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Bia agus Mara
Department of Agriculture,
Food and the Marine

Thin Ewe Scheme – The Findings

DAFM RVLs and Teagasc

Teagasc National Lowland Sheep Conference 2025

Seamus Fagan Athlone Regional Vet Lab

Aim/Purpose

- Provide information on the causation and aetiology of disease processes causing chronic ill thrift in ewes in Irish Sheep flocks where thin ewes are perceived to be a substantial problem.

- What is the contribution of iceberg diseases relative to the contribution of routine conditions such as problems with dentition and parasites.

Background

- 1st clinical cases of MVV in two flocks in Ireland were diagnosed in 2020.
- Although notifiable its control is not currently regulated or mandated in law.
- This prompted a discussion with sheep industry stakeholders: is a voluntary industry led control programme required? What form should this take?
- Stakeholders considered it essential that we get an estimate of Iceberg Disease occurrence in Ireland.

BACKGROUND Contd.

- A recent study of 75 flocks in the UK found over half had at least one ‘iceberg disease’. Highlighted the need for more research here.

- The level of parasitism in thin ewes with possible co-morbidities may illuminate the potential for chronic diseases to impact other health parameters within flocks including parasite burden.

- Poor dentition as a cause of ill thrift is likely under diagnosed and may result in imprudent use of anthelmintics and anti-microbials in these refractory cases.

Project Protocol

Flock recruitment will be co-ordinated by Teagasc.

Flock owners undertake to send up to 3 thin ewes to the local RVL for euthanasia and post mortem examination.

Flocks which have submitted 3 thin ewes, or if an iceberg disease is identified in at least one ewe submitted, will be considered to have completed the protocol.

What is an iceberg disease?

- An iceberg disease is one where the illness and losses we see in animals (clinical disease) is only a small proportion of the true number of infected animals

- **Iceberg diseases are deceptive** – they are usually well established in a flock or herd by the time you see the first impact.

- You can buy them in when you buy apparently ‘healthy sheep’

- 5 main Iceberg Diseases
  - Maedi-Visna Disease
  - Caseous Lymphadenitis
  - Ovine Pulmonary Adenomatosis (OPA) = ‘Jaagsiekte’
  - Pseudotuberculosis (Johnes Disease)
  - Border Disease

Study Results

Individual Diagnoses	Ewes	%	Flocks	%
Parasitic gastroenteritis	53	51	26	43.3
Teeth	18	17.3	9	15.0
Ovine Pulmonary Adenomatosis (Jaagsiekte)	7	6.7	4	6.7
Caseous Lymphadenitis	4	3.8	3	5.0
Johnes	5	4.8	5	8.3
Metritis	1	1.0	1	1.7
Abscess	1	1.0	1	1.7
Lameness	5	4.8	4	6.7
Tumour	1	1.0	1	1.7
Pneumonia/lungworm	5	4.8	4	6.7
Liver Fluke	4	3.8	2	3.3
Total	**104**		**60**	


