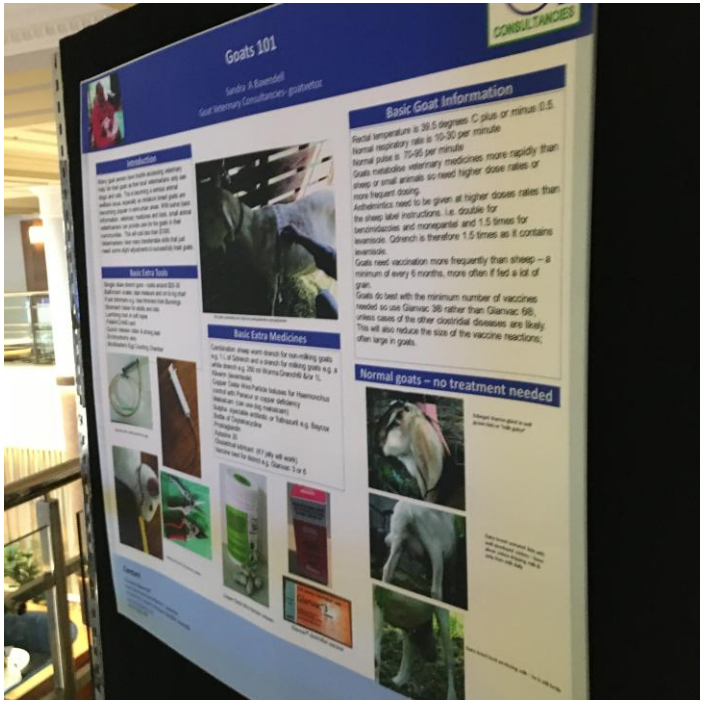
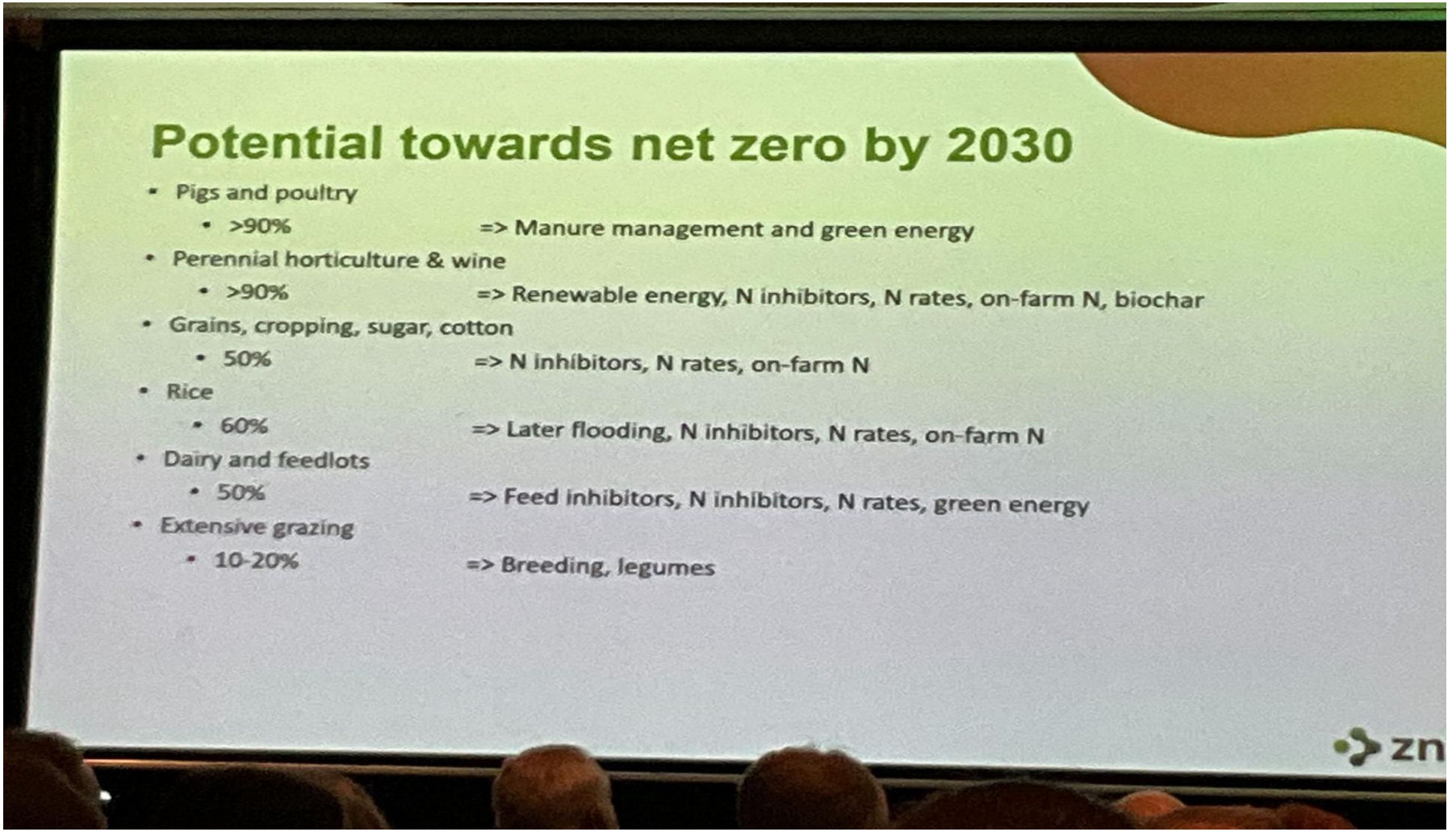
International Sheep Vet Conference (also covered goats)

Sandra's key take-aways

- Key points from goat poster presentations & lectures
- Worm control
- What is in the pipeline that will help goat owners



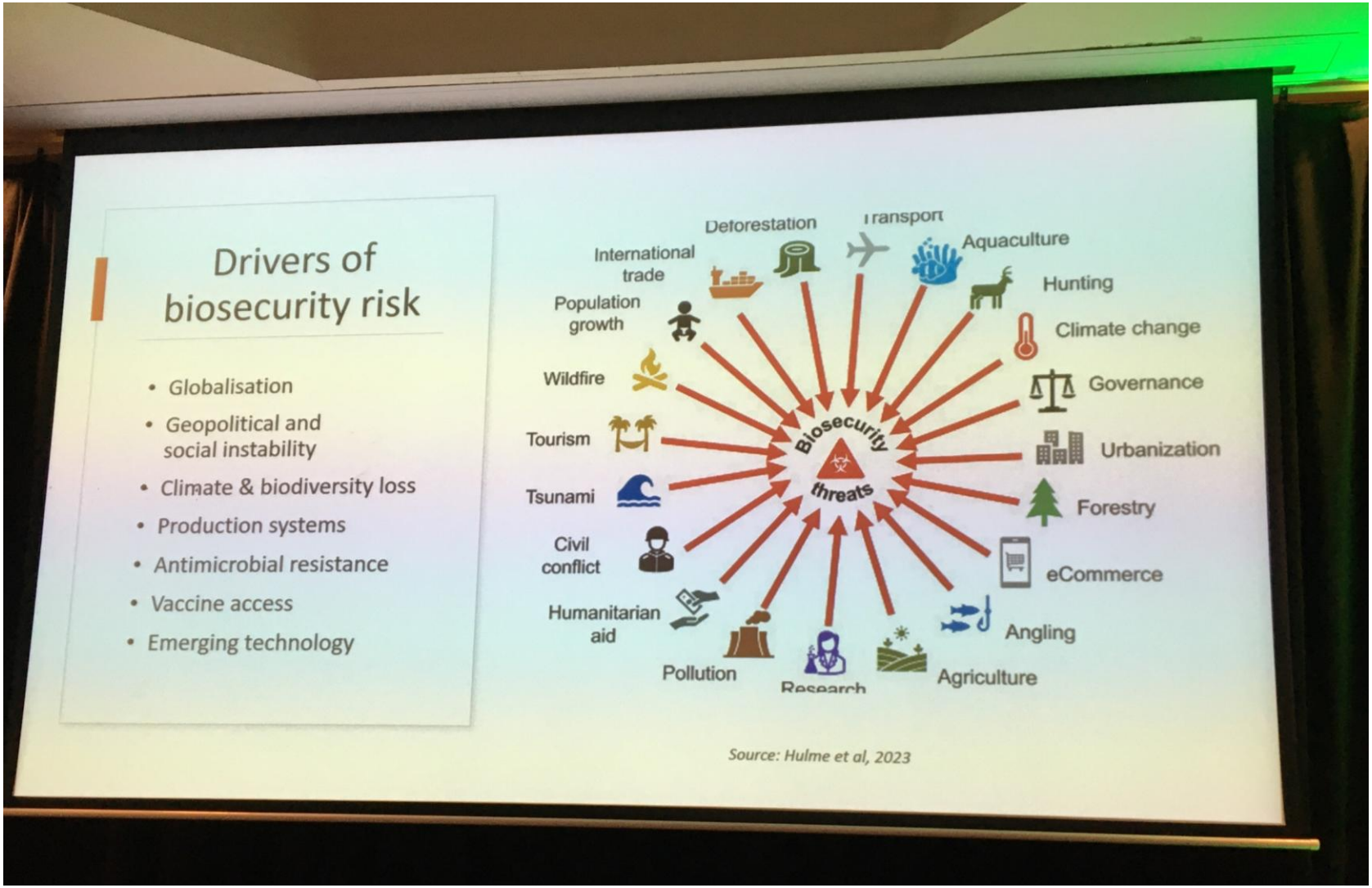
Keynote Speaker's Net Zero Push Advice



Buyers of goat products will buy if reduced greenhouse gas (GHG)

- Major companies/lenders want to become net zero so will look at their supply chain & will buy from/lend to farms with less GHG
- If your goat meat is from kids raised more quickly to slaughter weight, then they have less GHG produced
- If your farm buys less Nitrogen fertilizer from overseas, then your goat product has less GHG

Biosecurity risks are increasing

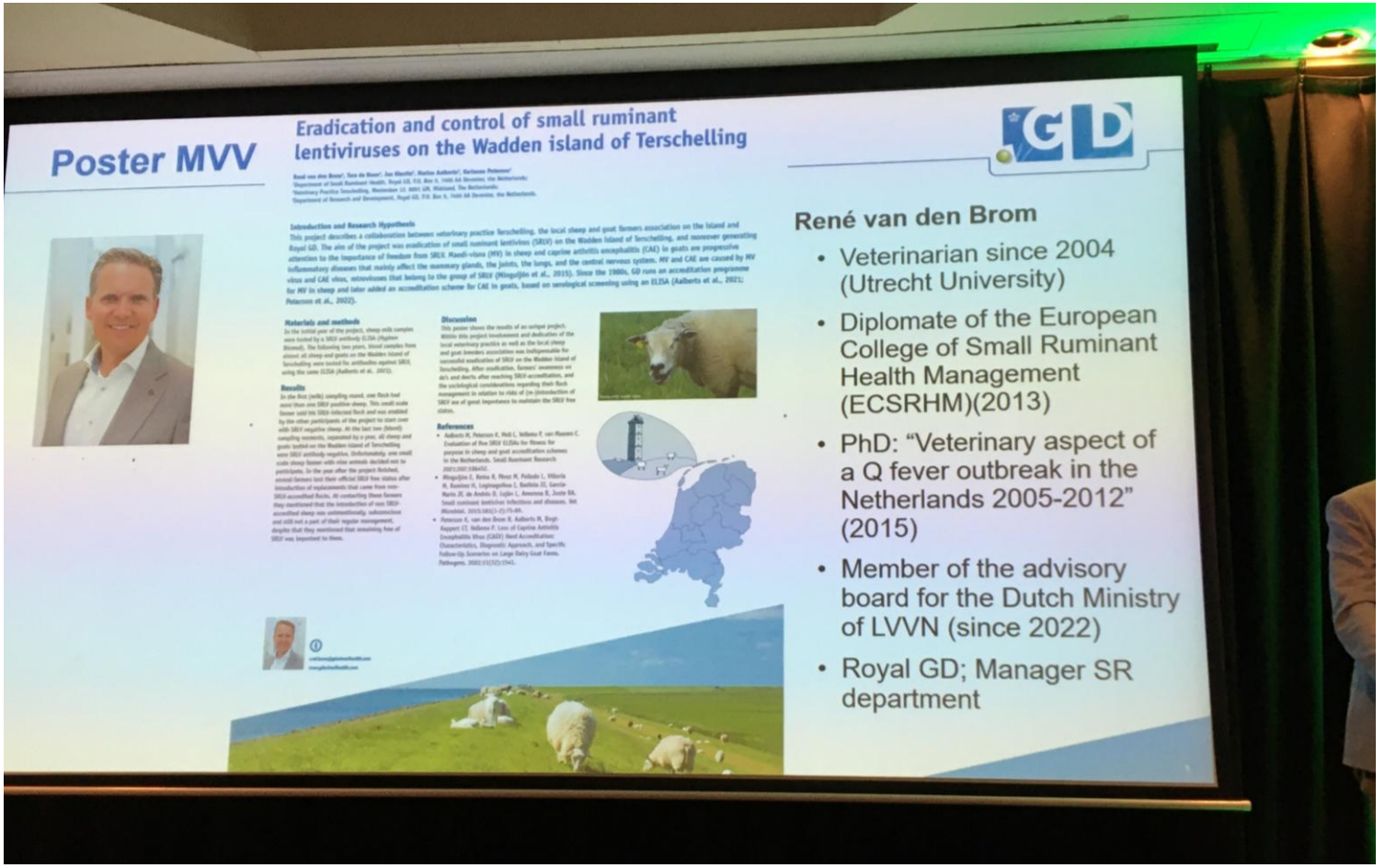


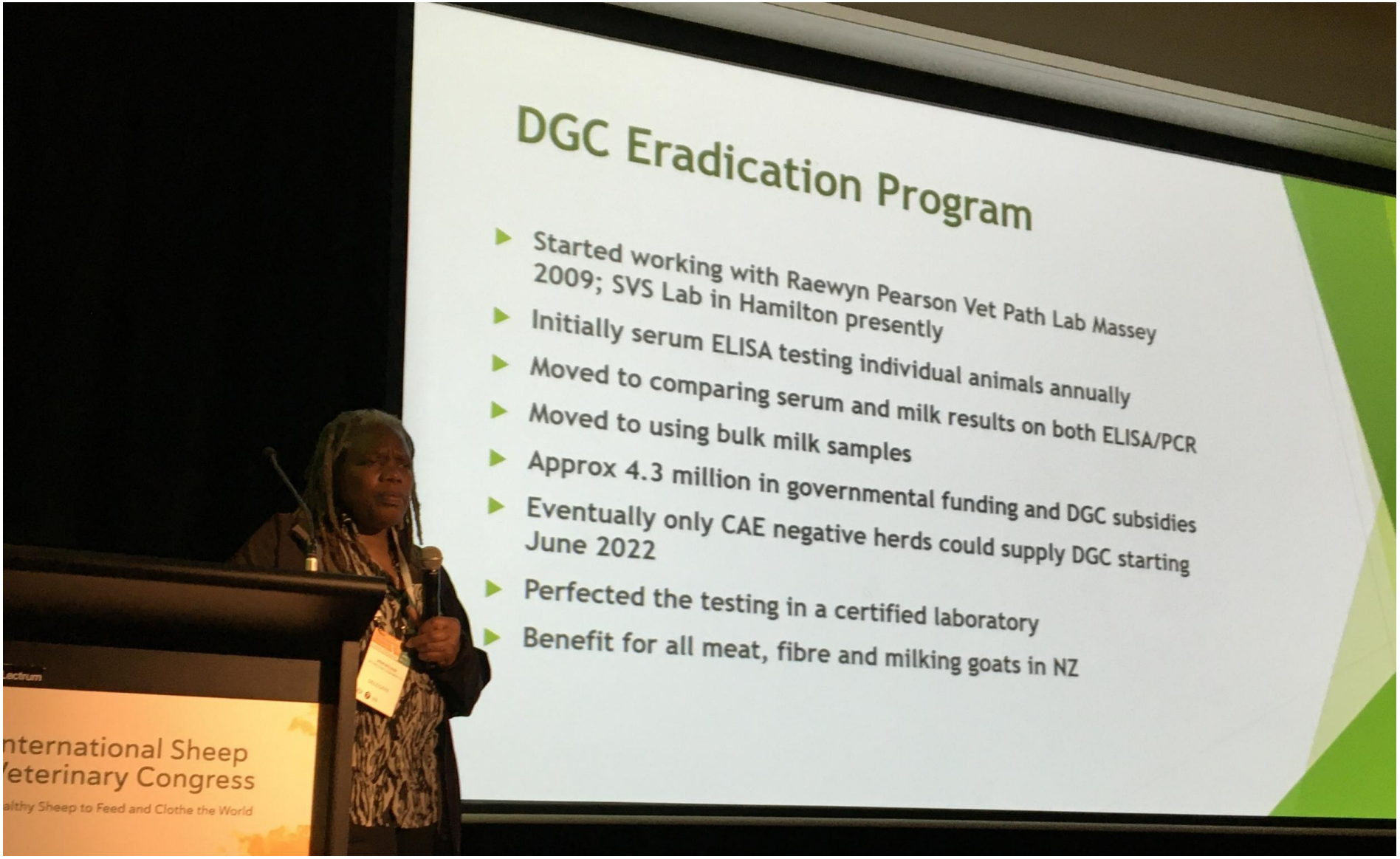
Exotic goat disease are spreading & getting closer to Australia

