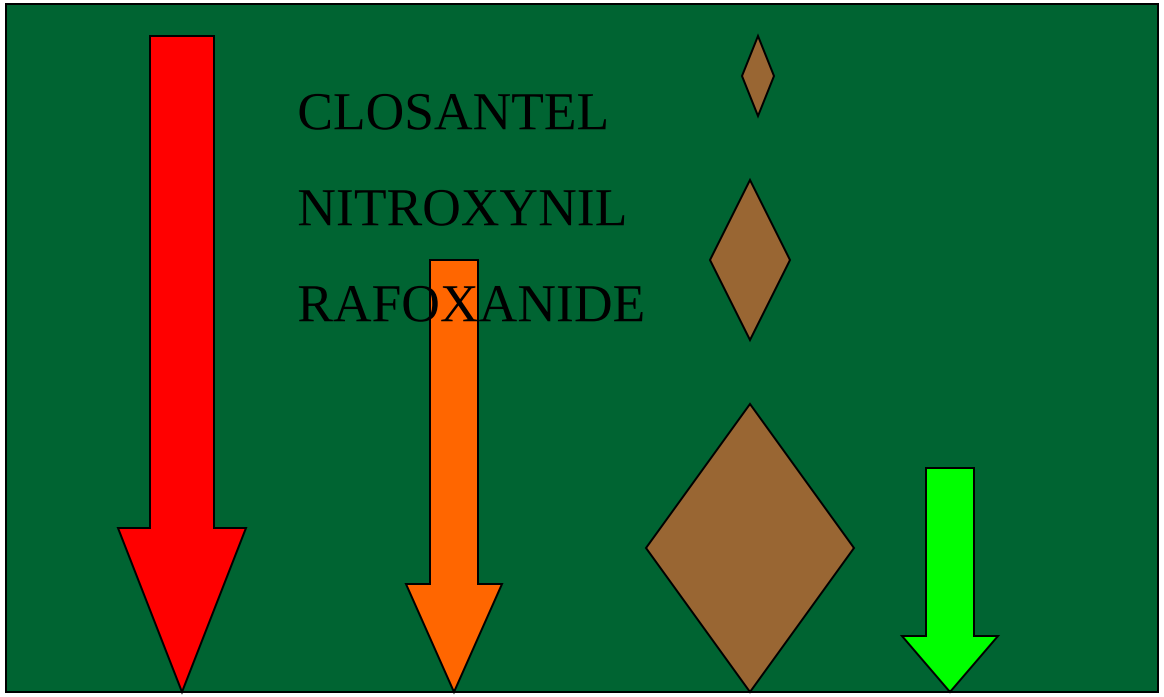
- High barren rates and abortions
- Deaths due to clostridial disease
- Deaths when handled for treatment
- Deaths due to liver failure after successful treatment
- Metabolic disease
- Acute fluke deaths of sheep at winter grazing
- TREATMENT FAILURES

Other losses

- Reduction in milk yields
- Increased deaths of young lambs
- Poor lamb growth rates
- Poor store cattle weights
- Downer suckler cows
- Liver condemnation at abattoirs
- Treatment costs including time

Right Product Right Time

TRICLABENDAZOLE



OCTOBER TO JAN/FEB.

OCTOBER TO JAN/FEB.

CLORSULON

ALBENDAZOLE

OXYCLOZANIDE

MAY

When to treat?

- Fluke treatments are not long acting

- Sheep - October, January and May
- High risk years –repeat 4-6 weeks after the October and January doses, May.

- Extreme years on wet farms - ? Every 4 weeks in autumn, ?treat and house.

Beware toxicity

- Closantel – blindness (permanent), anorexia, ataxia. Do not use more often than every 6 weeks
- Nitroxynil - fever, fast breathing, hyperexcitability, deaths usually within first 24 hours
- Oxyclozanide – anorexia, scour, swelling of head

When to treat?

- Beef cattle - treat after housing, (?consider dosing twice in extreme years)
- Outwintered cattle - treat winter and spring (?3 times in extreme years)

- See www.nadis.org.uk for fluke forecast by area.
- See www.scops.org.uk for general info.

