

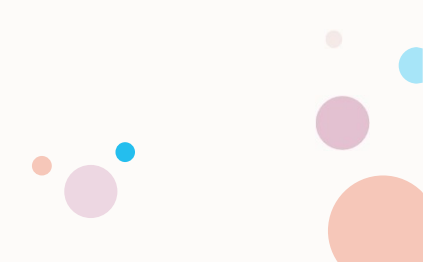
# Shropshire Sheep Society

James Hipperson BVSc MRCVS.





# Objectives

1. Health schemes
    - The diseases
    - Clinical signs
    - Treatments and Preventions
    - Testing and monitoring.
  2. Other relevant diseases to the sheep industry.
  3. General flock health treatment and prevention.
- 

# 1. Maedi - Visna

- A Lentiviral disease of sheep. Pneumonia and neurological signs
  - Prevalence is world wide.
- Two main methods of spread within a flock. Vertically in the colostrum containing the virus, or in aerosolised droplets.
- Clinical signs – Initially vague and may take up to 2 years to develop, weight loss, poor BCS.

Progression - Lagging behind when driven, breathing more laboured.

End stage – Increased respiratory rate, arthritis and chronic mastitis, terminal if not culled.

No treatment/No vaccination.

# Testing and prevention

- No treatment or vaccination
- Testing and prevention.

## Testing

- Blood sample – 0.5ml of serum.

(Single animal test (£9.10 and a 6 day turn around)

(Flock test -12 animals £41.00, 6 days)

## Prevention

- Closed flock
- Purchase from accredited flocks only.
- Double fence boundaries
- Avoid non MV shows



# Accreditation schemes

The Scheme is open nationally.

MV accredited sheep must be kept separately from non accredited sheep at all times.

Membership is at the discretion of SAC/SRUC Veterinary Services.

## Benefits of the scheme:

- Reduces the risk of your flock getting the virus
- Allows you to attend shows and sales with your flock
- Allows you to export to Maedi Visna free countries
- Allows you to advertise your flock as MV accredited
- Adds value to your flock and enables you to sell to purchasers who have MV accredited flocks





# Achieving accreditation

- 1st QT - test **ALL** animals 12 months of age and older including rams/billies.
- 2nd QT - repeat **6-12** months later.
- **MV/CAE accredited status** achieved after passing **two** qualifying tests.
  
- **First qualifying test on a proportion of animals if ALL the following applies:**
  1. Flock/herd established for a **minimum of 3 years**.
  2. At least **90% of female replacements** are homebred.
  3. All **purchased animals in the past 3 years** are from **MV/CAE accredited** flocks/herds.
  4. There is **no other animal on holding(s)** that is to remain non-MV/CAE accredited.

# Accredited flock by purchase of accredited stock.

- **Premises check** form to be **signed by vet**
- 1st test will be a routine periodic blood test (RPBT) **6 to 12 months after flock was established.**
- All animals over **12 months of age** to be tested.
- Then normal RPBT testing intervals apply.

# Maintaining accreditation

- 1. First routine periodic blood test (RPBT) on ALL or PROPORTION according to flock size, of animals 18 months of age and older including rams/billies - due 12 months after passing 2nd QT.**
- 2. Second RPBT due 2 years later.**
- 3. Thereafter RPBT every 3 years.**
  - Where non accredited stock are kept, you will remain on 2-yearly testing plus undertake a **female cull screen of 12 non MV/CAE accredited animals. *Test annually if positive results in cull screen or if screen not carried out.***
  - **Separately managed groups to be treated as individual flocks.**



# So you want to buy some more sheep.

- **ALL** bought in **Accredited** animals **MUST** be tested **6 -12 months after arrival**, we recommend a **point of purchase test** too.
- **Imported animals** under a non-UK Scheme **MUST** be kept isolated until authorised by PSGHS (**authorisation also applies to imported semen/embryos**)

**Non-accredited animals** **MUST** be isolated and pass **two QT** at **12 months of age and older** before joining flock/herd.

# Costs

Premium Sheep and Goat Health Schemes		
Turnaround Times for MV/CAE/EAE/Johnes: 5-17 working days. PSGHS submission form available at <a href="http://www.sheepandgoathealth.co.uk">www.sheepandgoathealth.co.uk</a>		
MV/CAE Accredited Membership	Price £	
Annual fee charged according to flock/herd size animals aged 18 months and over	0-10	70.00
	11-50	100.00
	51+	155.00
Profile/Test	Samples	Price £
MV/CAE	Clotted blood	3.20



# Costs

- Axiom
- Annual membership fee £45.00 plus VAT (at time of writing)
- Blood antibody ELISA - £3.50/sample.



# Vet costs

- Typically based on clinical time.
- Cost of field kit – Around £50. Approx £1 per tube.
- Visit – Around £25-30





# • Further information

- Visit SRUC website  
<https://www.sruc.ac.uk/>
  - Contact your local vet
- 

## 2. Johnes

- A chronic bacterial infection of the gut.
- Caused by Mycobacterium Avium subspecies Paratuberculosis (MAP)
- Affects all ruminants
- Leads to gut thickening, poor protein absorption, wasting/muscle loss particularly around the gluteals, chronic scouring especially around stressful periods e.g. lambing.
- A shit in mouth disease (SIM) disease. Animals are infected by consuming water or feed contaminated with MAP bacteria.
- Can be infected from birth.
- Long incubation period, rarely seen in animals less than 2 years.
- Waxing and waning disease. Animals temporarily recover then relapse.
- Possible link to Crohn's disease. MAP found in human patients blood.