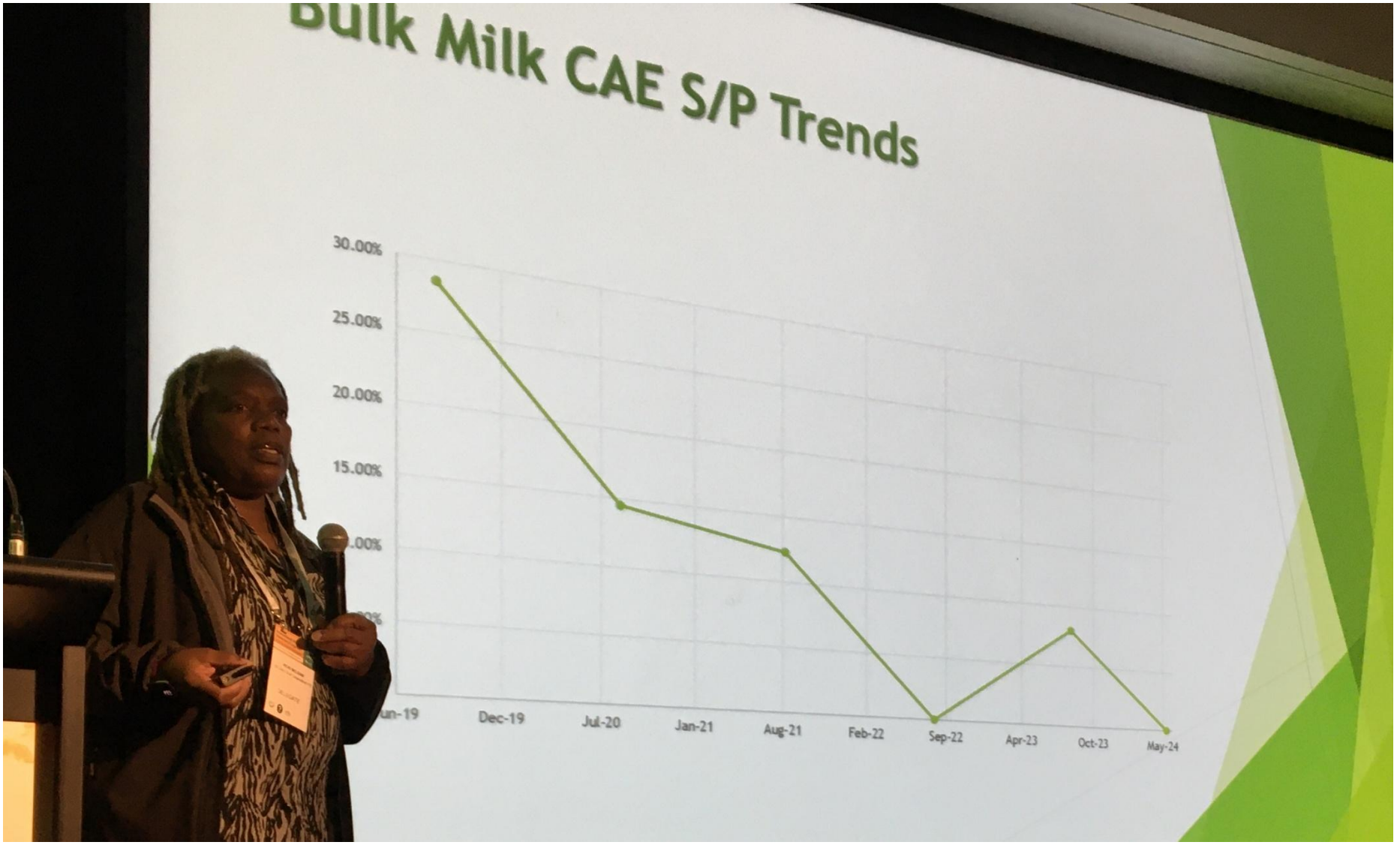
Keynote from CVO – fake info spreads rapidly

Everyone needs to take action

CAE & SRLV eradicated on a Dutch Island but 3 years later was re-introduced with purchased animals




DGC Eradication Program
Started working with Raewyn Pearson Vet Path Lab Massey 2009; SVS Lab in Hamilton presently
Initially serum ELISA testing individual animals annually
Moved to comparing serum and milk results on both ELISA/PCR
Moved to using bulk milk samples
Approx 4.3 million in governmental funding and DGC subsidies
Eventually only CAE negative herds could supply DGC starting June 2022
Perfected the testing in a certified laboratory
Benefit for all meat, fibre and milking goats in NZ
nternational Sheep
/eterinary Congress
althy Sheep to Feed and Clothe the World


Bulk Milk CAE S/P Trends
30.00%
25.00%
20.00%
15.00%
Dec-19
Jul-20
Jan-21
Aug-21
Feb-22
Sep-22
Apr-23
Oct-23
May-24

CAE in New Zealand

Caprine Arthritis Encephalitis (CAE) is a debilitating viral disease affecting dairy goats globally. Individual testing to eradicate the virus from a herd is costly when used as a surveillance program. Bulk tank milk (BTM) ELISA testing for CAE has proven to be a cost-effective method to monitor the prevalence of CAE in a population of 60,000 goats supplying a New Zealand Dairy Goat Company. Over the past six seasons, monthly BTM monitoring has been employed to detect positive herds. Subsequent group and/or individual ELISA milk testing were conducted on herds that tested positive on BTM to identify and cull positive individuals. Large herds (700+) with less than 0.4% positive animals have been detected using the CAE BTM ELISA screening. This method is an economically efficient and effective means to monitor CAE prevalence in large commercial dairy goat herds.

Nutritional stress causes an abortion storm 1

Case report: Abortion and dystocia storm following shearing of Angora goats

Susan Robertson, Allan Gunn and Bruce Allworth

Charles Sturt University

Gulbali Institute

Agriculture

The Issue

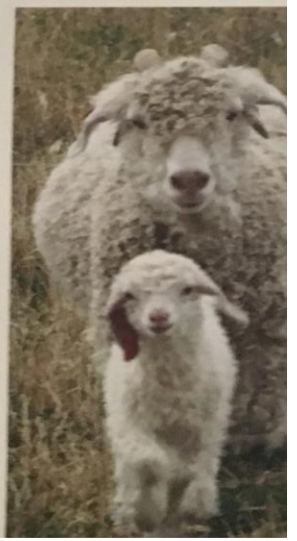
Goats are prone to abortion after exposure to stressors, particularly feed restriction, as w
from infectious causes

Case history

- Mixed age Angora does were shedded overnight on days 140 and 144 after buck introd
and shorn on day 145 in 2024
- Does in good condition grazing abundant pasture
- Kidding records available for 3 years

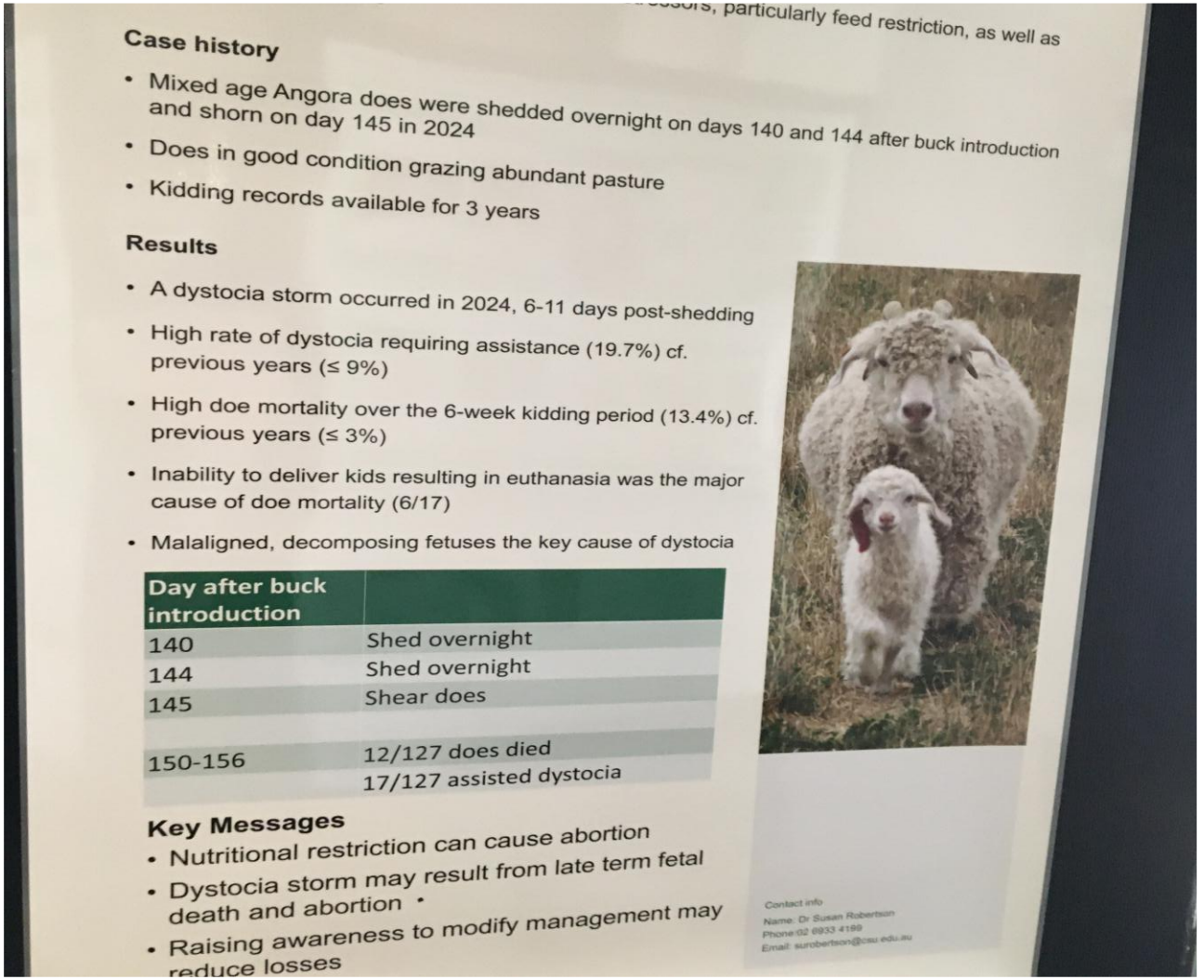
Results

- A dystocia storm occurred in 2024, 6-11 days post-shedding
- High rate of dystocia requiring assistance (19.7%) cf. previous years (≤ 9%)
- High doe mortality over the 6-week kidding period (13.4%) cf. previous years (≤ 3%)
- Inability to deliver kids resulting in euthanasia was the major cause of doe mortality (6/17)
- Malaligned, decomposing fetuses the key cause of dystocia



Day after buck introduction	
140	Shed overnight
	Shed overnight

Nutritional stress causes an abortion storm - 2



…particularly feed restriction, as well as

Case history

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- Malaligned, decomposing fetuses the key cause of dystocia

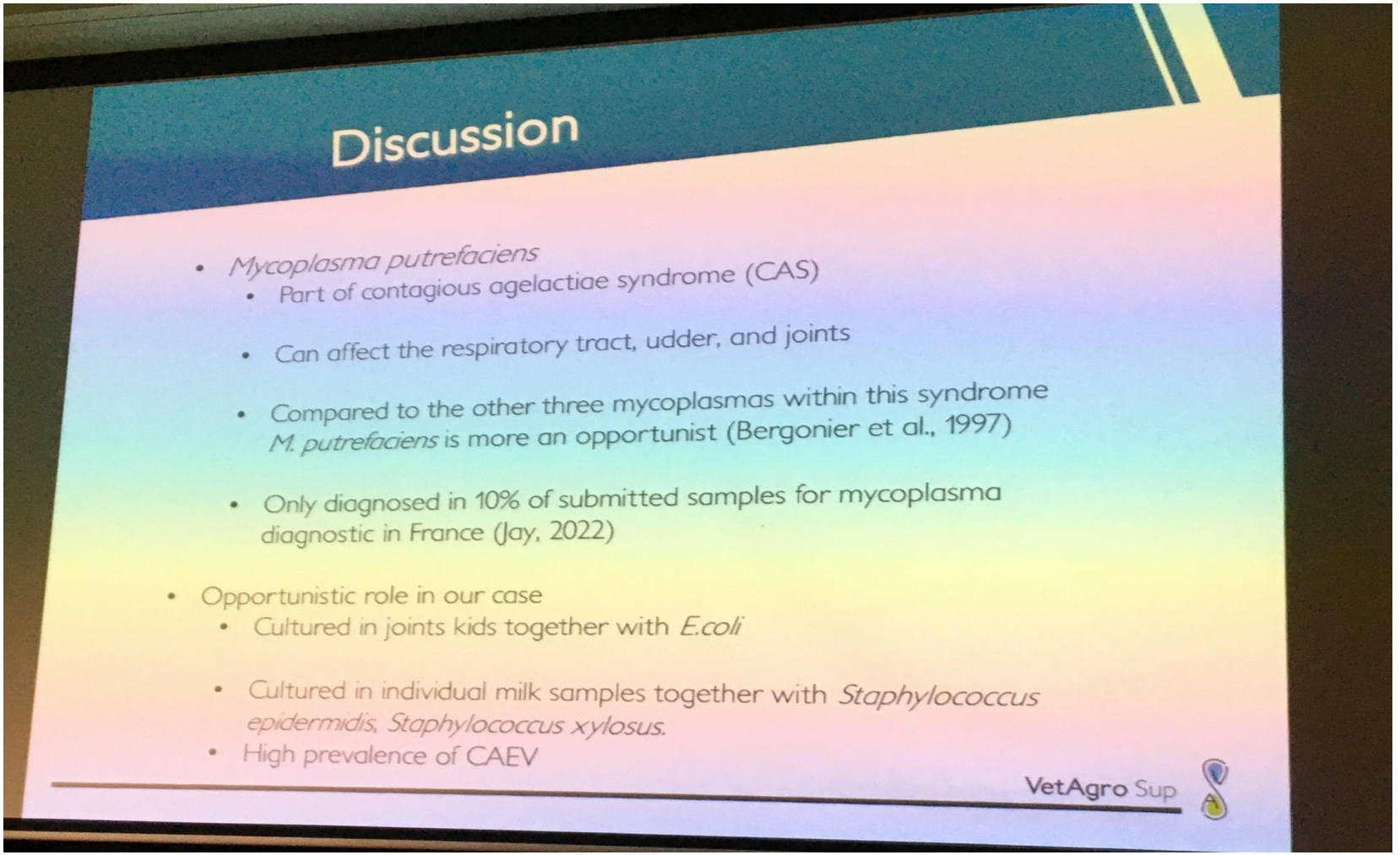
Day after buck introduction	
140	Shed overnight
144	Shed overnight
145	Shear does
150-156	12/127 does died
	17/127 assisted dystocia