Department of Agriculture, Fisheries and Food
Regional Veterinary Laboratories
Athlone/
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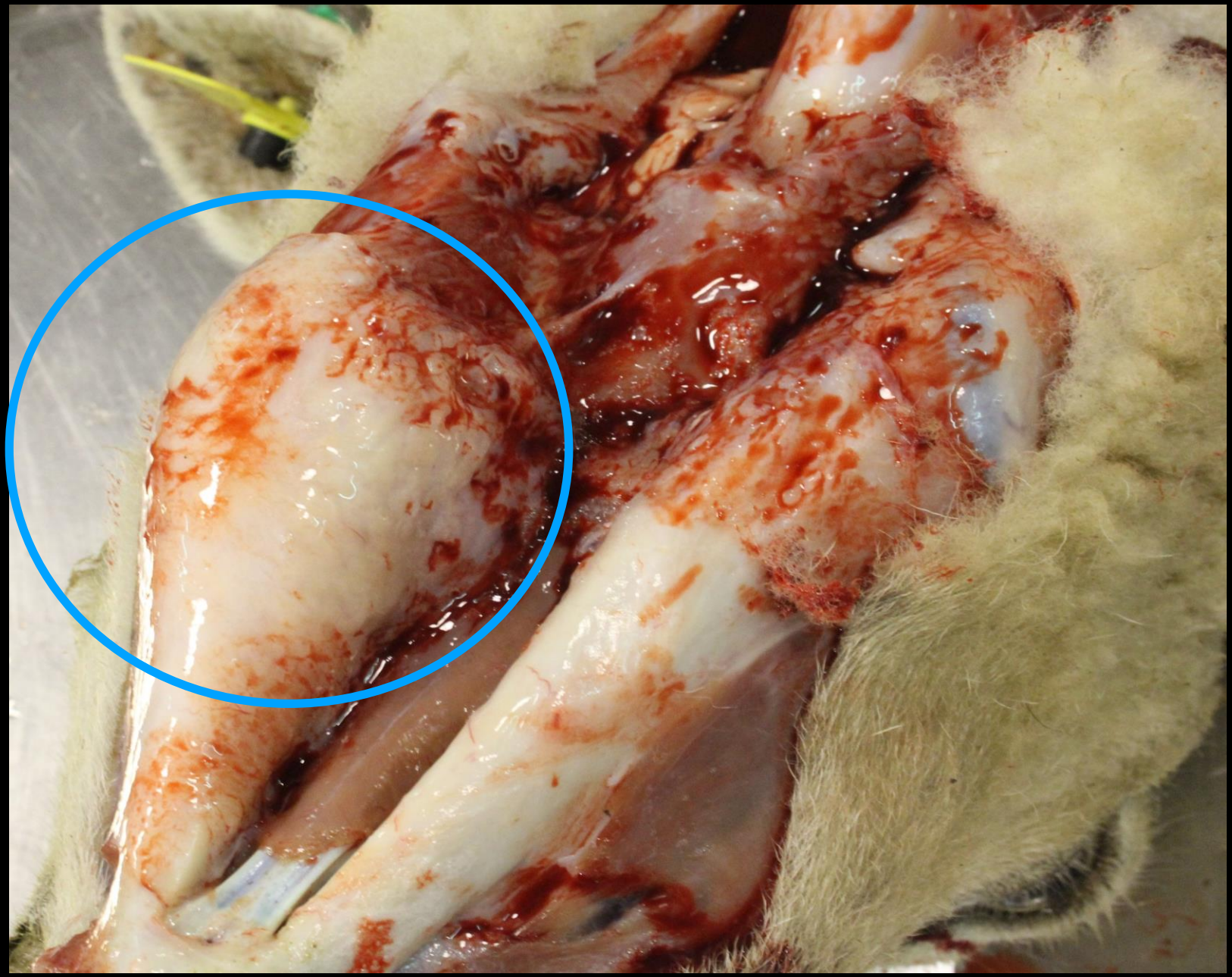
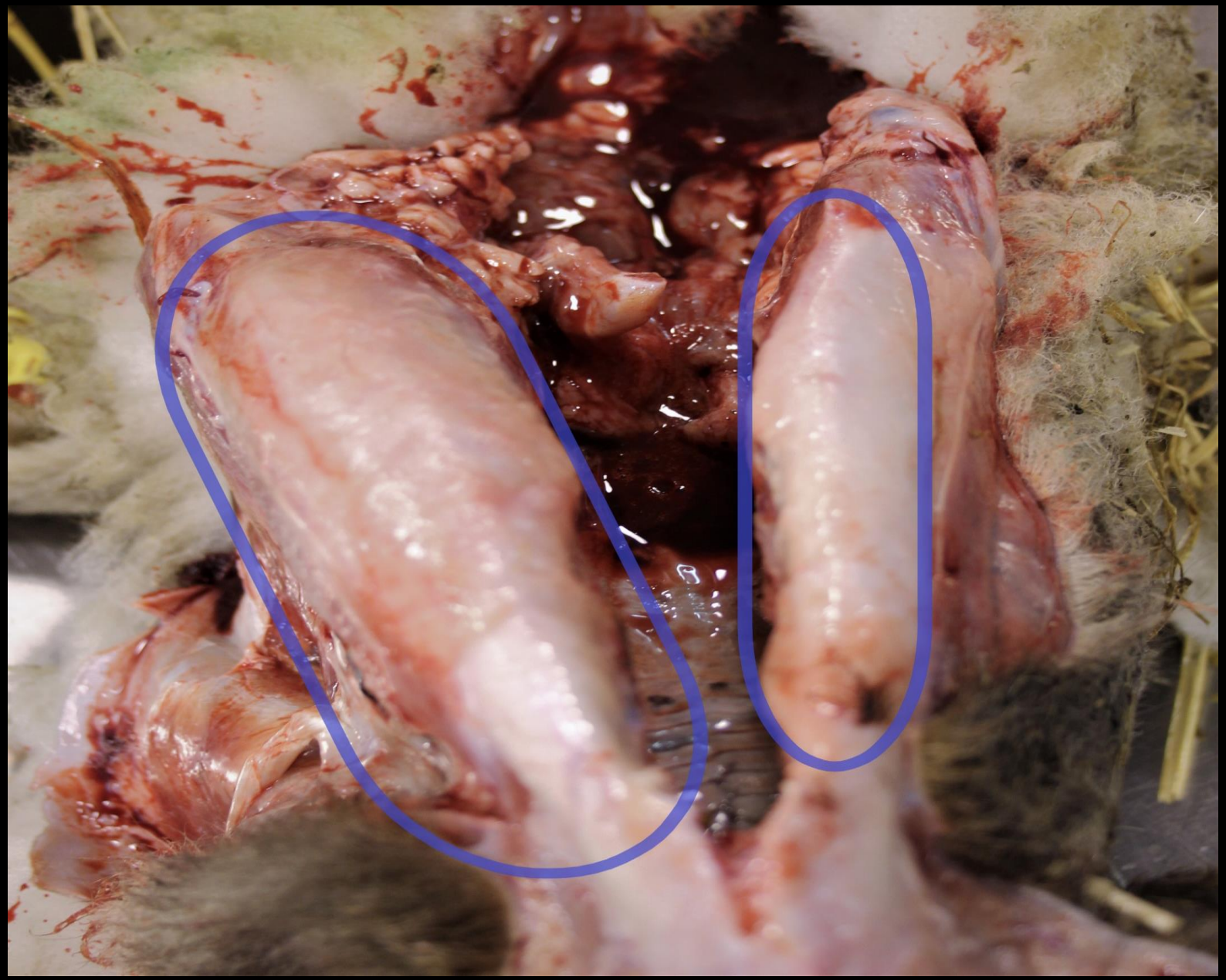