# Treatment and prevention

- **No treatment.**
- **Gudair vaccine licensed in sheep and goats.**
- **Control based on prevention of introduction.**
- **Strict biosecurity.**
- **Test and cull infected animals.**
- **Try not to retain the offspring of infected animals**

# Testing

1. Johnes ELISA –
  - £5.30/sample.
  - 0.5ml serum.
2. Johnes culture
  - 20g of faeces
  - £49.00
  - 16 weeks
3. Johnes microscopy
  - 5g of faeces
  - £16.00
  - Same day
4. Johnes – PCR
  - 5g faeces
  - £34.00
  - 6 days

# Results

## Profiles:

Code	Name	Price
FSA2	Adult Ruminant Scour Package 2	
FB12	Vitamin B12	
		£63.00

## Samples Received:

Sample Date: 05/08/2021

1 x Un-Spun Gel 1 x EDTA 1 x Heparin 1 x Faeces

## Test Results:

Chemistry	Result	Units	Interval
Vitamin B12	>738	pmol/L	> 221
Molecular Diagnostics	Result	Units	Interval
Johnes PCR	DETECTED @ Ct 30		
Parasitology	Result	Units	Interval
Fluke microscopy	No fluke eggs seen.		
Bacteriology	Result	Units	Interval
Salmonella Culture	Not Isolated		

## Comments:

**Result enclosed (06/08/21) : Vitamin B12**

No evidence of cobalt deficiency from this result.

Katy Hewitson BVMS MRCVS  
Farm Animal Veterinary Advisor

# Vaccination - Gudair

- Subcutaneous route.
- Licensed in sheep and goat.
- Administer one dose of 1 ml subcutaneously.
- It is recommended that all replacement animals are vaccinated between 4 weeks and six months of age. In affected or at risk flocks and herds or groups of animals, the vaccination should be carried out on all individuals, including adult animals.
- Zero day withhold.

# Johnes Accreditation

- Johnes's Disease Risk-Level Certification Programme Objectives
- Flock progress from level 5 to level 1 as they progress in controlling the disease.
- Flocks not participating are assigned a risk level of 5.

**Level 1: Flock must have had three consecutive clear flock tests at annual intervals.**

**Level 2: This applies to all flocks that have had an initial, or two consecutive clear tests.**

**Level 3: These are flock that have test positive animals identified within the flock/herd, but the number of test positive animals does not exceed 3% .**

**Level 4: These flock have more than 3% of eligible animals identified as test positive animals at the most recent test.**

# 3. Chlamydophila abortus

- Also known as Enzootic abortion in ewes (EAE)/Chlamydial abortion.
- A bacterial infection of the placenta causing .
- The most commonly identified and reported cause of abortion seen in the UK flock.
- Abortions usually occur in the 3-4 weeks pre lambing. Weak or still born lambs.
- Intervention required if >5% ewes aborting. Target <2-3%
- Abortion storms.



# Ovine abortion

## Causative agents – top five

1. EAE - BACTERIA
2. Toxoplasmosis - PROTOZOA
3. Campylobacter- BACTERIA
4. Listeria - BACTERIA
5. Samonella - BACTERIA

**CARE – ALL ZOONOTIC ORGANISMS THAT CAN CAUSE ABORTION IN HUMANS!**

# Identifying *C.abortus*

- Grossly at PME. Late term lambs.
- Thickening/placentitis of the intercotyledonary spaces
- Sample of the placenta – lab use ziehl – nelson stain to identify acid fast bacteria.
- Also collect brain tissue for toxoplasmosis.
- Fetal stomach contents for listeria/salmonella.



# Economic impact of EAE

- Financial loss to the industry is estimated to be £15 million per year
- A 5% abortion rate can reduce potential gross margin by 10%
- Each ewe that aborts can represent a reduction in gross margin of approximately £100.

[Company Name]  
[Street Address] [City, ST OF Code]  
[Phone: 111-111-1111] [Fax: 111-111-1111]  
[info@example.com]

## Profit & Loss Statement

For the Period Ended \_\_\_\_\_

	\$	£
Revenue	000000	
Cost of Sales	000000	
Gross Income	000000	
Operating Expenses		000000
Operating Profit		000000
Other Income		000000
Other Expenses		000000
Net Profit		000000

# Treatment and prevention

- Sourcing replacement stock from flocks “accredited free” or of known status is strongly advised.
  - Closed flock.
- Isolate any aborted/aborting ewes and don’t reintroduce until post lambing and when discharge has dried. Mark/record tags.
  - Disinfect and plenty of bedding.
- In the event of an abortion storm oxytetracyclines can be used to help reduce losses. BUT this is not best practice.
  - VACCINATIONS
    1. CEVAC CHLAMYDIA
    2. INMEVA
    3. ENZOVAX

# The vaccine

- Cevac – Approx £2.50 per ewe but depends on stock numbers.
- 20d, 50d or 100d pack sizes.
- Not < 4 weeks before mating
- Do not vaccinate pregnant animals.
- Do not vaccinate animals which are being treated with antimicrobials, particularly tetracyclines.
- Can be administered the same day but not mixed with a commercial *Toxoplasma gondii* vaccine.
- Dose: 2 ml by intramuscular or subcutaneous injection.
- from 5 months of age.