Key Messages

- Nutritional restriction can cause abortion
- Dystocia storm may result from late term fetal death and abortion
- Raising awareness to modify management may reduce losses

Contact info
Name: Dr Susan Robertson
Phone:02 6933 4199
Email: surobertson@csu.edu.au

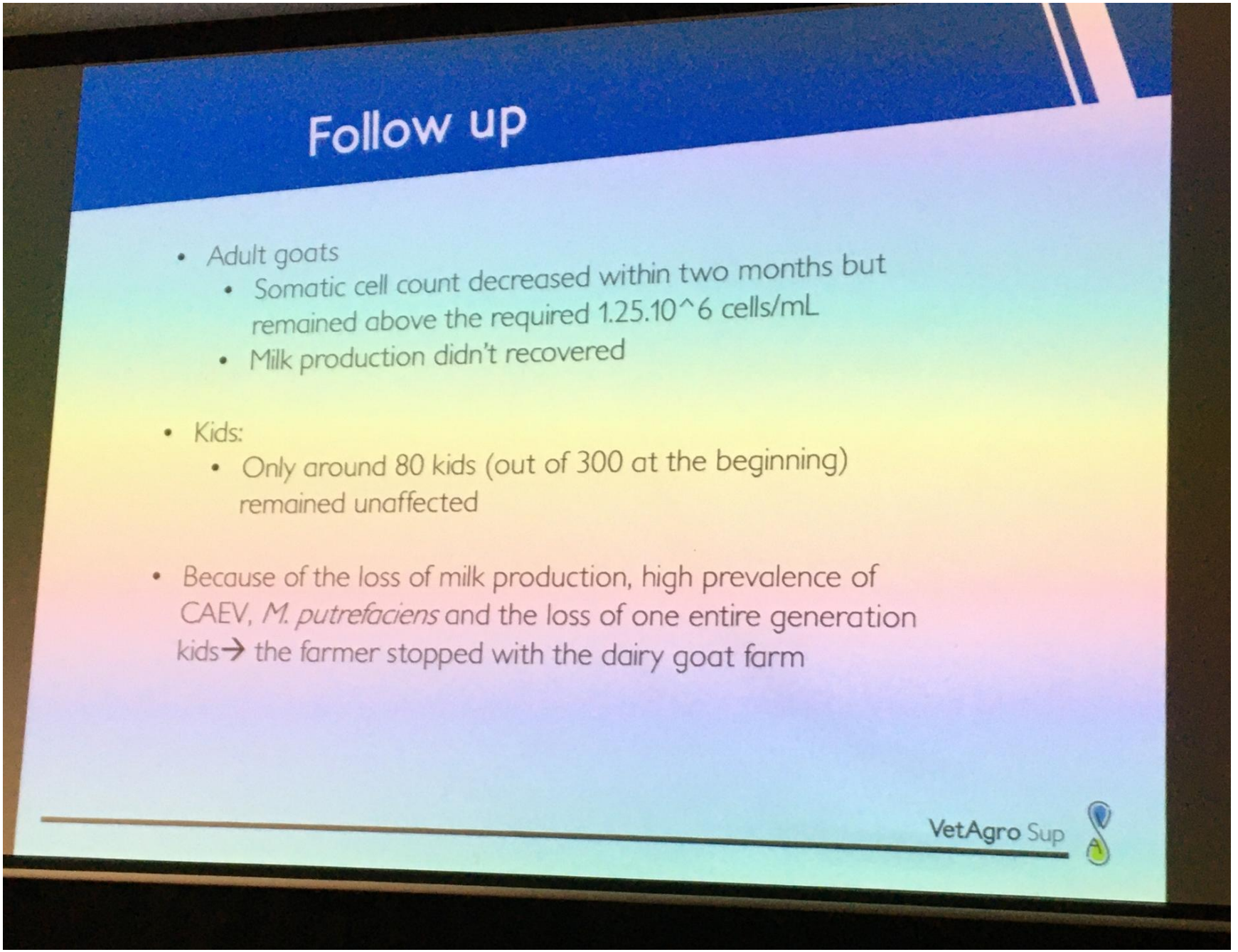
Presence of *Mycoplasma putrefaciens* in a severe outbreak of polyarthritis and increased somatic cell count in a dairy goat herd



Case description A **severe outbreak of polyarthritis in goat kids (107/300 kids) and primiparous goats (55/61 goats), together with an elevated somatic cell count (SCC**; > 6.0 × 10^6 cells/mL; ref.: < 1.0 × 10^6 cells/mL) in the multiparous goats was observed in a herd of 180 dairy goats, in October 2024. Bacterial cultures were taken from the affected joints of three kids at post-mortem, and from one clinical mastitis case. During a farm visit, potential risk factors were identified, and blood samples were taken from ten goats for CAEV and BTV serology.

Findings: Bacterial cultures of joint fluid were positive for *Escherichia coli* and *Mycoplasma* spp. Bacterial culture of the milk sample was positive for coagulase-negative *Staphylococci* and *Mycoplasma* spp. A *Mycoplasma putrefaciens* specific PCR was positive for both the bacterial cultures from the joint and the milk. Ten and two out of the ten blood samples for serology were positive for CAEV and BTV, respectively. **Risk factors identified included: high stocking density, poor bedding hygiene, pooling of colostrum and the presence of CAE**.

Conclusions: The role of *M. putrefaciens* in this case seems to be opportunistic, and secondary to concurrent diseases and management shortcomings. The multi-morbidities on this farm required intense veterinary-farmer collaboration towards an acceptable outcome for the farmer.


Follow up
Adult goats
Somatic cell count decreased within two months but remained above the required 1.25.10^6 cells/mL
Milk production didn't recovered
Kids:
Only around 80 kids (out of 300 at the beginning) remained unaffected
Because of the loss of milk production, high prevalence of CAEV, M. putrefaciens and the loss of one entire generation kids→ the farmer stopped with the dairy goat farm
VetAgro Sup

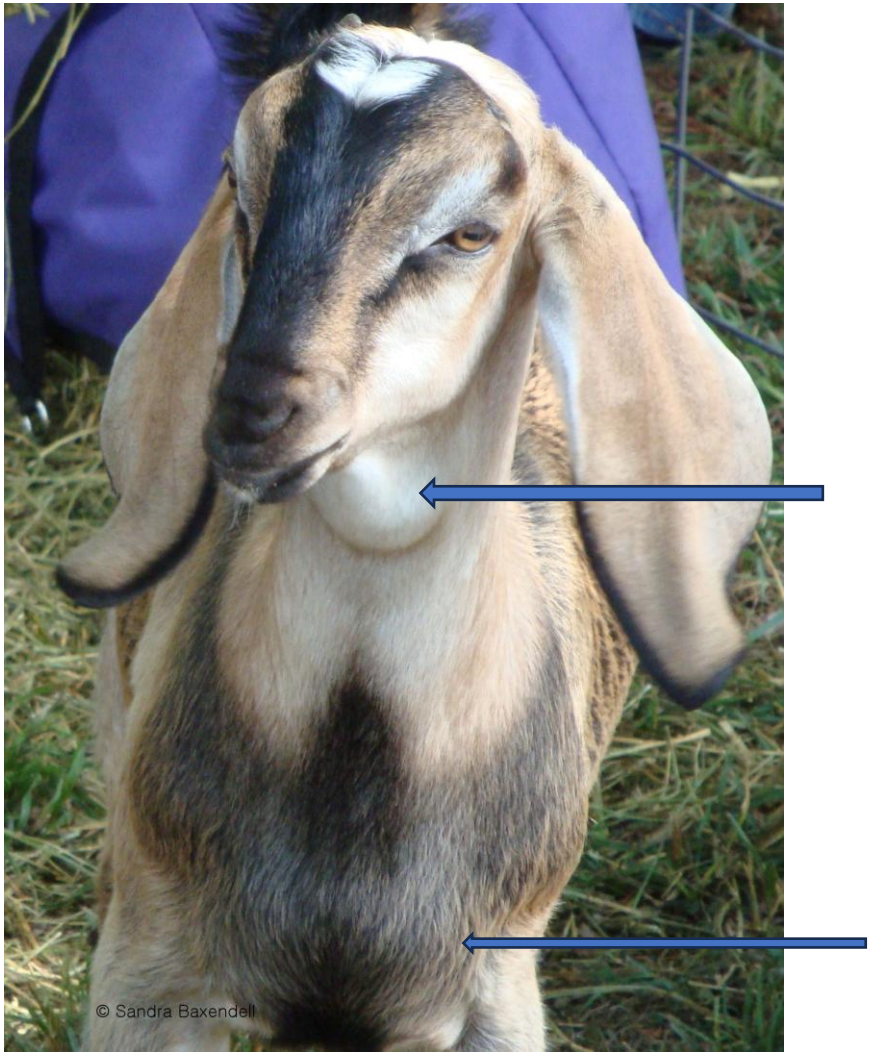
Clinical presentations of thymic neoplasia in goats Mary C. Smith

Findings: Cases seen by the author were **mostly 10 years or older,** pets or sanctuary animals, and exhibited **weight loss, bloat, dyspnea or muffled heart sounds**. Thymic neoplasia was diagnosed at necropsy in 11 goats (out of 719) during the 17-year period, with a prevalence of approximately 1.5%. …Ages ranged from 7 to 16 years. The tumour was judged to be incidental in five cases and contributing to clinical signs such as respiratory distress as a space-occupying mass in the thorax of five goats. One upper cervical mass was implicated in dysphagia.

Thymic tumours were diagnosed from biopsies or farm necropsies from 17 goats, often without clinical history. These included nine cervical masses, two thoracic tumours mistaken by the submitter for lung, and six other thoracic masses. .....