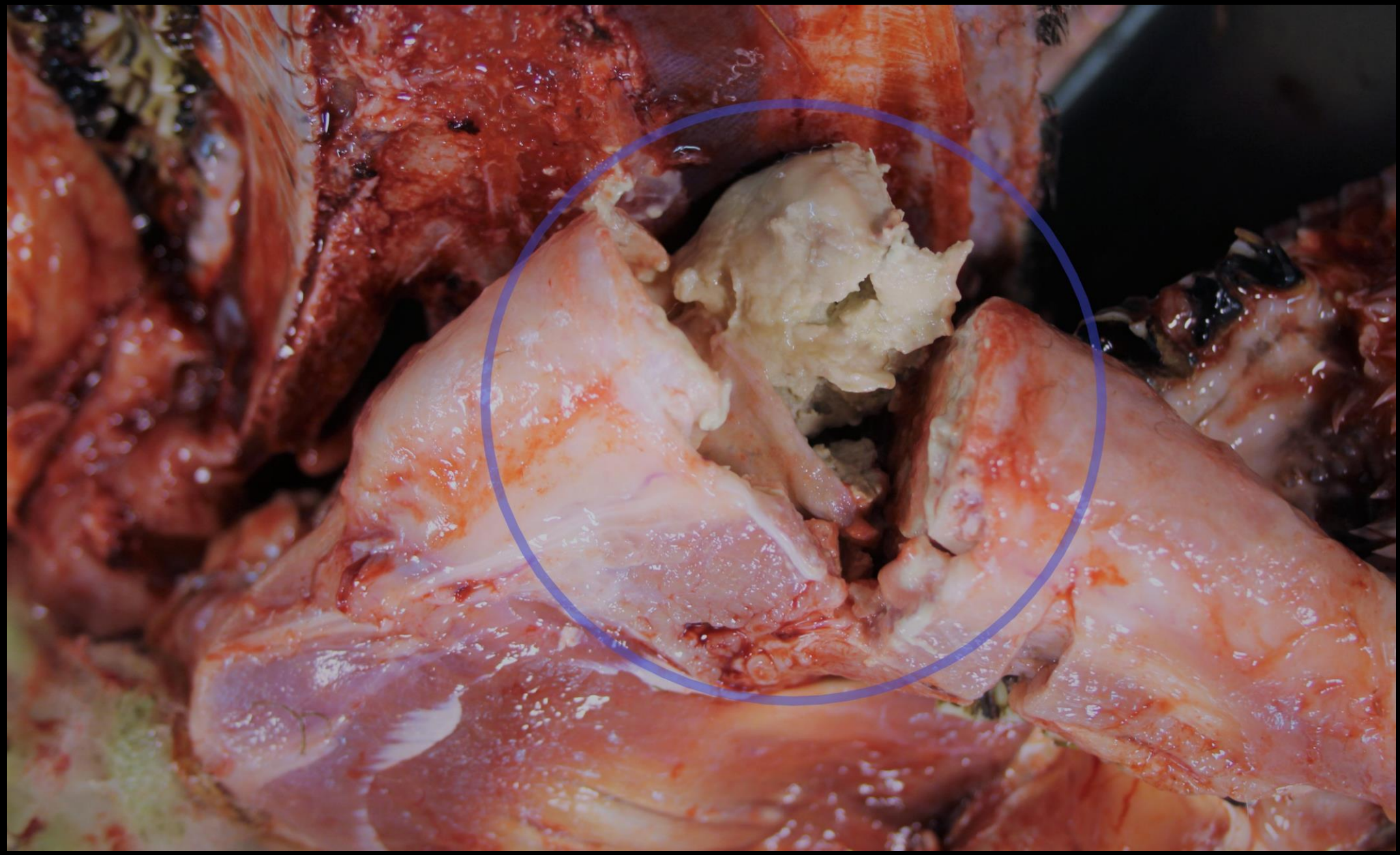
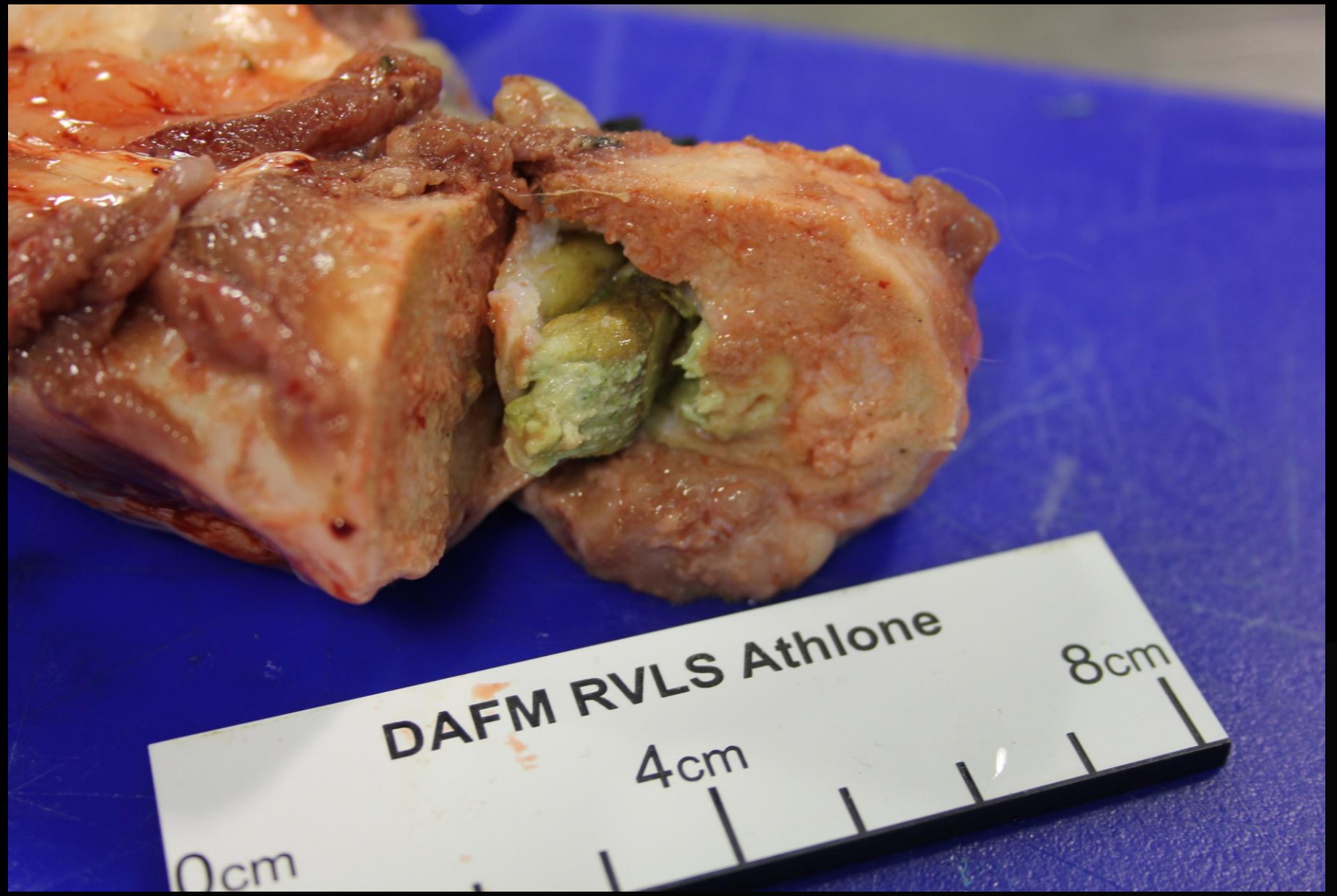
5cm
10cm