# EAE Accreditation

- Who is eligible?
- Benefits of scheme?
- Advantages of EAE accredited ewes?
- What does it involve?





# Costs

## Premium Sheep and Goat Health Schemes


Turnaround Times for MV/CAE/EAE/Johne's: 5-17 working days. PSGHS submission form available at [www.sheepandgoathealth.co.uk](http://www.sheepandgoathealth.co.uk)

MV/CAE Accredited Membership		Price £	
Annual fee charged according to flock/herd size animals aged 18 months and over	0 -10		70.00
	11-50		100.00
	51+		155.00
<i>Profile/Test</i>	<i>Samples</i>	<i>Price £</i>	
MV/CAE	Clotted blood		3.20
EAE (available for MV Accredited members)	Clotted blood		3.10
EAE Accredited Membership		Price £	

# Assure ewe

- CEVA
- Subsidised testing
- Flocks > 50 ewes (MSD require >100 ewes)
- Within 3 months of lambing.
- Test up to 6 barren or aborted ewes
- MSD also run a similar scheme.

2021\_Assure-Ewe-Form\_Biobest\_updated.pdf

**ASSURE EWE - SUBSIDISED CHLAMYDIA SEROLOGY SUBMISSION FORM** 

Between 1st of January until 30th September. For use in flocks of 50 or more breeding ewes. Ceva Animal Health will fund single serology testing of up to 6 ewes in flocks of 50+ breeding ewes, where abortion has been identified.

- Ewes should be blood sampled within 3 months of lambing due date
- Please sample using red top (serum) vacutainers (one per animal)
- All fields must be completed to avoid delayed processing of your samples
- All information provided on this form will be treated as strictly confidential by Ceva Animal Health Ltd
- Information may also be used anonymously for comparative disease incidence statistics
- By taking part in this service it is understood that you and your client agree to further communication with Ceva

VET DETAILS		FARM DETAILS	
Contact name	Contact name	Contact name	Contact name
Practice	Practice	Practice	Practice
Address	Address	Address	Address
Tel	Tel	Tel	Tel
Other	Other	Email	Email

AssureEwe is not suitable for use in ewes that have already been vaccinated against Chlamydia.



ANIMAL ID	SAMPLE REFERENCE	DATE OF SAMPLE	OTHER REQUESTED TESTS CHARGED	BIOBEST REFERENCE
1				
2				
3				
4				
5				

FLOCK DETAILS	FARM/CLINICAL HISTORY
Number breeding ewes	Please include relevant history - including (but not exclusive to) months of lambing, and other vaccines (including Ceva's Enzovac™ or Innova™) used
Lambing percentage %	
% Barren	
I understand that any testing in addition to chlamydia will be revealed to the practice. I confirm the flock has not been vaccinated against this disease.	
VET'S NAME: .....	
VET'S SIGNATURE: .....	
Please return results to submitting vet, <a href="mailto:matthew.jooby@ceva.com">matthew.jooby@ceva.com</a> and <a href="mailto:kythe.mackenzie@ceva.com">kythe.mackenzie@ceva.com</a>	

FOR BIOBEST USE ONLY		DATE OF RECEIPT:		INVOICE:	
NO. OF SAMPLES:	FORM NO:			VET CHECKED:	
BOOKED IN:	DATABASED:			REPORTED PRACTICE:	
CHECKED:	REF CHECKED:			REPORTED CEVA:	

Please send samples and fully completed form to:  
Biobest Laboratories Ltd, Clonmel, Co. Wick, Ireland. The Sublimity Technology Millon Bridge, St. Patrick's, St. John's, Dublin 8.

Please note that this scheme is funded by the Department of Agriculture, Food and the Marine, under the National Development Plan 2014-2020. The scheme is subject to the terms and conditions of the National Development Plan 2014-2020. The scheme is subject to the terms and conditions of the National Development Plan 2014-2020. The scheme is subject to the terms and conditions of the National Development Plan 2014-2020.

## 4. Scrapie

- What is scrapie?
- How to test?
- Is there a cure?
- Purpose of the scheme?
  
- Note – Scrapie is a notifiable disease.



# Scrapie testing

- Prion protein genotyping.
- Blood sample using purple topped tube.
- Codons 136, 154 and 171.
- Most resistant scrapie genotype is ARR/ARR.
- Classification into 5 groups

Genotype result	Type	Degree of resistance/susceptibility
ARR/ARR	1	Sheep that are genetically most resistant to scrapie.
ARR/AHQ ARR/ARH ARR/ARQ	2	Sheep that are genetically resistant to scrapie, but will need careful selection when used for further breeding.
AHQ/AHQ AHQ/ARH AHQ/ARQ ARH/ARH ARH/ARQ ARQ/ARQ	3	Sheep that genetically have little resistance to scrapie and will need careful selection when used for further breeding.
ARR/VRQ	4	Sheep that are genetically susceptible to scrapie and should not be used for breeding unless in the context of a controlled breeding programme approved by NSPAC.
AHQ/VRQ ARH/VRQ ARQ/VRQ VRQ/VRQ	5	Sheep that are highly susceptible to scrapie and should not be used for breeding.