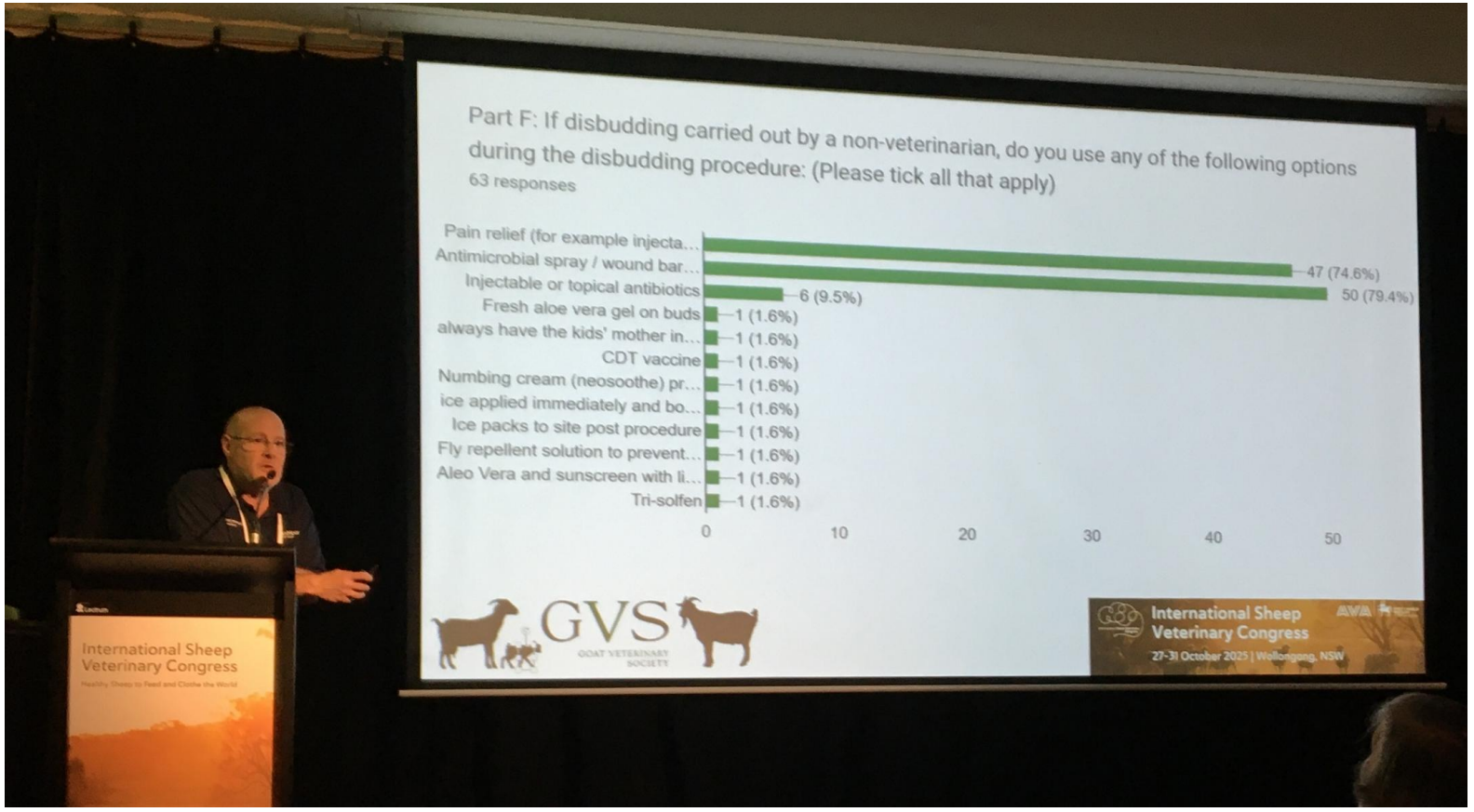
Key Points about Thymic tumours

- If in the neck – monitor or surgically remove
- If in the chest – euthanize

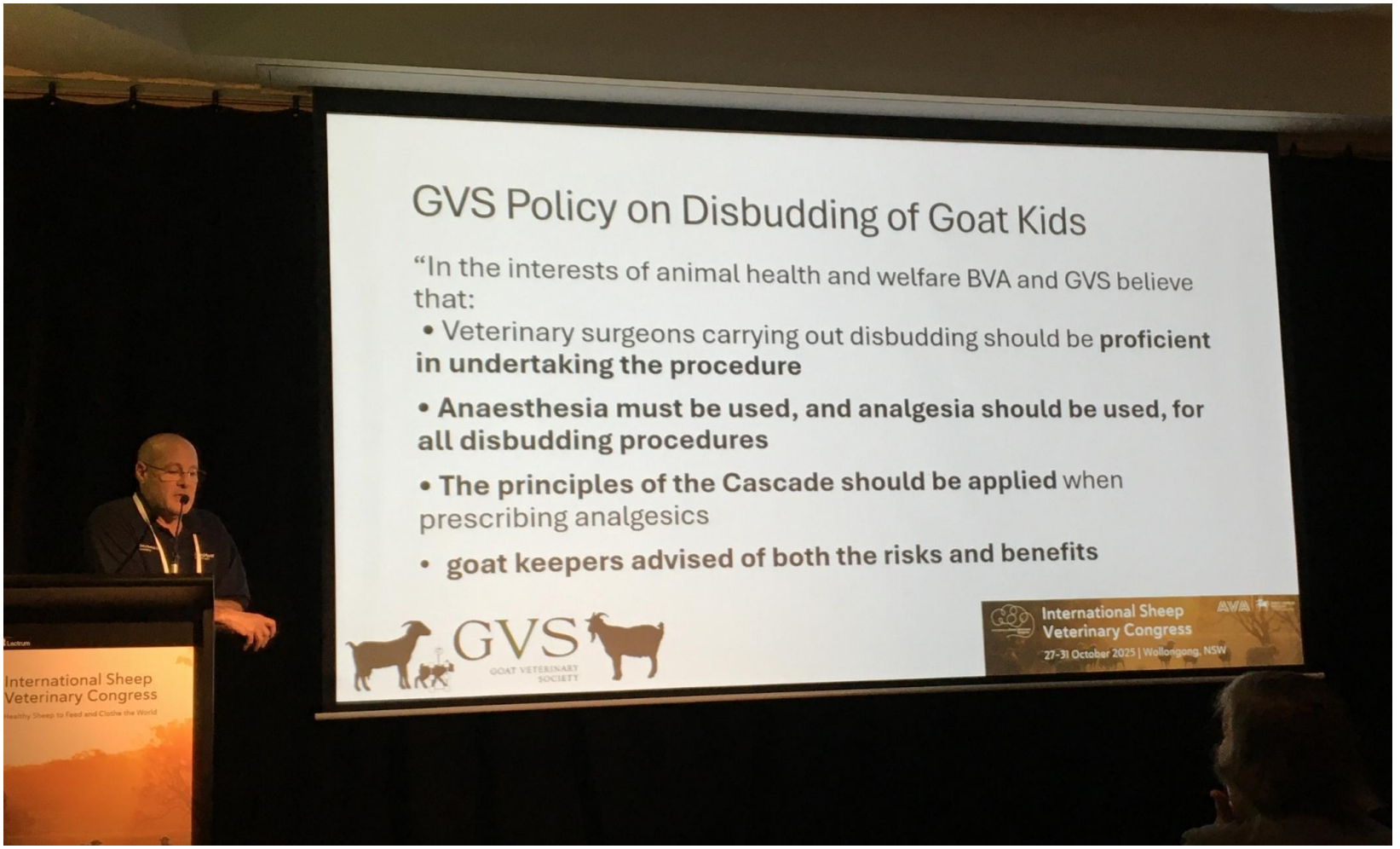


British Goat Vet Society Disbudding survey

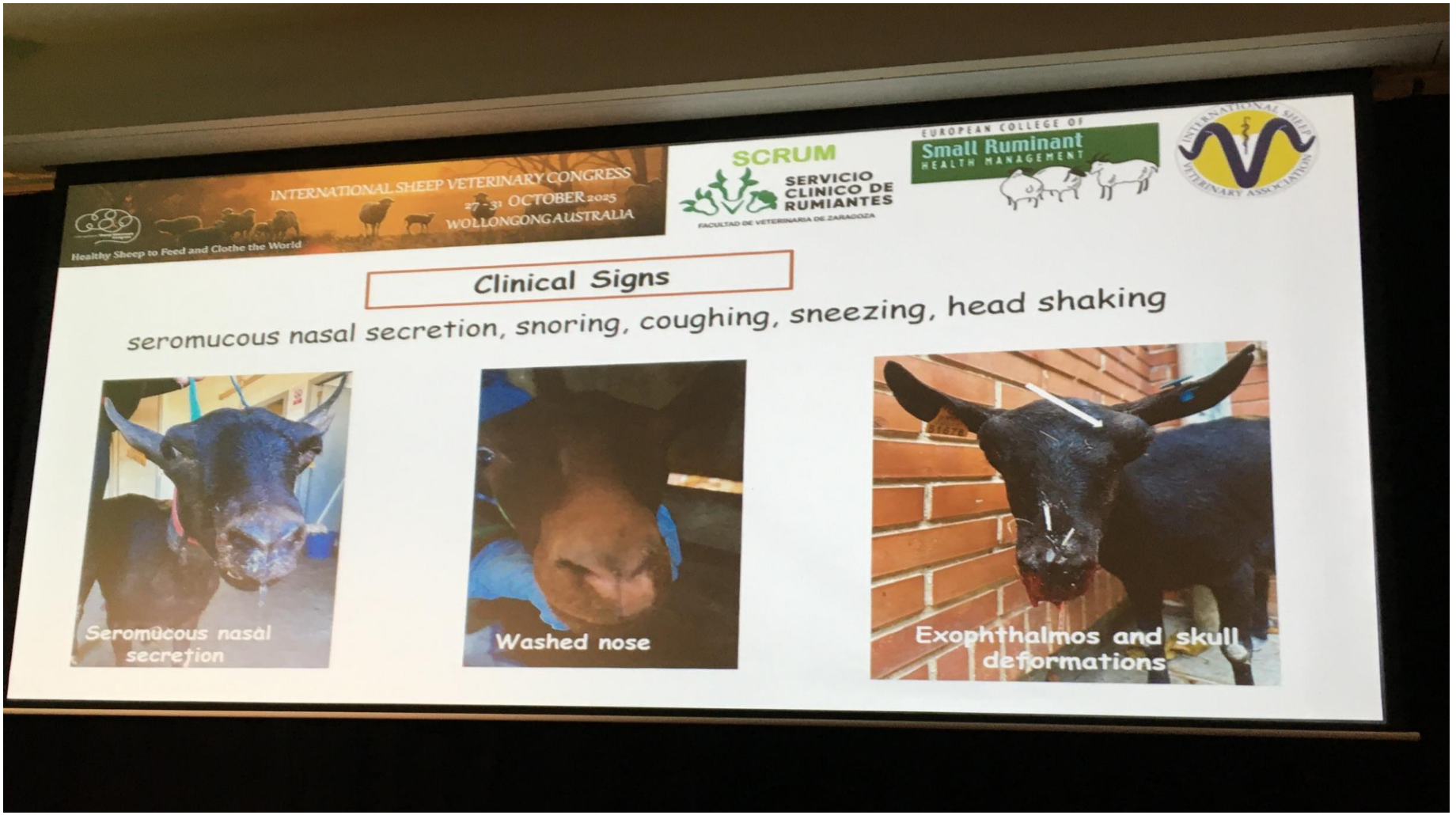
UK vets use anaesthesia Plus pain relief (meloxicam) & spray



British Goat Vet Soc policy

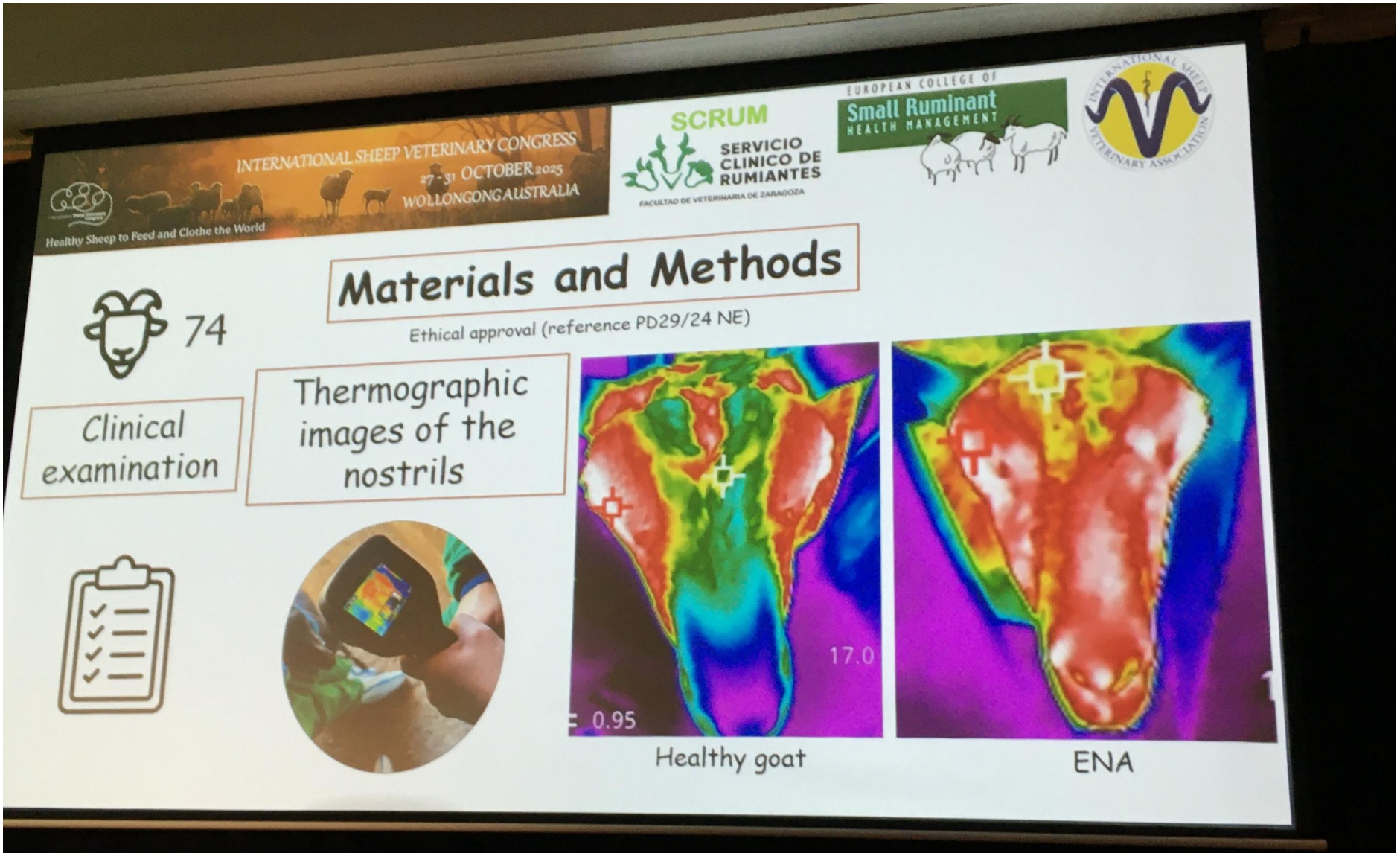


Early diagnosis of enzootic nasal adenocarcinoma (ENA) in goats: A preliminary study

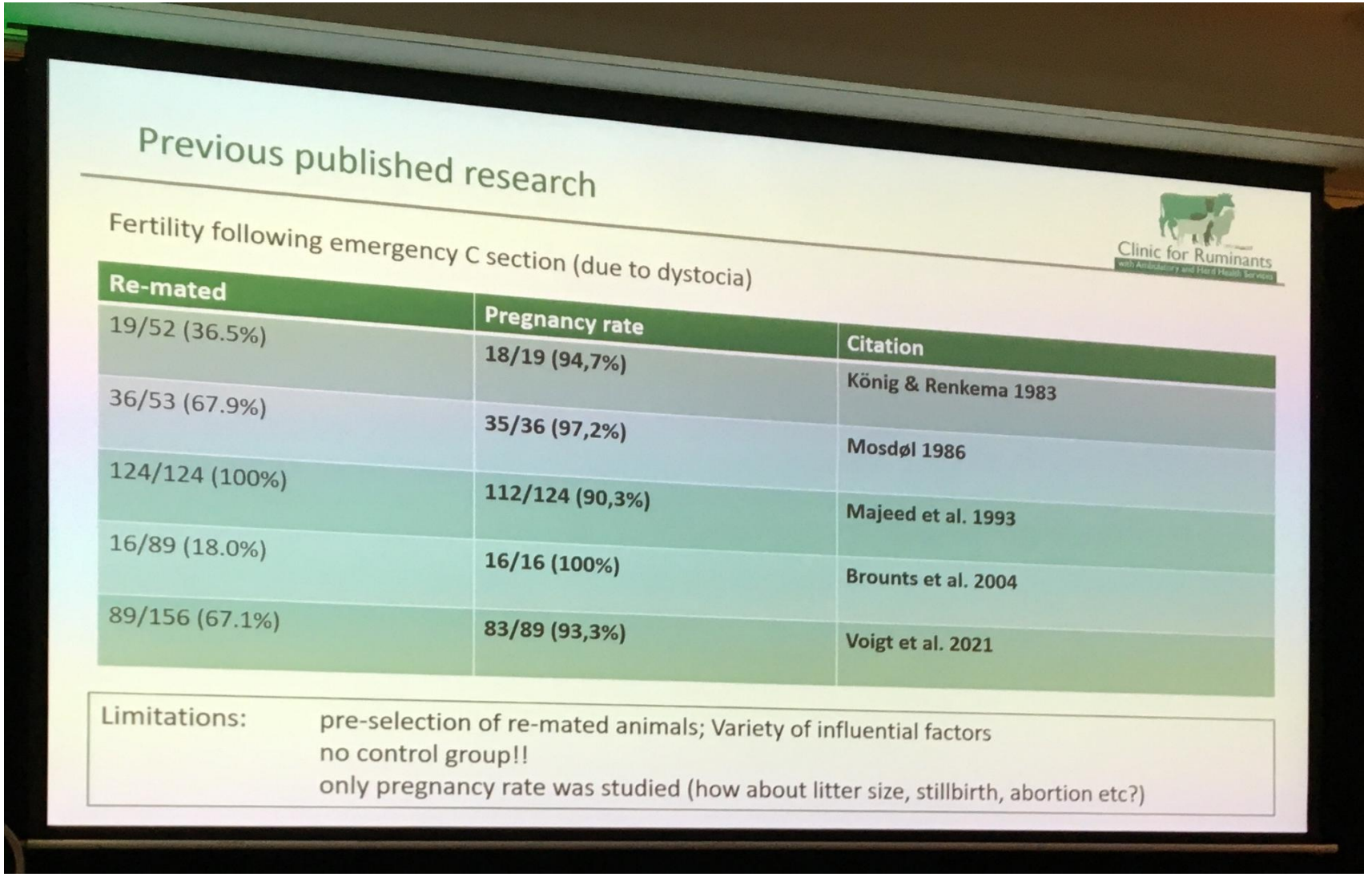


Introduction: Enzootic nasal adenocarcinoma (ENA) of goats, also known as an enzootic nasal tumour, is a contagious neoplasm of the nasal mucosal glands aetiologically associated with the **betaretrovirus ENTV-2**. Clinical signs are absent in the early stages when the tumour is small, but as the disease progresses, symptoms such as **dyspnea, seromucous nasal discharge, snoring, coughing, exophthalmos, and skull deformities** are observed. There is no effective treatment or vaccine, and disease control on affected farms is challenging due to the apparent lack of humoral immune response, making detecting preclinically affected goats difficult.

Objectives: To assess the efficacy of nostril thermography and RT-PCR from nasal swabs for the early detection of enzootic nasal adenocarcinoma (ENA) in goats.