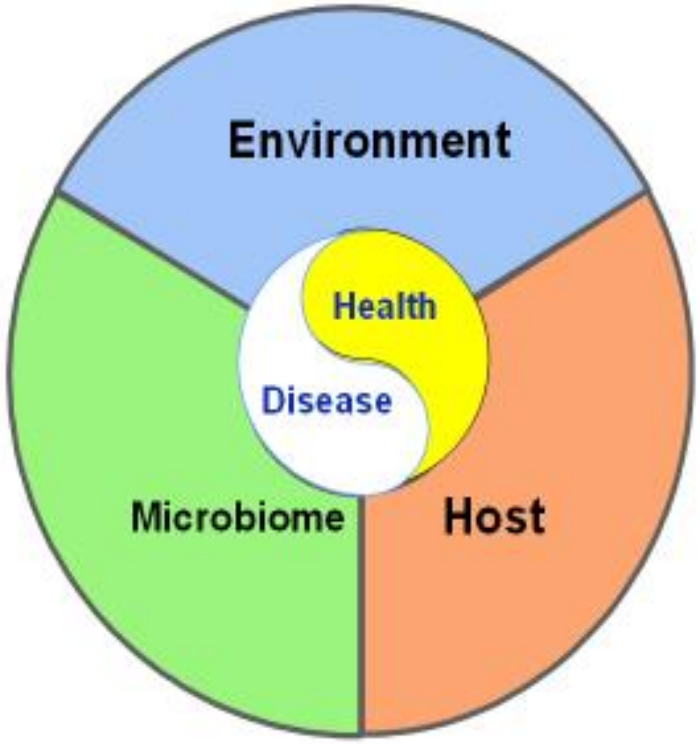


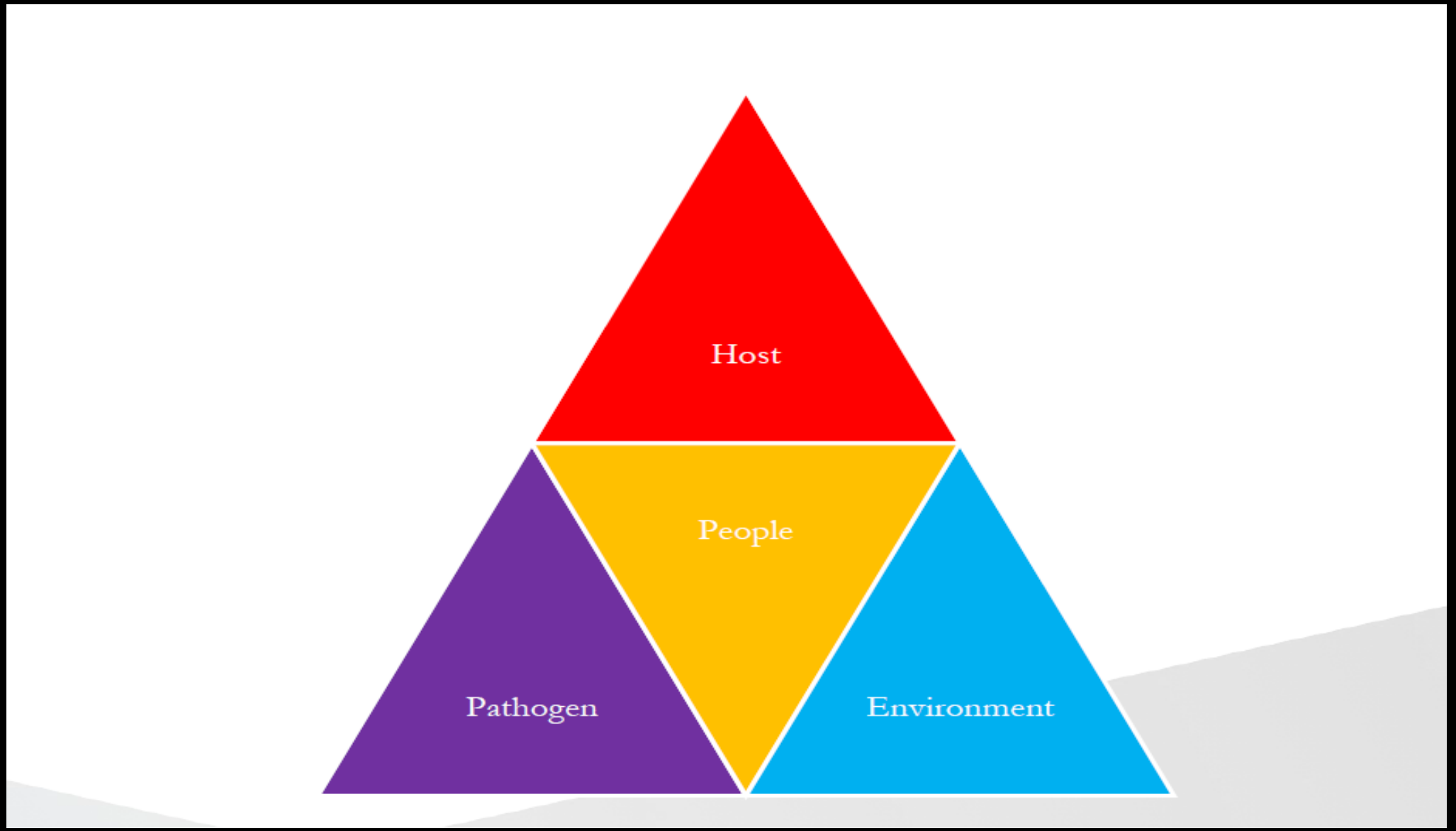





DAFM RVLS Athlone
0cm
4cm
8cm

A Framework




Host
People
Pathogen
Environment

Nematodes – Round Worms