This table is subject to continuous scientific review.

# Costs

Useful Tests Available Outside Premium Sheep and Goat Health Schemes			
<i>Profile/Test</i>	<i>Samples</i>	<i>Price £</i>	
Scrapie Full Genotyping (136/154/171) Discounted price for samples	EDTA blood	1-14	32.00
		15-29	27.00
		30-49	21.50
		50-69	19.00
		70+	16.00
Test Packages (flock/herd screens)			



# RELEVANT DISEASES



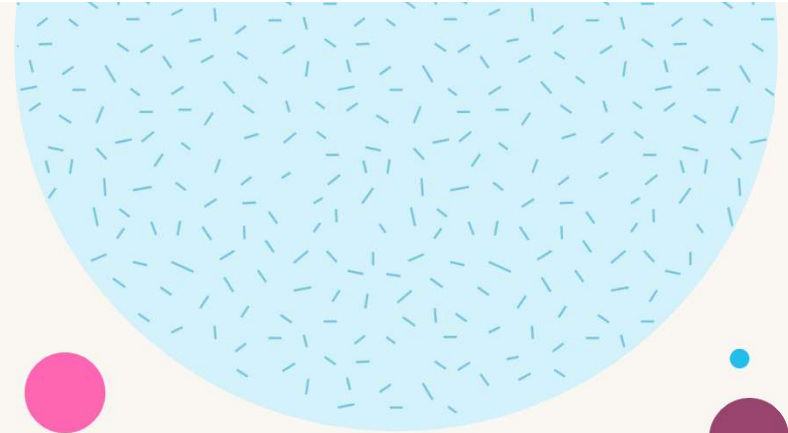
# • Borders disease

- Border disease is caused by infection of the fetus in early pregnancy with border disease virus a pestivirus.
- Surviving lambs are persistently viraemic, and the virus is present in their excretions and secretions, including semen.
- Hairy shakers
- PI animals
- Control - There is **no effective vaccine**.

**no effective treatment**

**Identification and removal of persistently infected animals**





# Scab

- Mites burrow into the skin layers
- Skin scrapes to examine under a microscope.
- Blood antibody test.
- Dipping or injectable Ivermectins can be used for the treatment of scab.
- Notifiable in Scotland.





# CLA

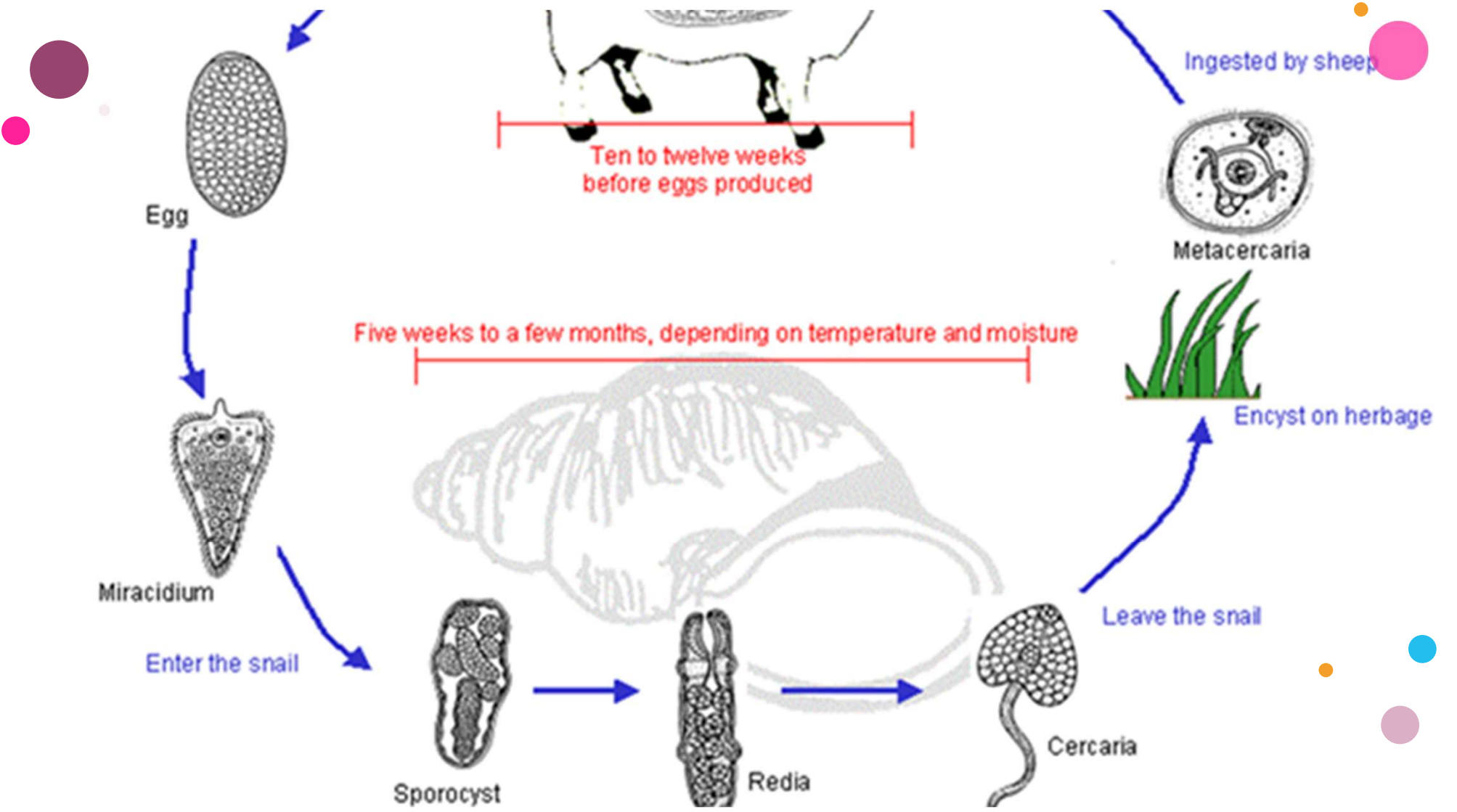
- Caseous Lymphadenitis
- Chronic bacterial infection
- *Corynebacterium pseudotuberculosis*.
- Lymph node abscessation
- Antibiotics are ineffective.
- Cull from flock.
- Quarantine and test incoming stock.