INTERNATIONAL SHEEP VETERINARY CONGRESS
27 - 31 OCTOBER 2025
WOLLONGONG AUSTRALIA
Healthy Sheep to Feed and Clothe the World
SCRUM
SERVICIO CLINICO DE RUMIANTES
FACULTAD DE VETERINARIA DE ZARAGOZA
EUROPEAN COLLEGE OF
Small Ruminant
HEALTH MANAGEMENT
INTERNATIONAL SHEEP VETERINARY ASSOCIATION
Materials and Methods
74
Ethical approval (reference PD29/24 NE)
Clinical examination
Thermographic images of the nostrils
17.0
0.95
Healthy goat
ENA

Caesareans don’t affect subsequent ewe fertility



Previous published research

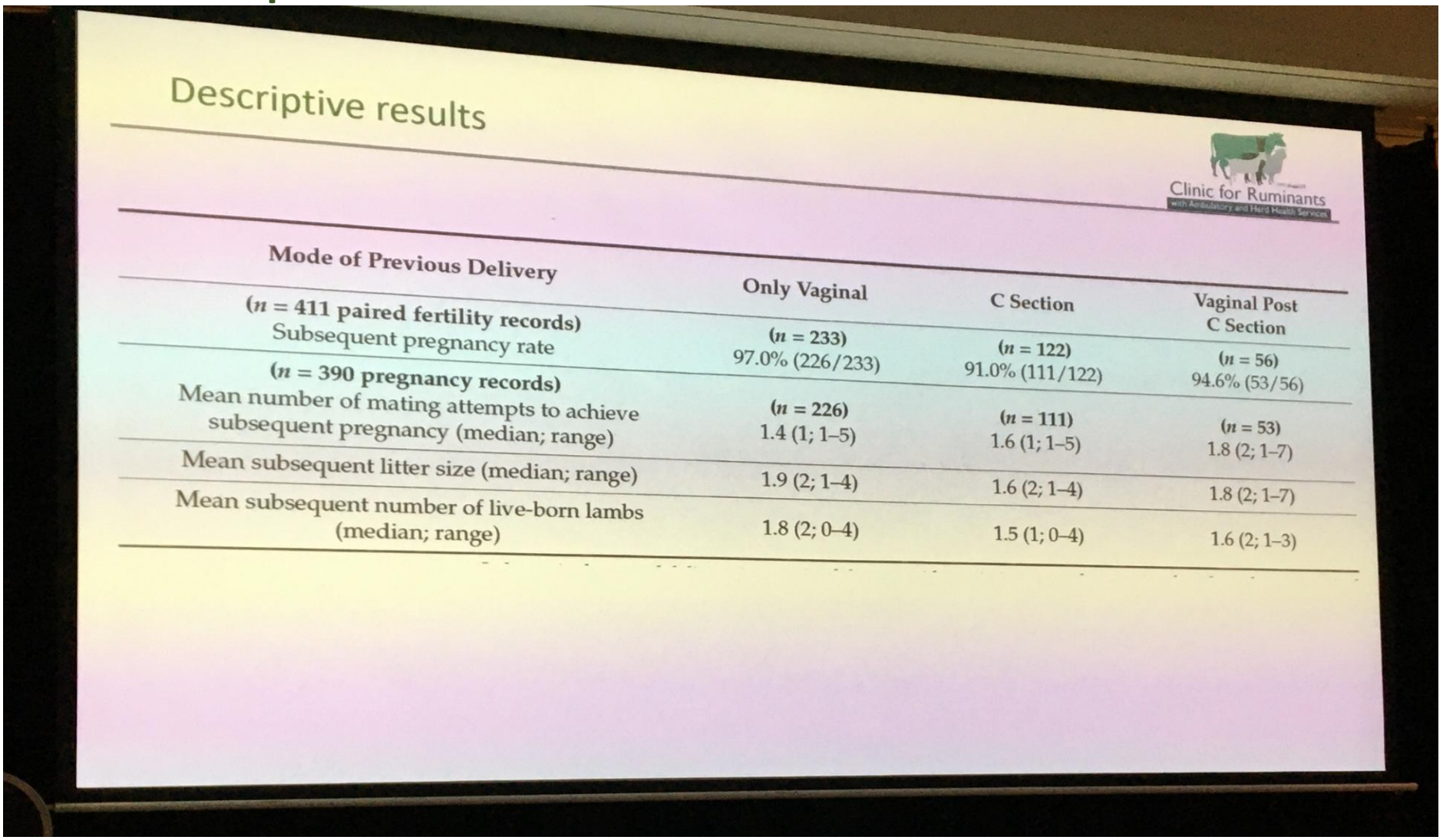
Clinic for Ruminants

Fertility following emergency C section (due to dystocia)

Re-mated	Pregnancy rate	Citation
19/52 (36.5%)	18/19 (94,7%)	König & Renkema 1983
36/53 (67.9%)	35/36 (97,2%)	Mosdøl 1986
124/124 (100%)	112/124 (90,3%)	Majeed et al. 1993
16/89 (18.0%)	16/16 (100%)	Brounts et al. 2004
89/156 (67.1%)	83/89 (93,3%)	Voigt et al. 2021

Limitations: pre-selection of re-mated animals; Variety of influential factors
no control group!!
only pregnancy rate was studied (how about litter size, stillbirth, abortion etc?)

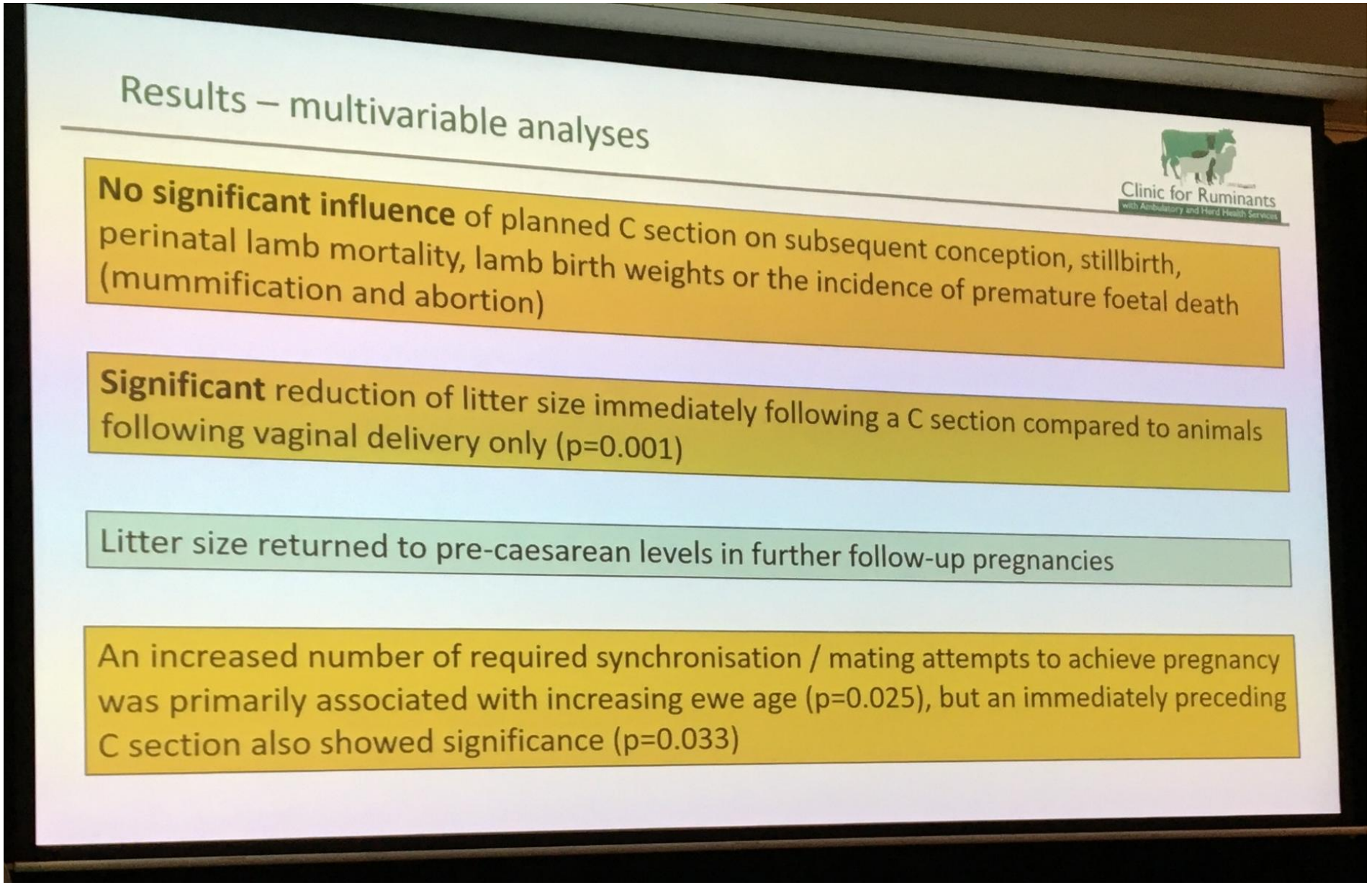
University did caesareans to train vet students then kept the ewes



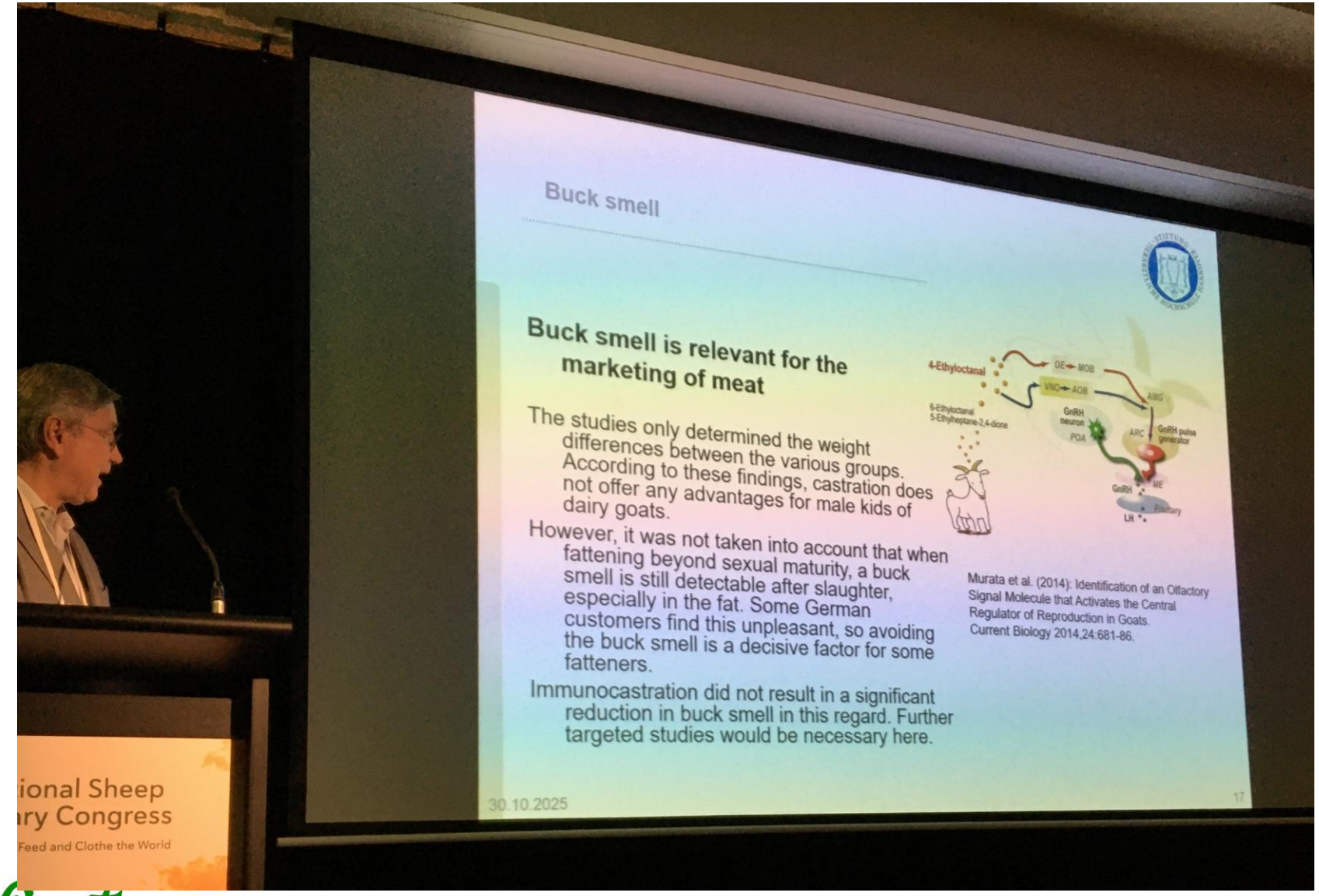
Descriptive results

Clinic for Ruminants
with Ambulatory and Herd Health Services

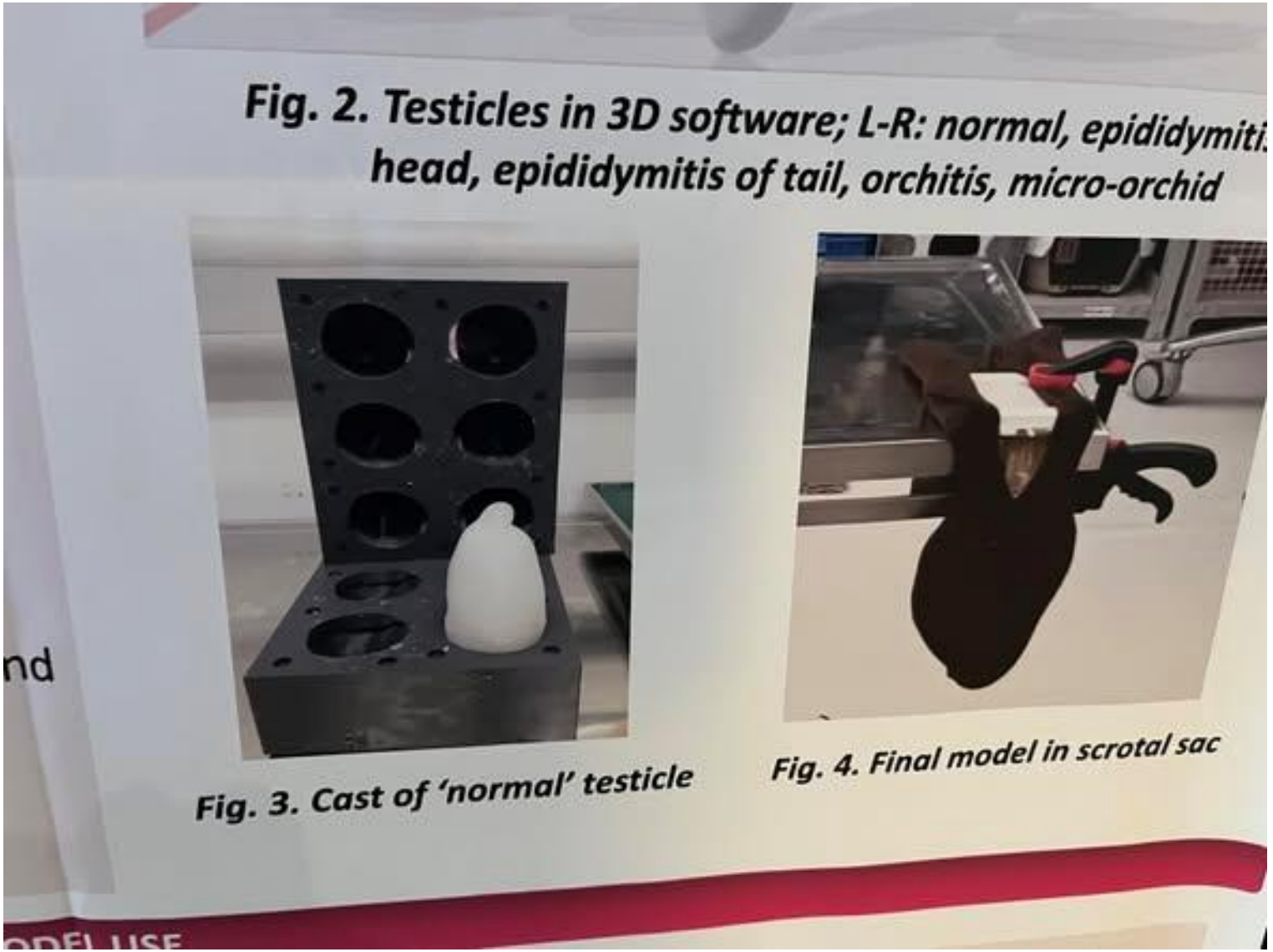
Mode of Previous Delivery	Only Vaginal	C Section	Vaginal Post C Section
(*n* = 411 paired fertility records) Subsequent pregnancy rate	(*n* = 233) 97.0% (226/233)	(*n* = 122) 91.0% (111/122)	(*n* = 56) 94.6% (53/56)
(*n* = 390 pregnancy records) Mean number of mating attempts to achieve subsequent pregnancy (median; range)	(*n* = 226) 1.4 (1; 1–5)	(*n* = 111) 1.6 (1; 1–5)	(*n* = 53) 1.8 (2; 1–7)
Mean subsequent litter size (median; range)	1.9 (2; 1–4)	1.6 (2; 1–4)	1.8 (2; 1–7)
Mean subsequent number of live-born lambs (median; range)	1.8 (2; 0–4)	1.5 (1; 0–4)	1.6 (2; 1–3)