80% of all individual animals on earth

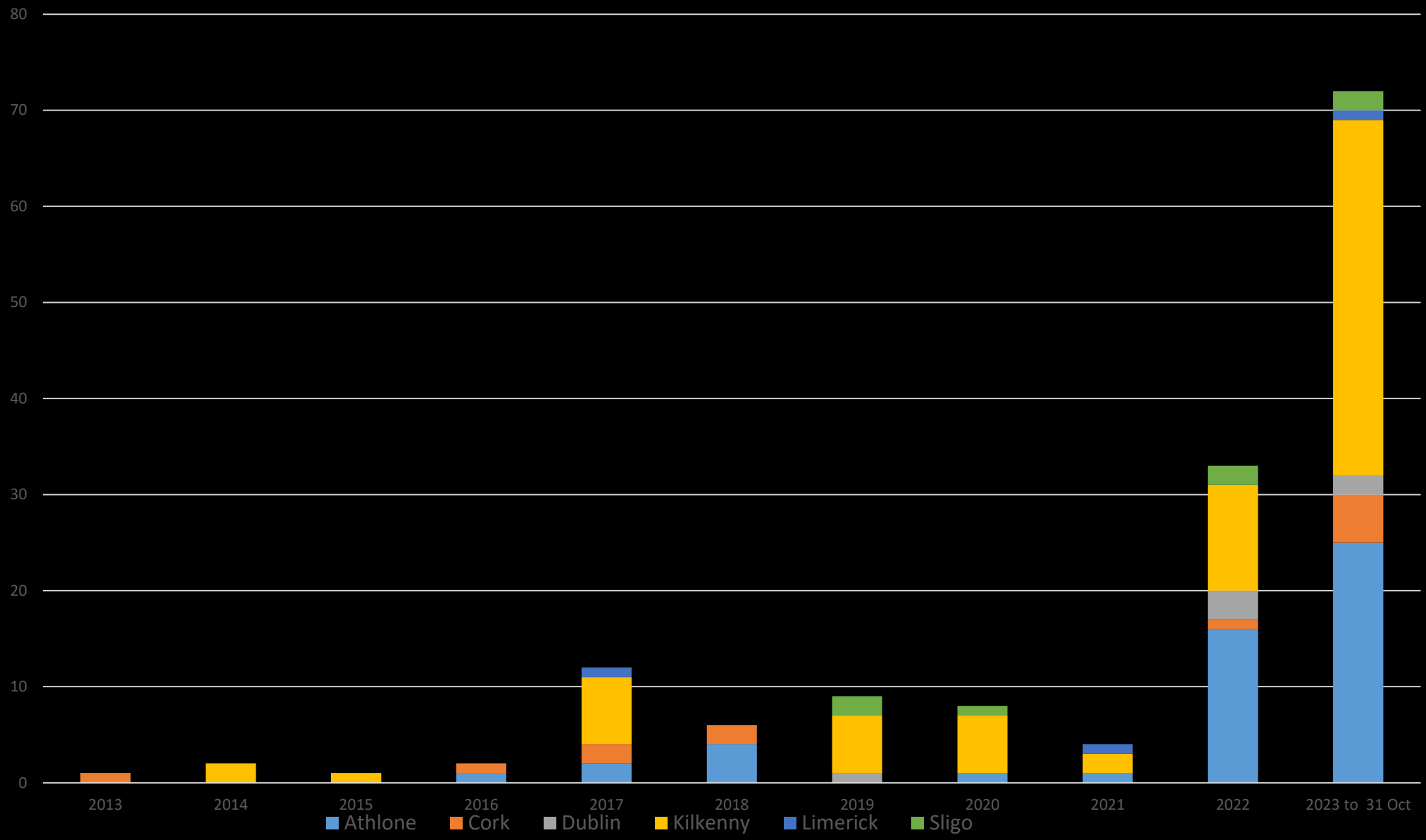
Have successfully adapted to nearly every eco system

Topsoil alone contains approx. 60 Billion nematodes for every human on earth.