# Fascioliasis (Liver fluke)

- Some farms more susceptible.
- *Galba truncatula*/mud snail.
- Can cause permanent liver damage and be fatal.
- Autumn treatment – Kill adult and immature fluke – Triclabendazole (approx. 56- 60 day with hold)
- Spring treatment – Adulticide.
- Monitor – PME/abbatoir reports
  - Egg counts
  - Blood sampling – raised liver enzymes





# Blue tongue

- Bluetongue is a non-contagious, viral disease spread by culicoides midges.
- BTV- 8 viral strain in southern France so risk to UK
- Peak midge populations occur during the late summer and autumn in Europe.
- Clinical signs
- Prevention – Insecticides/ Vaccines



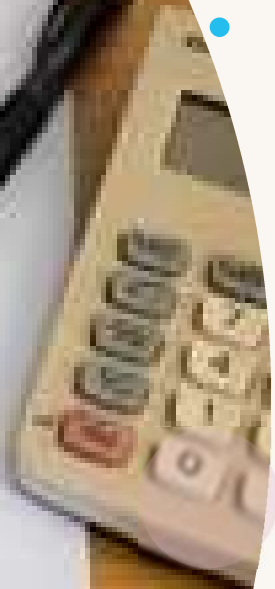
# Endoparasitism

1. Lambs
2. Ewes
3. SCOPS principles



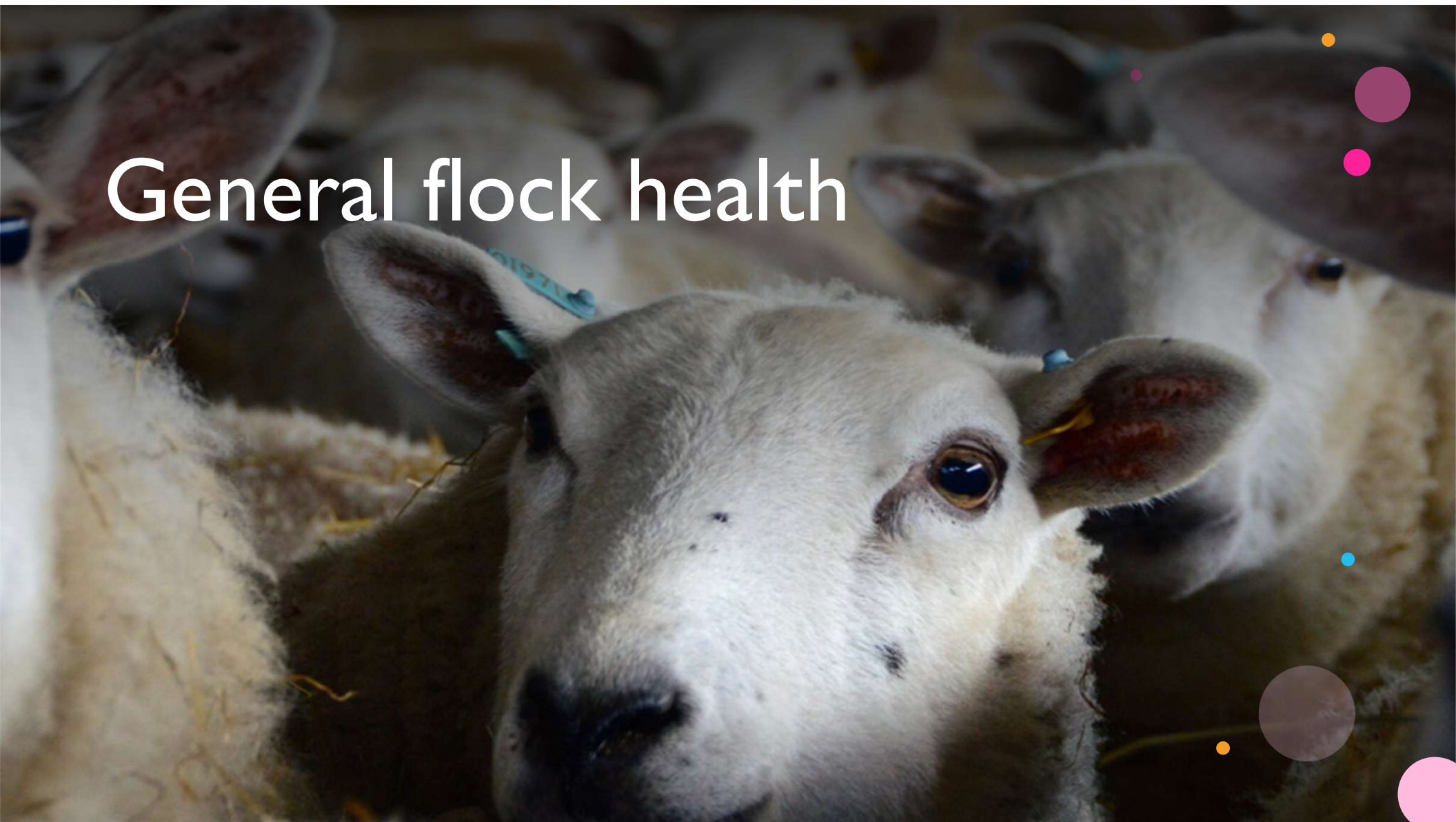
Parasite control guide 2021

ANZOB

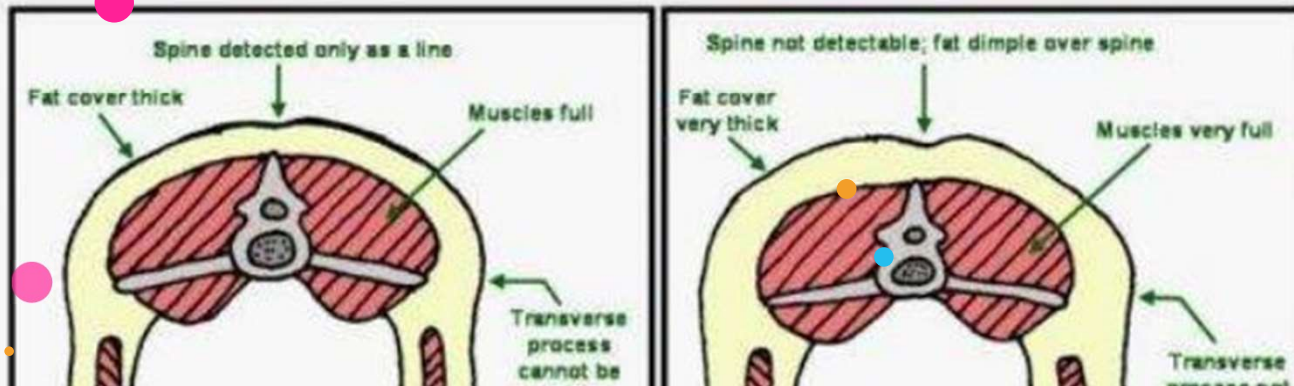
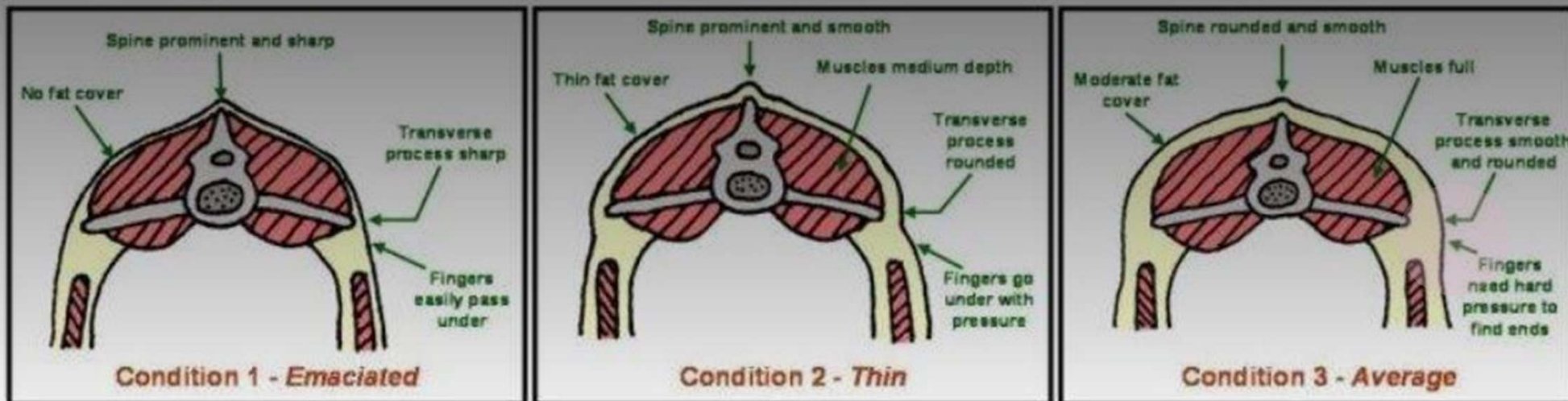