Results – multivariable analyses
Clinic for Ruminants
with Ambulatory and Herd Health Services
No significant influence of planned C section on subsequent conception, stillbirth, perinatal lamb mortality, lamb birth weights or the incidence of premature foetal death (mummification and abortion)
Significant reduction of litter size immediately following a C section compared to animals following vaginal delivery only (p=0.001)
Litter size returned to pre-caesarean levels in further follow-up pregnancies
An increased number of required synchronisation / mating attempts to achieve pregnancy was primarily associated with increasing ewe age (p=0.025), but an immediately preceding C section also showed significance (p=0.033)

Immuno-castration doesn’t prevent buck smell in meat



Hong Kong Vet School's solution to teaching scrotal palpation



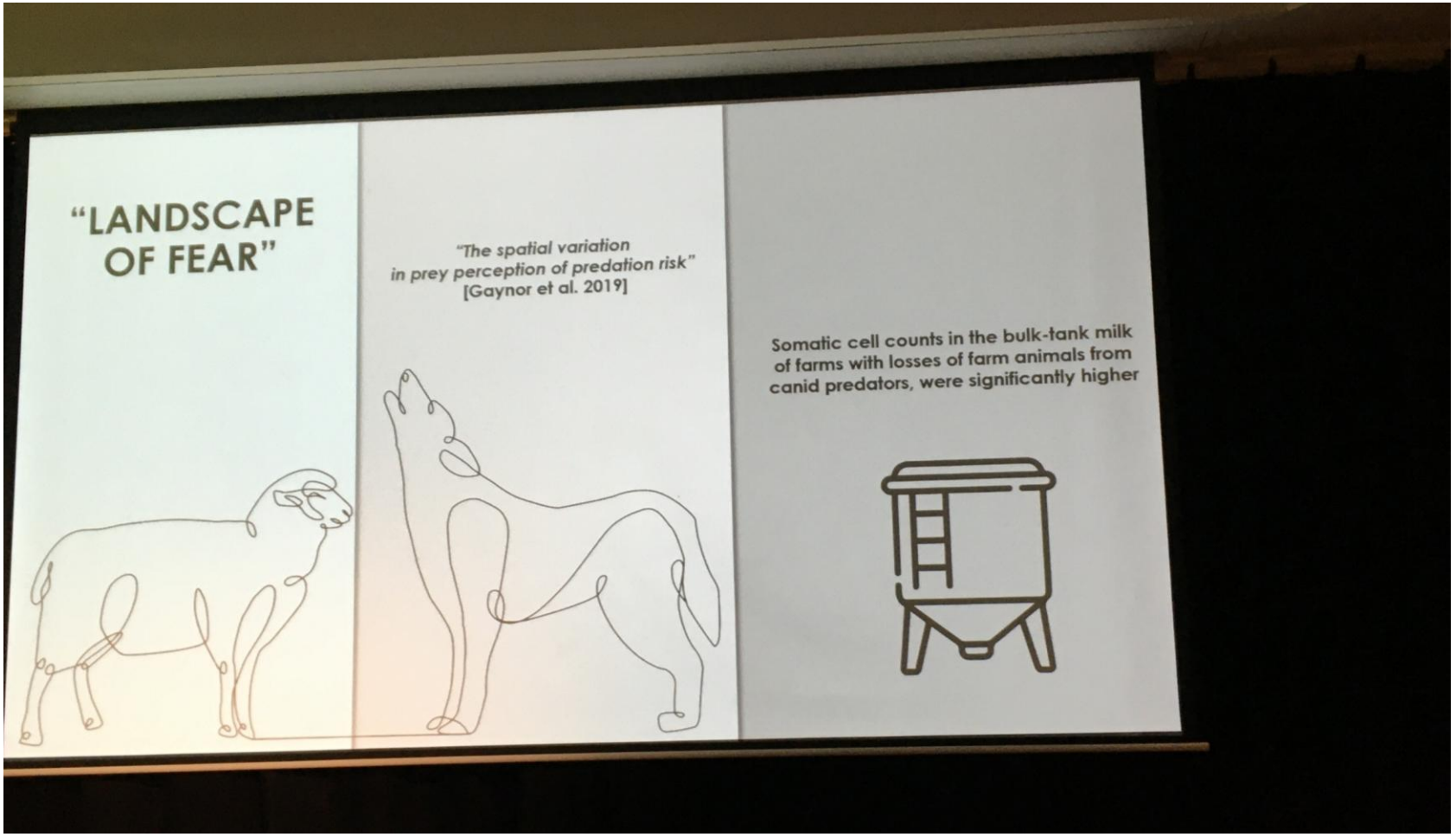
Johne's disease affects fertility in sheep

Methods: At pregnancy diagnosis, multiple pooled faecal samples were collected from pregnant and non-pregnant ewes in over 93 flocks in **UK and NZ**. Samples were screened by MAP specific qPCR.

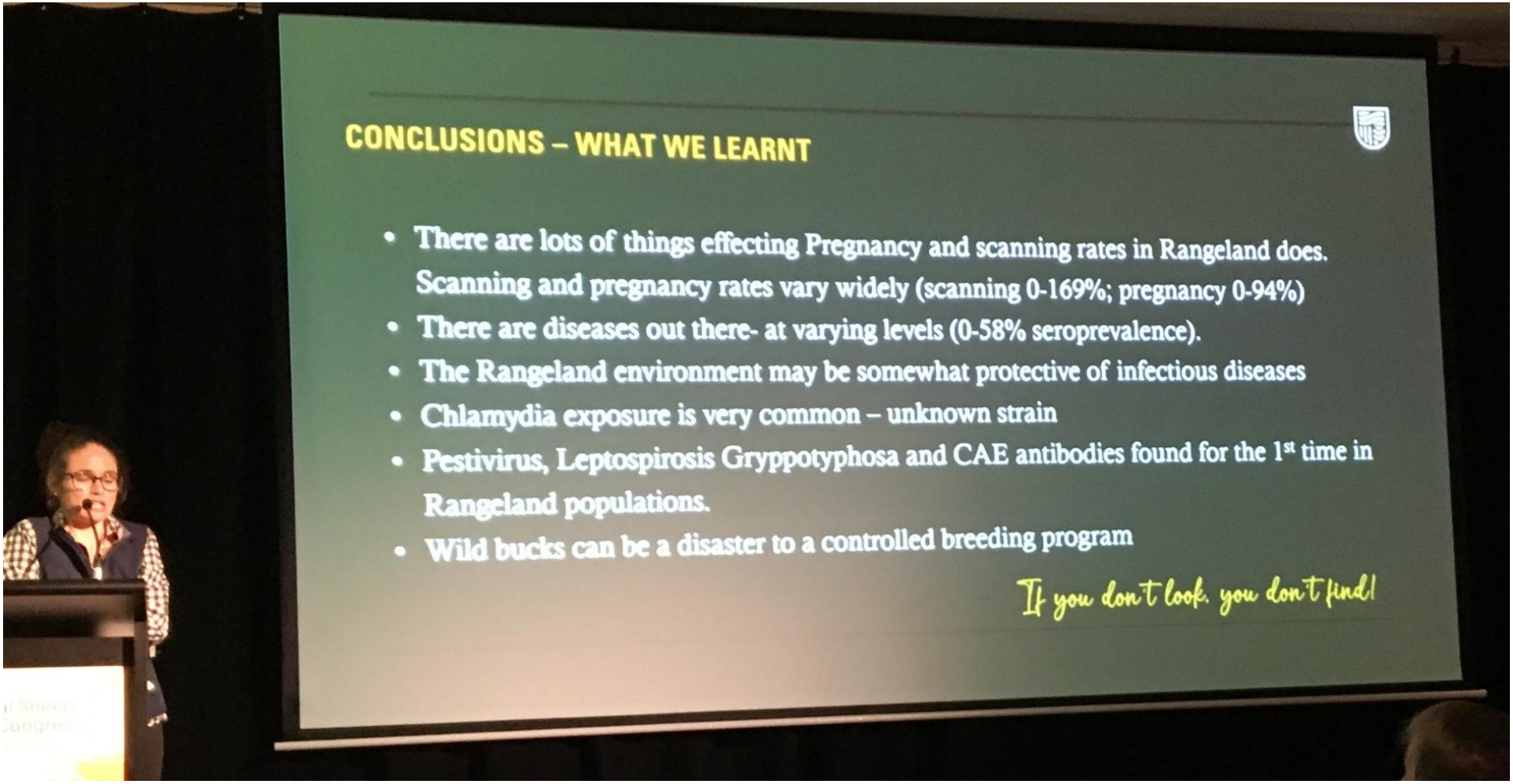
Results: Over **70% of the flocks** in both countries were infected with MAP. A higher proportion of the non-pregnant ewe groups were infected with MAP compared to the pregnant groups. Among the infected pools a significantly higher burden of MAP bacteria (lower Ct-value) was detected in the pools from non-pregnant ewes compared to pregnant ewes, suggesting either a higher prevalence of MAP shedding individuals and/or higher concentration of MAP in the non-pregnant ewes.

Conclusions: These results suggest **MAP may be a contributor to reproductive failure, and therefore increased premature culling,** in infected flocks in both countries. The non-specific symptoms of MAP infection mean it is **often underdiagnosed**, and these results suggest MAP's importance to productivity may be underestimated.

Canine predators increased Bulk Milk Cell Counts



Rangeland does fertility



If you don't test you don't know

Introduction

Reproductive performance is a critical factor in commercial goat farms' productivity and economic viability. This study will inform the Australian meat goat industry and livestock veterinarians in making management decisions.

Methods

Rangeland cross does (n=1764) from three mobs, kidding in August 2024, October 2024 and April 2025 were tagged, weighed and pregnancy tested (NSW DPI AEC approval number OAEC-0639). Blood samples were collected from 40 does in each mob. Diagnostic tests for diseases expected to affect reproductive performance were conducted by EMAI and UWA.

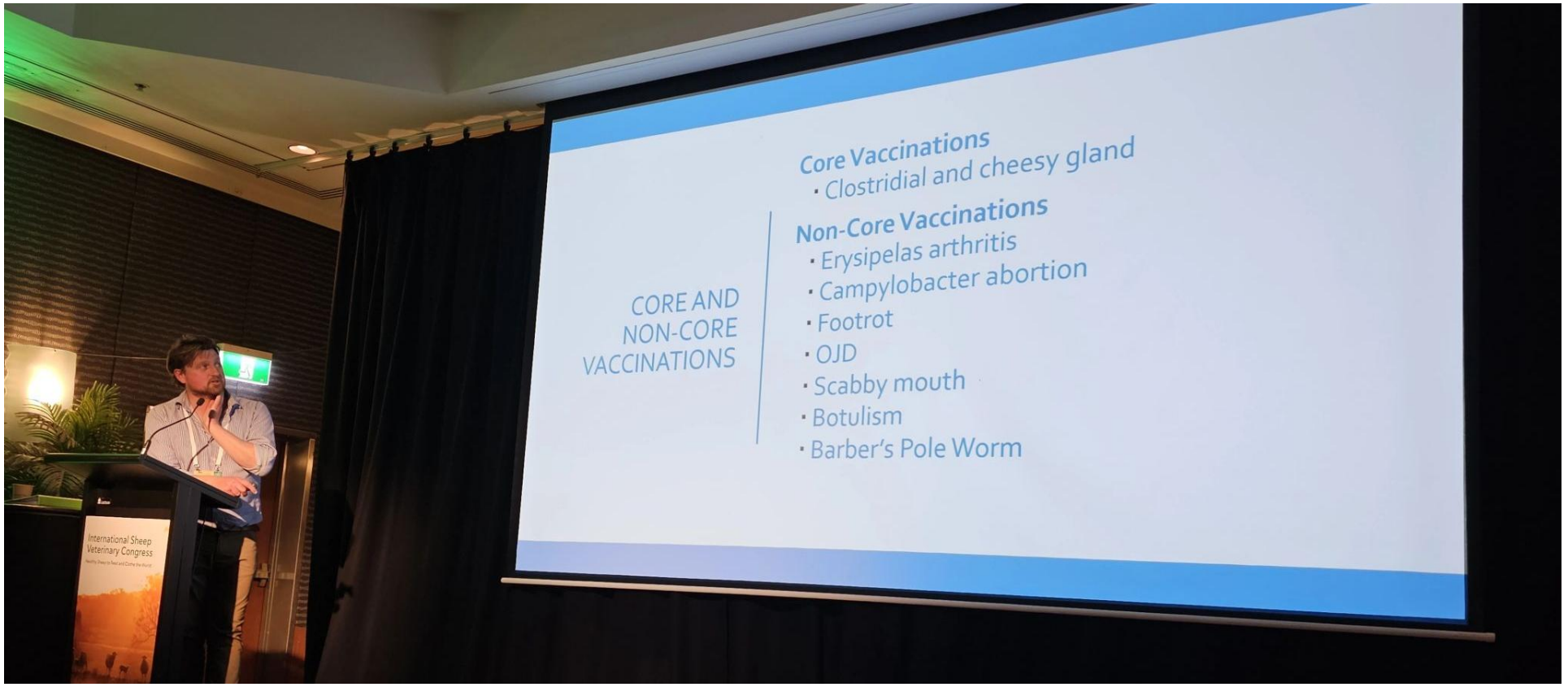
Results

Table 1. Reproductive rates and disease prevalence across three mobs of rangelands goats on a NSW case study farm