A worm that survived 46,000 years in permafrost wows scientists – oldest living creature on earth.
https://www.ucd.ie/research/news/2023/scientistsrevivesoilnematodeafter46000years/body,698115,en.html

Around since the Devonian period approx. 400 million years

Haemonchus post mortem diagnoses per annum (all species)



Haemonchus contortus

Barber pole worm

Very high faecal egg counts – if greater than 5000 consider Haemonchus

Adult can suck 0.5 ml per day of blood

Anthelmintic resistance

Awareness of clinical signs – Liver Fluke?

Border Disease

Caseous Lymphadenitis

Maedi Visna

Ovine Johne’s Disease

Ovine pulmonary adenocarcinoma

Ovine Pulmonary Adenocarcinoma

Jaagsiekte sheep Retrovirus

Contagious neoplastic lung disease – lung cancer caused by a virus

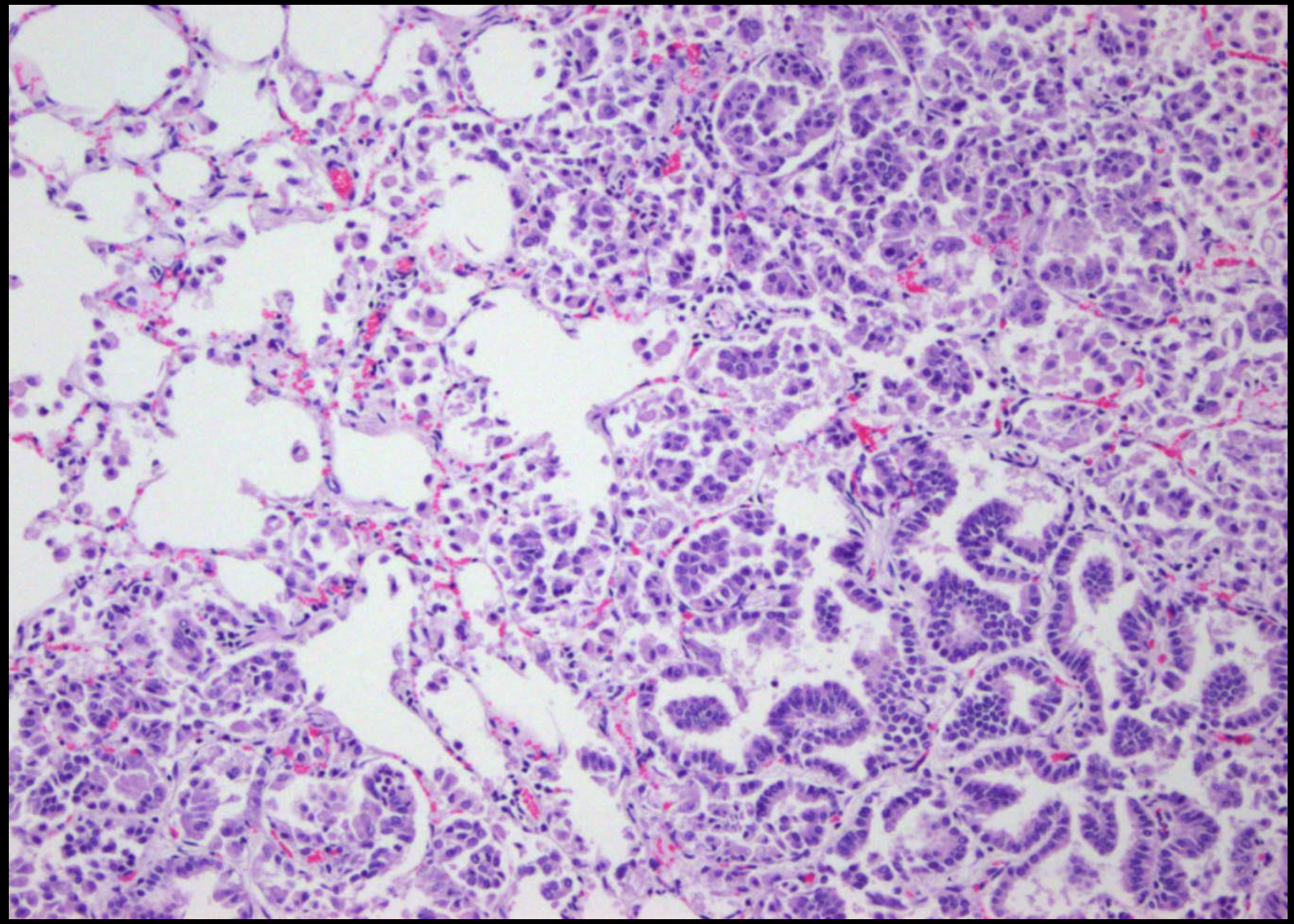
Symptoms; respiratory distress +/- excessive fluid production – Driving sickness