# General flock health



# Body Condition Scores – Sheep/Goats





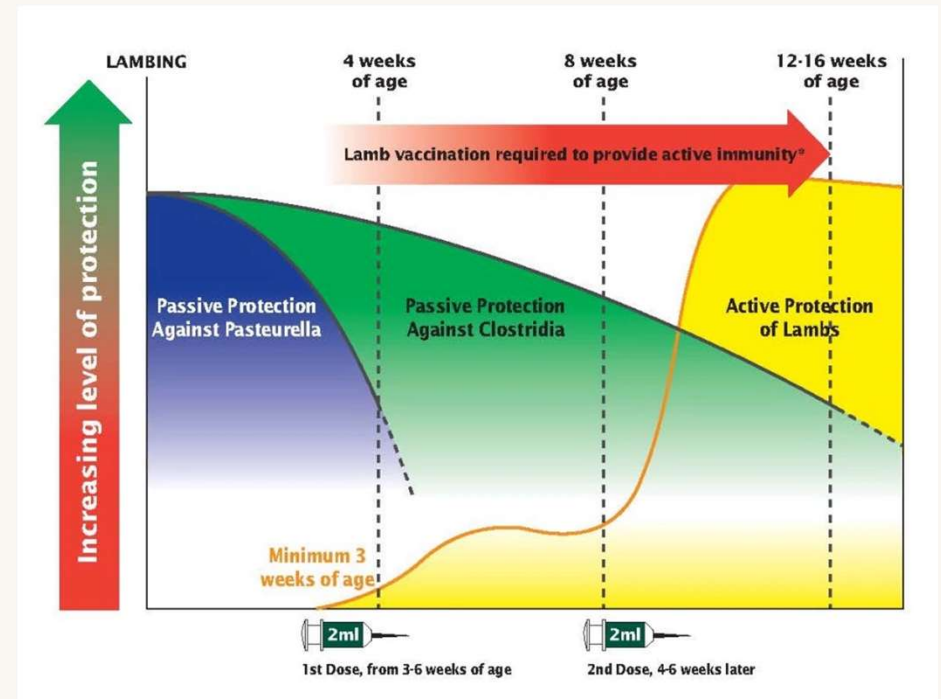
# Clostridial/Pasteurella

All breeding stock (incl. tups) should be vaccinated against clostridial diseases.

This requires 2 doses for unvaccinated animals, with annual boosters thereafter.

By giving ewes their booster in the last month of pregnancy, immunity will be passed on to their lambs.

Vaccination in lambs may be required as colostral immunity wains.



# Lameness



## Five point plan to control lameness on farm

Cull repeat offenders – two strikes then cull.

Quarantine – isolate and observe incoming sheep for 3 weeks and footbath on arrival.

Treat as soon as possible. Rapid treatment helps stop the cycle of infection.

Reduce disease challenge. Avoid spreading infection during handling and gathering. Bacteria spread in wet soiled handling areas and gateways.

Vaccinate. Footvax provides immunity against footrot. Consider vaccinating before high risk periods.