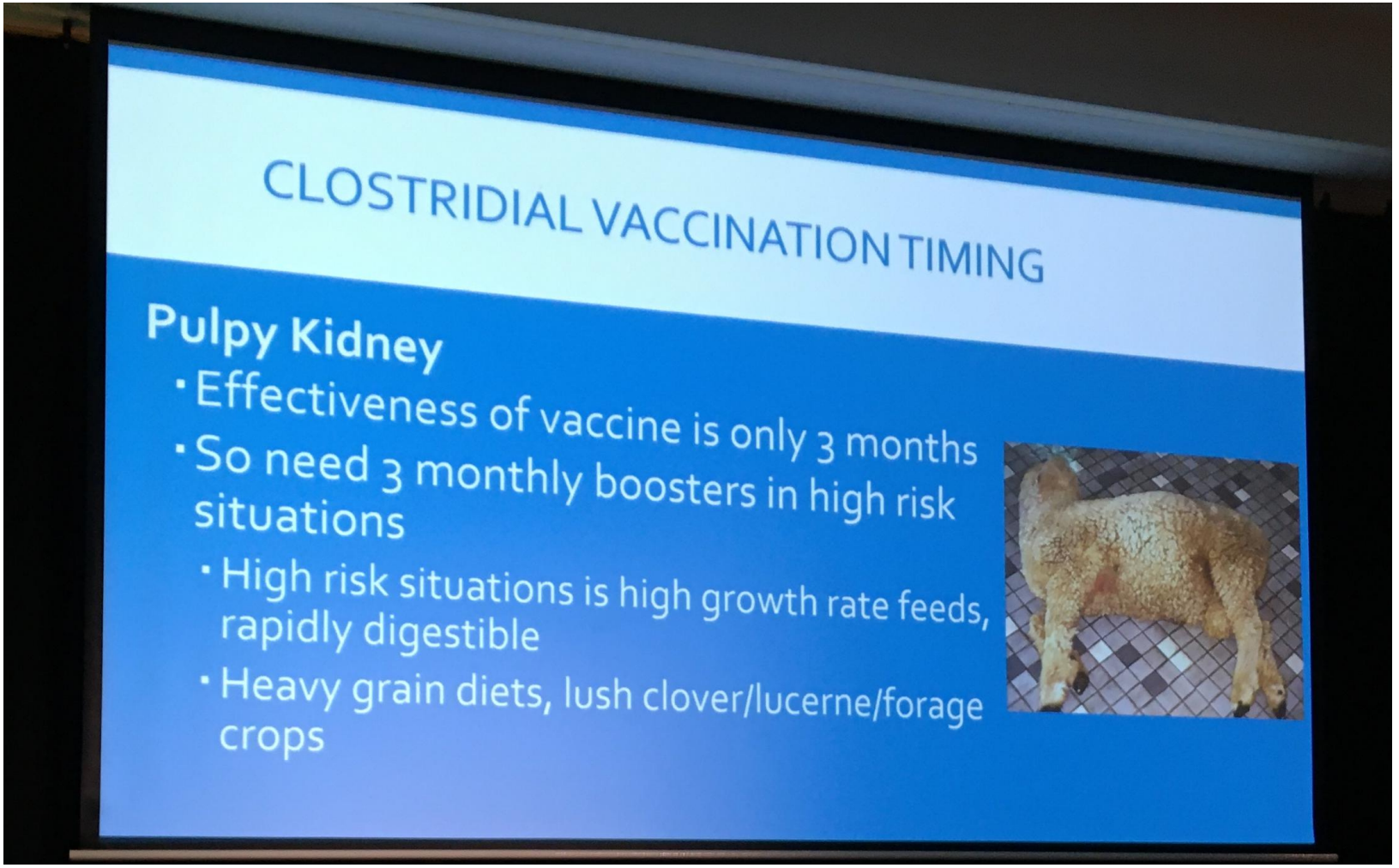
	Mean prevalence % (range in between mobs)
Weight (kg)	49.9 (43-56)
Pregnancy scanning rate (%)	154.5 (154.2-154.9)
Weaning rate (%)	84.8 (79-90)
Disease Prevalence (%)	
Chlamydia spp.	50 (28-55)
Leptospira spp.	9.17 (2.5-15)
Caprine Arthritis Encephalitis (CAE)	0.83 (0-12.5)
Toxoplasma gondii	3.1 (0- 10)
Brucella spp.	0
Q Fever (Coxiella burnetii)	0
Pestivirus	1.7 (0-2.5)

Brucellosis and Q-fever were not detected. *L. pomona* was the most common Leptospira strain identified. Bovine Viral Diarrhoea virus (BVDV) was identified.

Sheep vaccination recommendations



Enterotoxaemia – poor responses in sheep so may need every 3 months



My goat recommendations

Vaccinations for Goats

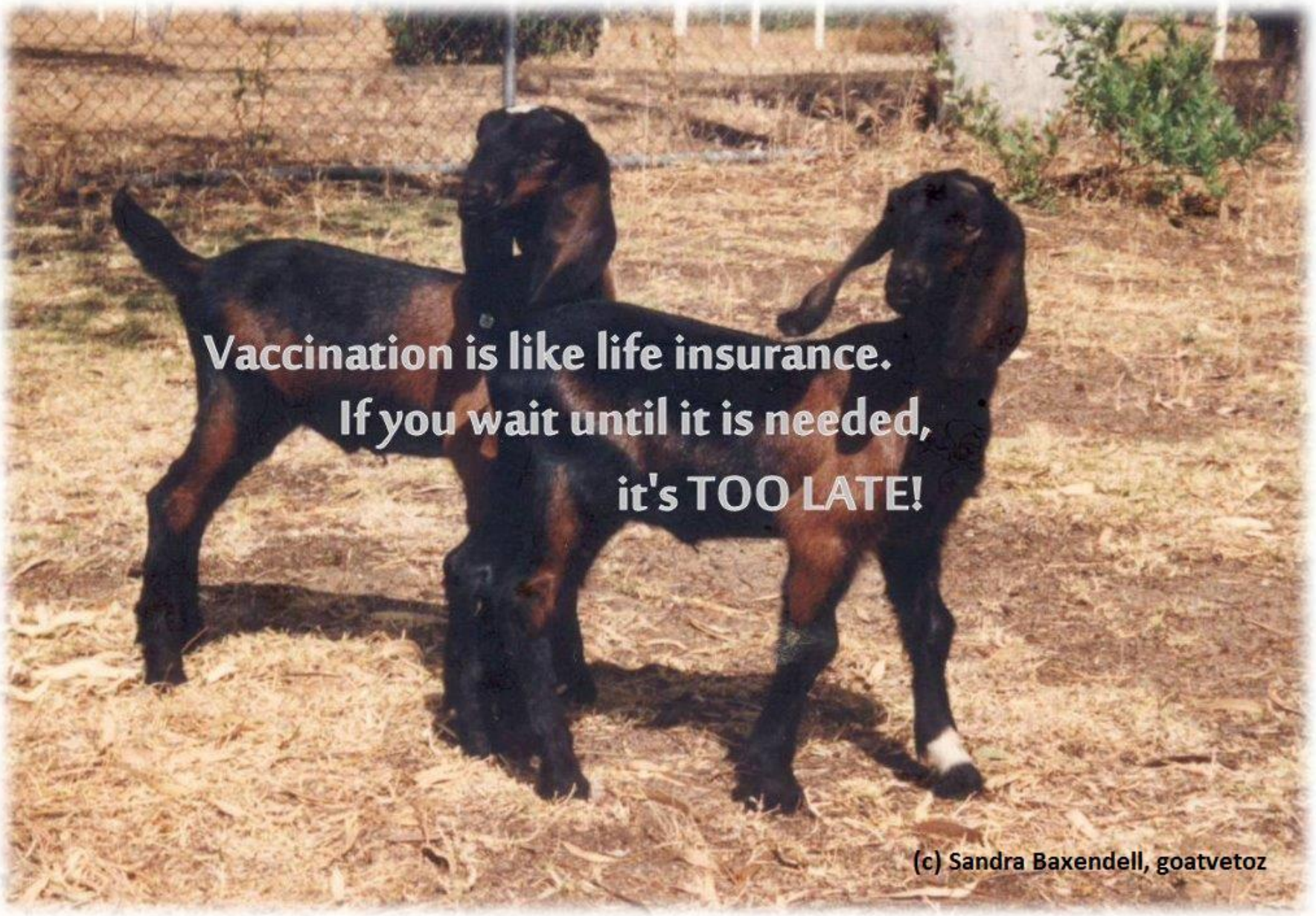
This recorded Zoom training ($25) covers:

- what vaccinations do goats need and how often ?
  - 3 in1, 5 in 1 or 7 in 1 ? Which one to use?
  - What about Gudair? Scabigard ? Lepto?
  - How are tetanus anti-toxin & tetanus vaccine different ?
  - When should kids get their first vaccines?
  - Notes (4 pages & references) provided.

Email goatvetoz@gmail.com

Goat Veterinary Consultancies - goatvetoz

Goat Veterinary Consultancies - goatvetoz


Vaccination is like life insurance.
If you wait until it is needed,
it's TOO LATE!
(c) Sandra Baxendell, goatvetoz

Enterotoxaemia prevalence of 9.5% was recorded among small ruminants, with nutrition mismanagement and sudden dietary changes identified as major predisposing factors. Poor veterinary services, limited vaccine access, and inadequate community awareness exacerbated the outbreak. Mortality rates were significant, with an estimated **7.1% of the county's sheep population** approximately 385,311 animals succumbing to the disease annually. Interventions such as **vaccination campaigns**, improved dietary practices, community education, and strengthened surveillance systems significantly mitigated the disease's impact. By 2024, **prevalence reduced to 3.4%, and mortality rates declined to 3.1%.**

Diseases of dairy goats in intensive farming systems in Northern Croatia

Antun Kostelić[1], Petra Bratić[2], Gordan Šubara[3], Dragutin Vincek[4], Monica Darrer[1], Sofija Džakula[5]

[1]University of Zagreb, Faculty of Agriculture,Zagreb, Croatia; [2]University of Zagreb, Veterinary Faculty, Zagreb, Croatia; [3]Agency for Rural Development of Istria, Pazin, Craotia; [4]Varaždin County, Franjevački trg 7, 42000, Varaždin, Croatia; [5]University of Leipzig, Faculty of Veterinary Medicine. Leipzig, Germany

Corresponding author: akostelic@agr.hr

Background: The production of goat milk in Croatia is primarily based on intensive farming systems on family farms. In the northern part of Croatia, 60% of the total amount of goat milk is produced. The production is mostly based on the Alpine breed.

Research Aims: The goal of the research was to diagnose diseases that occur in such farming systems.

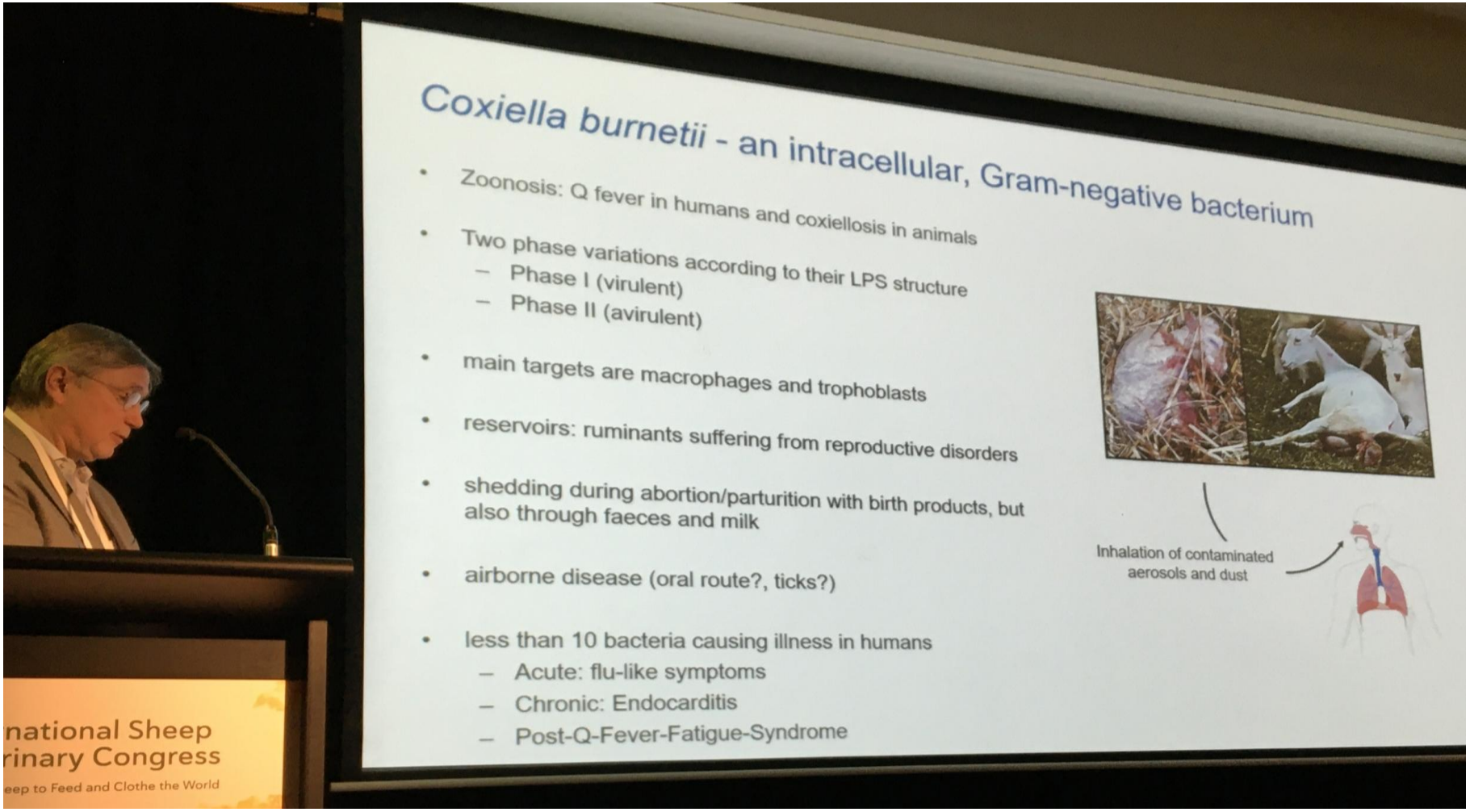
Methods: The study was conducted on 43 farms, and the following methods were used: history taking, clinical examination, post-mortem examination, serological, coprological, and bacteriological tests.

w PDF EN t was found that the health of goats and herds is threatened by the following