Quarantine dosing

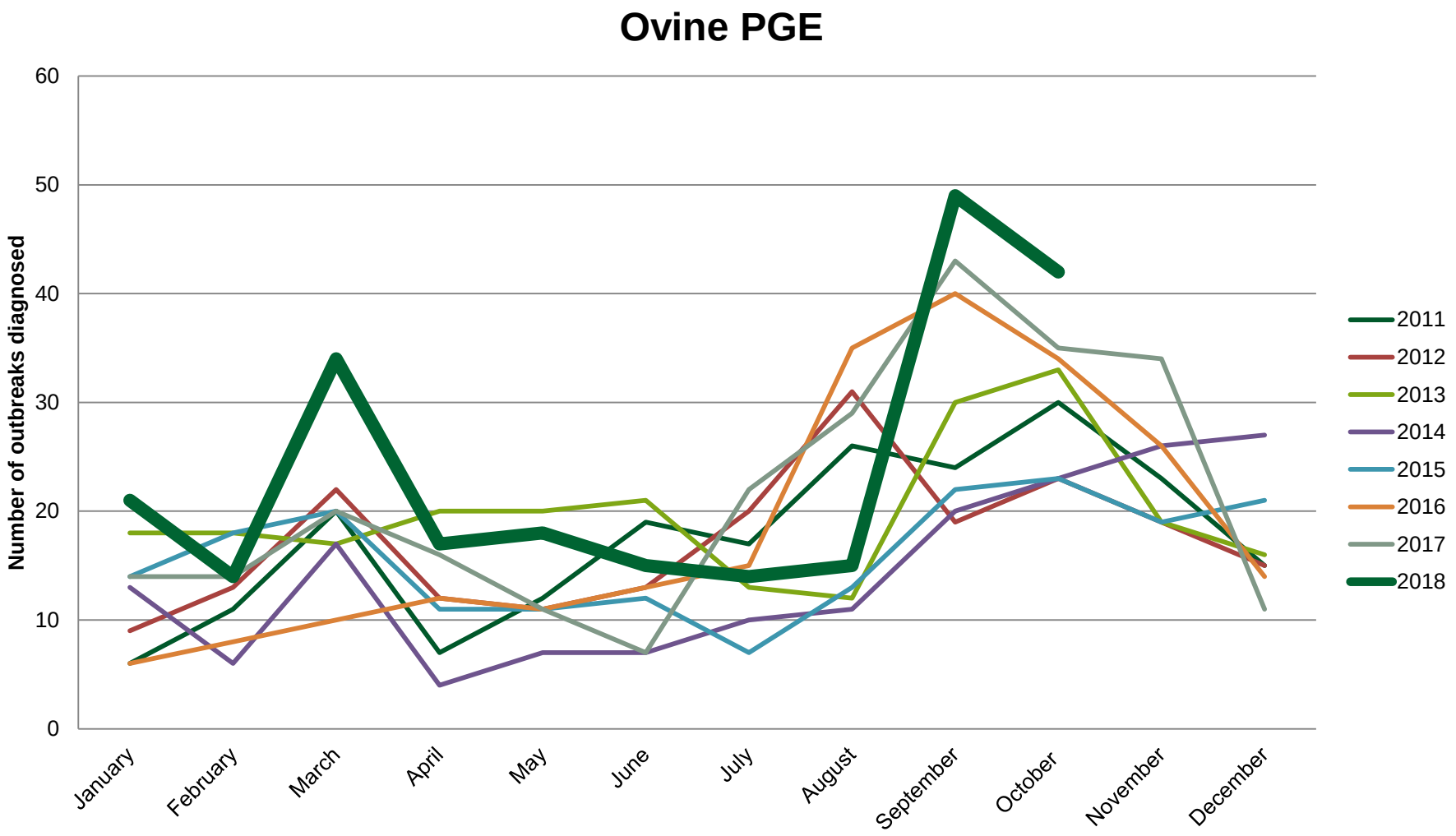
- Avoid introducing drug resistant fluke.

- Treating with more than 1 drug, (not on the same day), will reduce the risk.
- Keep off wet ground for 4 weeks after treatment.
- Check faeces for fluke eggs.

What is killing sheep this autumn/winter

- Worms
- Pasteurellosis
- NOT fluke so far

Diagnoses of worms



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