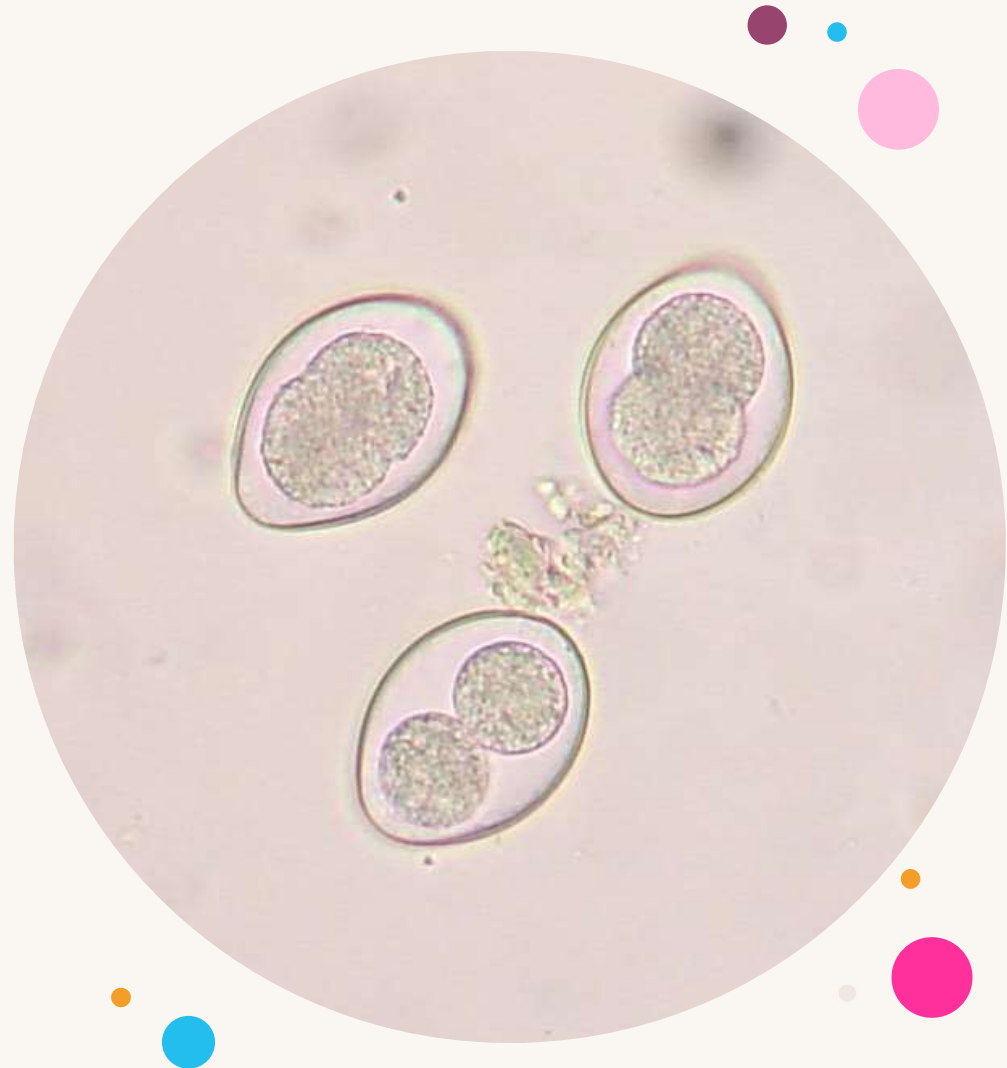
# Orf- Ovine pustular dermatitis

- Caused by a parapox virus
- Highly resistant in the environment. Long survival times.
- Causes lesions of the udders, lips and predisposes to mastitis
- No anti virals available. Treat secondary infections.
- Scabivax can be used as a preventative.
- Live vaccine so do not use unless orf is diagnosed.
- ZONOTIC!!!



# Coccidiosis

- A protozoal disease of the gut.
- Environmental. Typically wet areas around water troughs.
- Multiple in enterocytes
- 8 species, 2 pathogenic.
- Faecal examination under microscopy.
- Typically between 4- 16 weeks.
- Treatment – Toltrazuril (Tolracol)  
4ml/10Kg)



# Traumatic mydiasis/Blow fly strike

- Major problem in the summer months.
- Can be fatal.
- Clipping and dagging will also help prevent infestations.
- Ectoparasiticides



# Jaagsiekte/OPA

- Ovine pulmonary adenocarcinoma (OPA, also known as jaagsiekte)
- infectious and fatal lung disease of sheep.
- It is caused by a virus, known as jaagsiekte sheep retrovirus (JSRV)
- Infects cells in the lung making them form tumours.
- Wheel barrow test.
- Diagnosis at PME, can ultrasound scan





# Pre tugging checks

- Aim for BCS 3.5 at tugging
- Examine feet and treat appropriately
- Examine eyes and teeth
- Check prepuce and testicles
  - Are there any sores around the prepuce?
  - Are the testes soft?
  - Are there two?
  - Are they the same size?
  - Do they move freely within the scrotum?
- Tups should receive worm, fluke, trace elements and clostridial vaccine with the ewes at least 4 weeks before tugging





# Common conditions of the lamb

- Navel ill
- Joint ill
- Watery mouth
- Entropion



# Health check screens

1. Cull ewe screen
2. Pre tuppig fertility screen
3. Mid pregnancy productivity screen
4. Pre lambing metabolic screen

## Test Results:

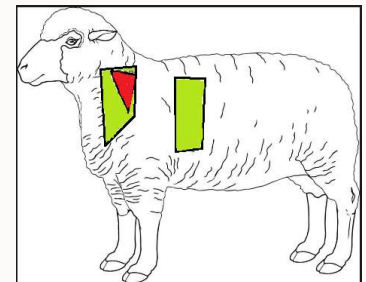
Animal	Albumin g/L 24.0 - 34.0	Urea mmol/L 2.6 - 6.6	BHB mmol/L 0.00 - 1.20
UK178977 100011 - TRIPLLET	31.3	5.9	1.10
UK178977 00007 - TWIN	29.6	H 6.9	0.40
UK173700 2520 - TWIN	28.4	H 6.8	0.54
UK284229 05472 - TRIPLLET	29.4	5.4	0.50
UK311346 02716 - TRIPLLET	31.8	H 7.5	0.93
UK311346 01977 - TWINS	26.5	H 31.2	1.10

# Injection sites/Responsible medicines usage.

- Use a clean needle and syringe every time
- Make sure the site is free from faeces and excessive dirt
- Ensure you know which site the product is meant to go into under the skin or in the muscle
- Ensure the animal is properly and adequately restrained

Inject all **intramuscular** products in the **neck area** and all **subcutaneous** products over the **ribs behind the shoulder or over the neck**

**Dispose of all syringes and needles in clinical waste and a sharps bin**



# Courses/Health plans

- For anyone who may be interested Belmont Farm and Equine vets offer....
  1. Lambing courses
  2. Small holder courses
  3. Flock health planning/antimicrobial reviews.

Give the office a call if you are interested.....

- Ledbury - Newmarket House, Market Street, Ledbury HR8 2AQ  
01531 806129
- Bromyard - Unit 1, Porthouse Industrial Estate, Bromyard Herefordshire HR7  
01885 488440
- Hereford  
Unit 5B, Sigeric Business Park, Rotherwas Hereford HR2 6BQ  
01432 351471



The End