Transmission via respiratory discharges, milk/colostrum

Susceptibility is age-dependent, lambs highly susceptible

Most clinically affected aged 2-4yrs due to long incubation period

Some can remain subclinical



Diagnosis

No Blood test available

Clinical signs – weight loss, lethargy, wheelbarrow test

PCR?

Post mortem – PCR and Histology

Prevention and Control

Biosecurity/Biocontainment – Best way to control it, is not to get it!

Depopulate and restock?

Cull aggressively based on respiratory signs or low BCS

Keep sheep in single age groups

Reduce close contact

Trans-thoracic ultrasound may aid culling decisions

Ovine Johne's Disease/Paratuberculosis

Mycobacterium avium spp. paratuberculosis (C and S strain)

Contagious bacterial disease of the intestine – chronic inflammation, poor nutrient absorption, reduced metabolic efficiency

Progressive weight loss and infertility are main signs

Diarrhoea is not a common feature

Transmission is via faecal-oral route, milk/colostrum or in-utero

Clinical disease seen in >2-3 year olds

Young animals <6 months are most susceptible to infection

Diagnosis

- Test sensitivity and specificity considerations
- ELISA antibody on blood – screening
- PCR antigen faeces
- Faecal culture
- Gross pathology and histopathology

Control

- Test and Cull
- Segregate high risk ewes away from younger breeding ewes
- Snatch lambs, artificial rearing

Caseous Lymphadenitis (CLA)

Corynebacterium pseudotuberculosis

Chronic, contagious suppurative necrotizing inflammation of superficial lymph nodes – sheep, goats, cattle

Usually Lymph nodes around the head affected

Approximately 25% develop internal lesions

Typical entry into flock via infected carrier animal

Shearing cuts main portal of entry, ingestion, inhalation

Diagnosis: culture from discharging lymph nodes, Blood test - ELISA

Treatment with antibiotics unsuccessful – typically get reoccurrence

Control Options

Eradication – depopulate and restock

Screening – blood sample all breeding stock, cull positives

Segregation into clean/dirty flocks

Border Disease

Pestivirus, similar to BVD virus

Timing of infection is important

Maternal infection is generally mild
Clinical signs seen after infection of naive pregnant ewes
Severe consequences for the foetus before day 85 of gestation
Abortion/stillbirth, early neonatal death or PI(persistently infected)

Surviving lambs are weak, fail to thrive, hairy shaker disease

Virus introduced by PI sheep or pregnant ewe carrying an infected foetus

Persistently infected are the primary virus reservoir

Clinical Findings

LAMBS
- Low birth weight
- Hairy coat
- Tremor
- Poor conformation

EWES
- Barren
- Abortions

Diagnosis

ELISAs to detect Antibodies in serum – maternal abs < 2mths

PCRs to detect virus in tissue or blood

Control

Test and cull PI animals

Maedi Visna (MVV, SRLV)

MVV – Small ruminant lentivirus

First detected in Ireland in 2020 in Kilkenny RVL

Incubation period is protracted, clinical disease most common in 4-5 yr olds

Incurable and slowly progressive

Maedi form: chronic progressive pneumonia +/- mastitis in older sheep >3yrs

Visna form: Neurological signs with weight loss, unilateral conscious proprioceptive deficit in one Hind leg to toe dragging and Hind leg paralysis

Transmission

- Pulmonary secretions and milk – primary route
- Semen, saliva, urine – minor route
- Postnatal maternal transmission is important

Diagnosis

- ELISA ab test on blood/milk (time from infection to seroconversion can vary)
- Post-mortem/histopathology
- PCR on tissue

Control options

Depopulation/repopulation

Selective culling of infected animals +/- progeny
Separation of flock – young/old

Young flock, early culling

Artificial rearing of lambs

Reduce close contact

Conclusions

Worms and Teeth biggest culprits from study findings

Enough of Johnes, Ovine Pulmonary Adenomatosis (Jaagsiekte) and CLA around to cause problems

Excellent flock health requires attention to detail at an individual animal level

Body condition scoring is an essential flock management tool for ewes.

Acknowledgements

Farmers who submitted sheep for post mortem

Teagasc advisors

DAFM Laboratory staff