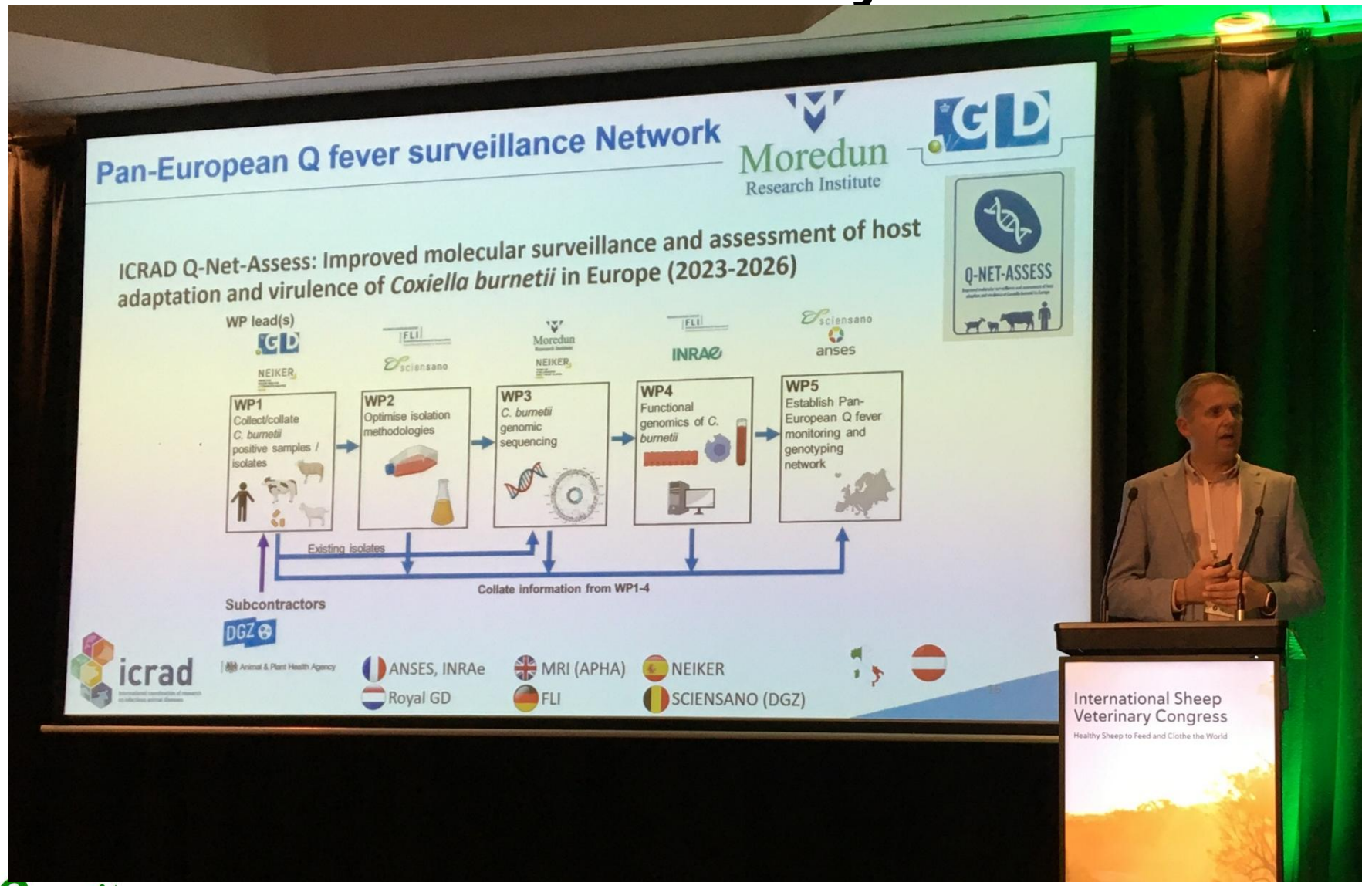
Results: It was found that the health of goats and herds is threatened by the following infectious diseases: **caprine arthritis encephalitis (CAE), listeriosis**, infectious ecthyma, and **caseous lymphadenitis (CLA).** Furthermore, it was determined that one of the biggest problems is **CAE, with a prevalence of over 80%.** The disease clinically manifests in **38% of the population**. Listeriosis occurs occasionally in herds that feed on silage. Increased frequency of the disease was noted during dry periods due to the contamination of grass with soil during silage making. Clinical mastitis most often occurs during suckling in kids in 5% of goats, while subclinical mastitis is present in 23% of the population. Diseases diagnosed due to improper feeding include ketosis, ruminal acidosis, and hypocalcemia. As expected, parasites in such a farming system do not significantly threaten goat health, except for coccidiosis, which is most common in kids. One of the common mistakes is the failure to remove horns, which leads to mutual injuries among goats.

Conclusion: In conclusion, we can say that **herd health management must be focused on eradicating diseases such as CAE and C**L, as well as improving the quality of feeding.

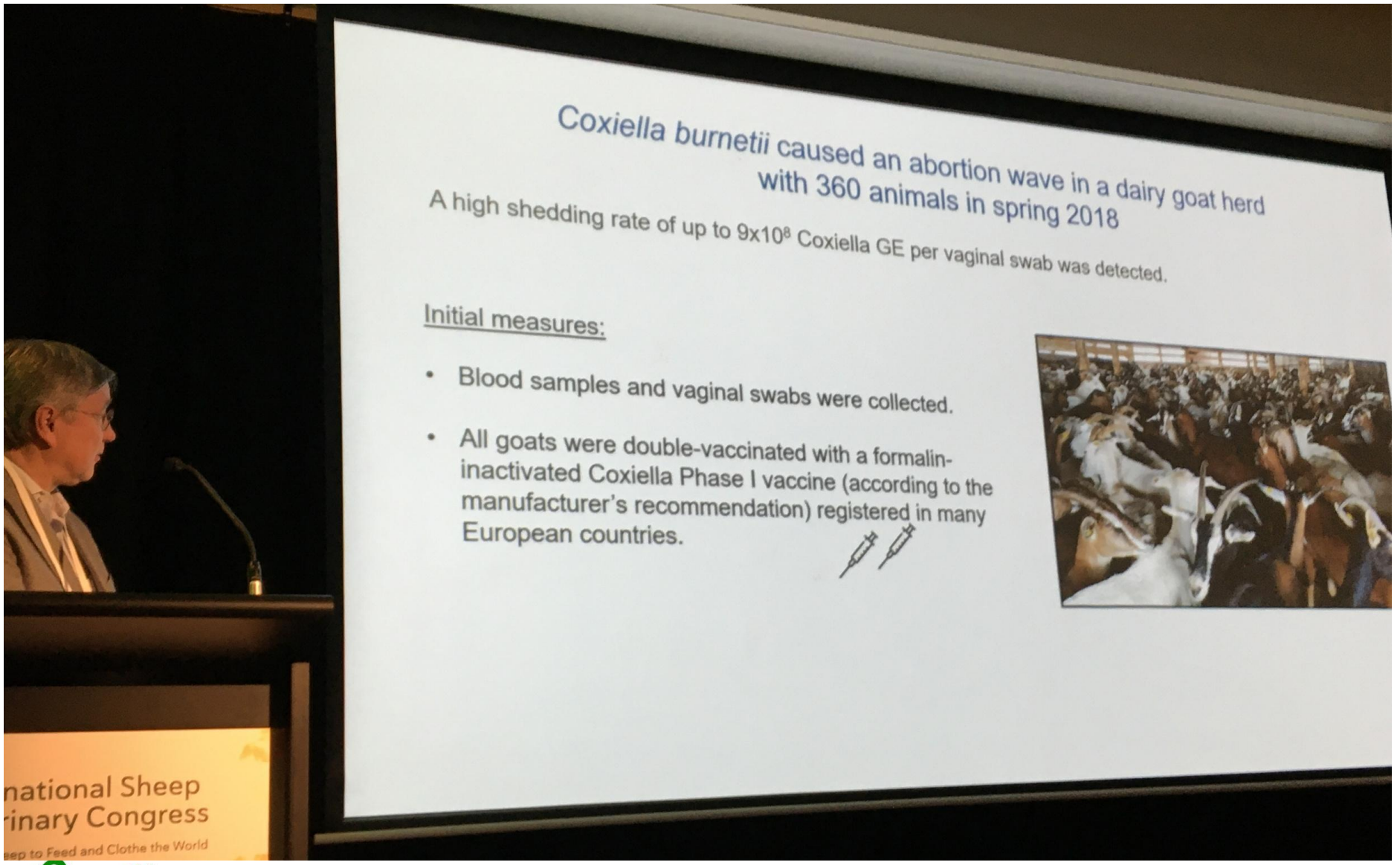
Qfever affects all animals but goats caused hundreds of human cases in the Netherlands



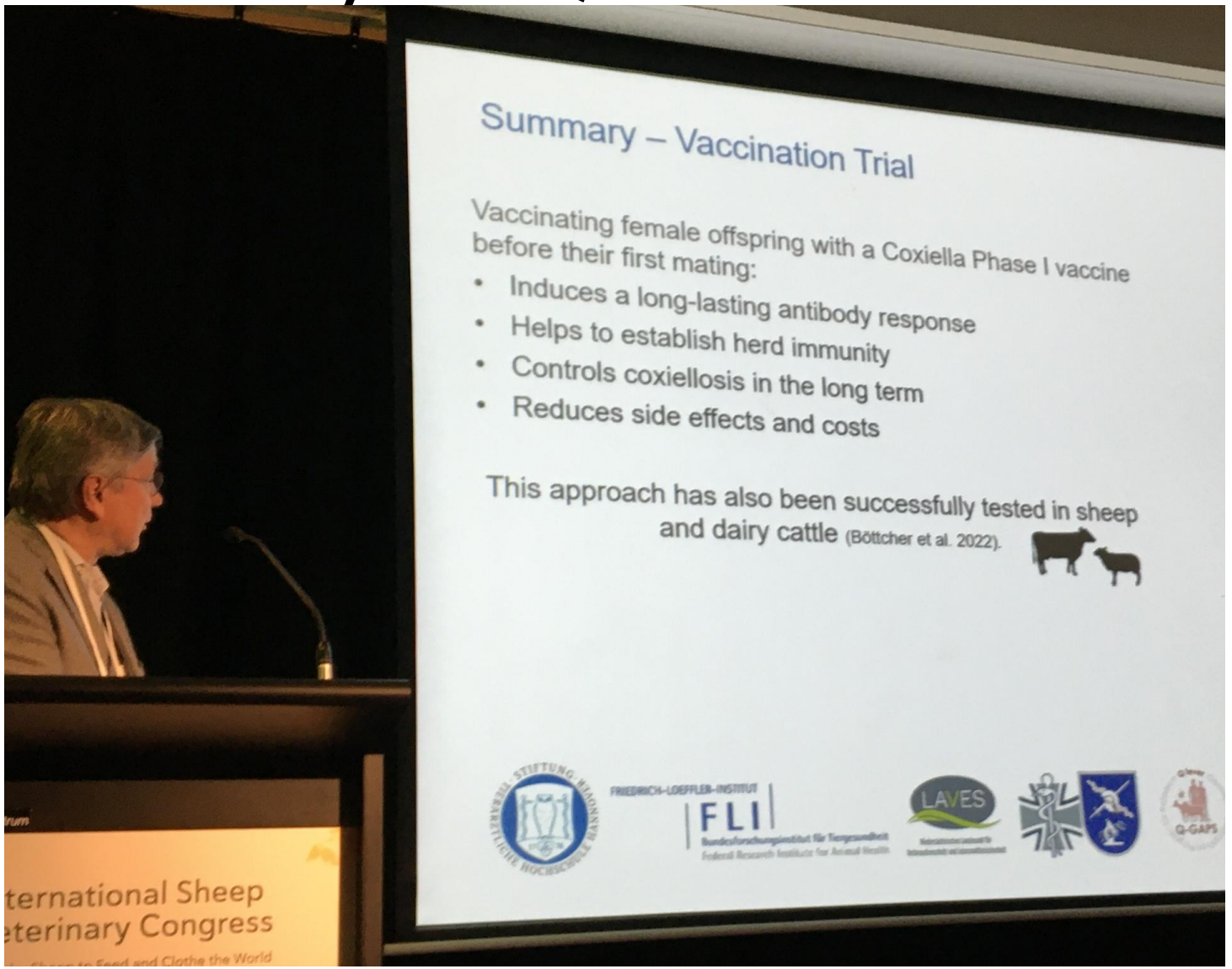
Europe has a Qfever/coxiellosis surveillance system



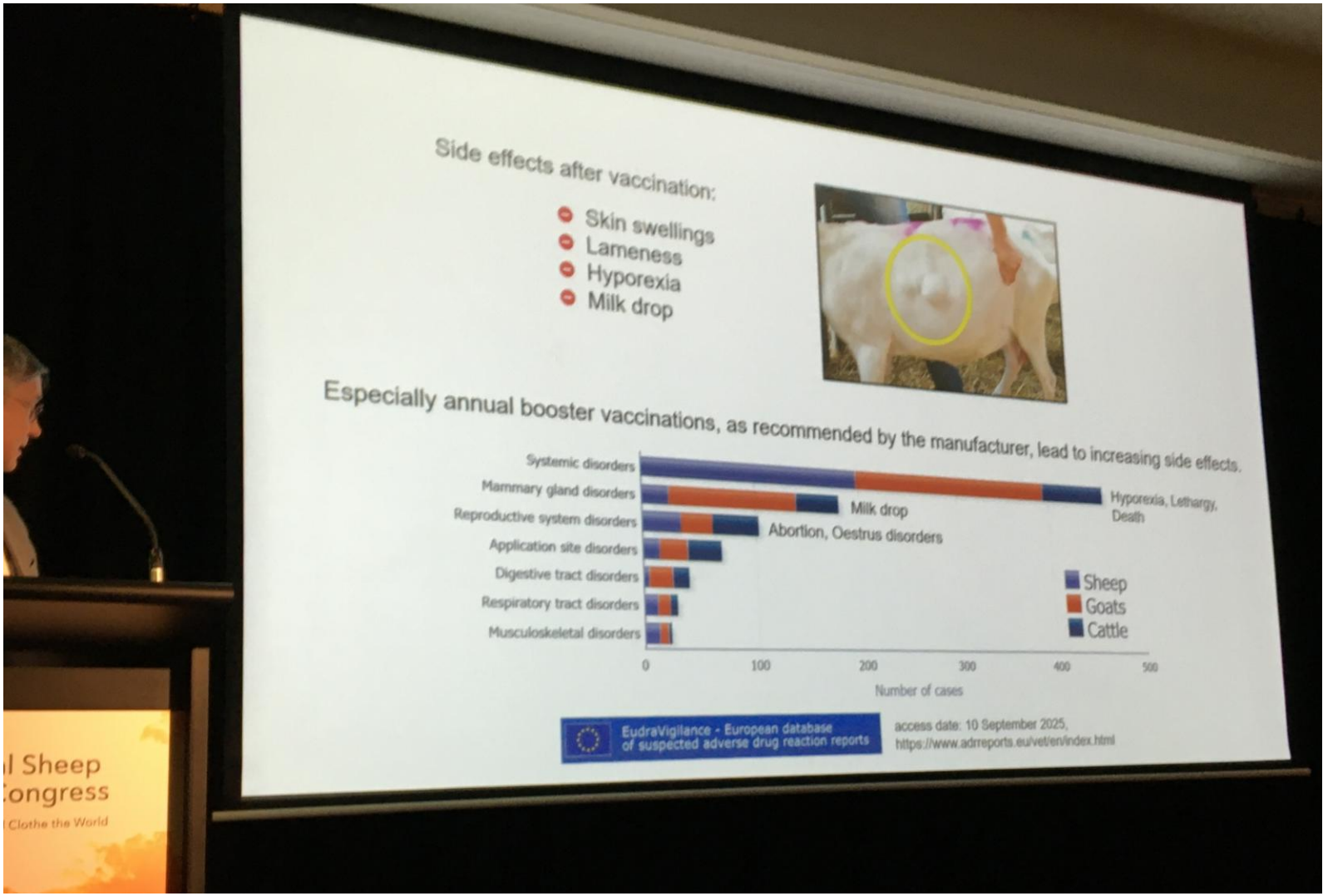
Offspring vaccination as a strategy to control *Coxiella burnetii* shedding in dairy goats



Vaccinating offspring builds herd immunity to Qfever/coxiellosis

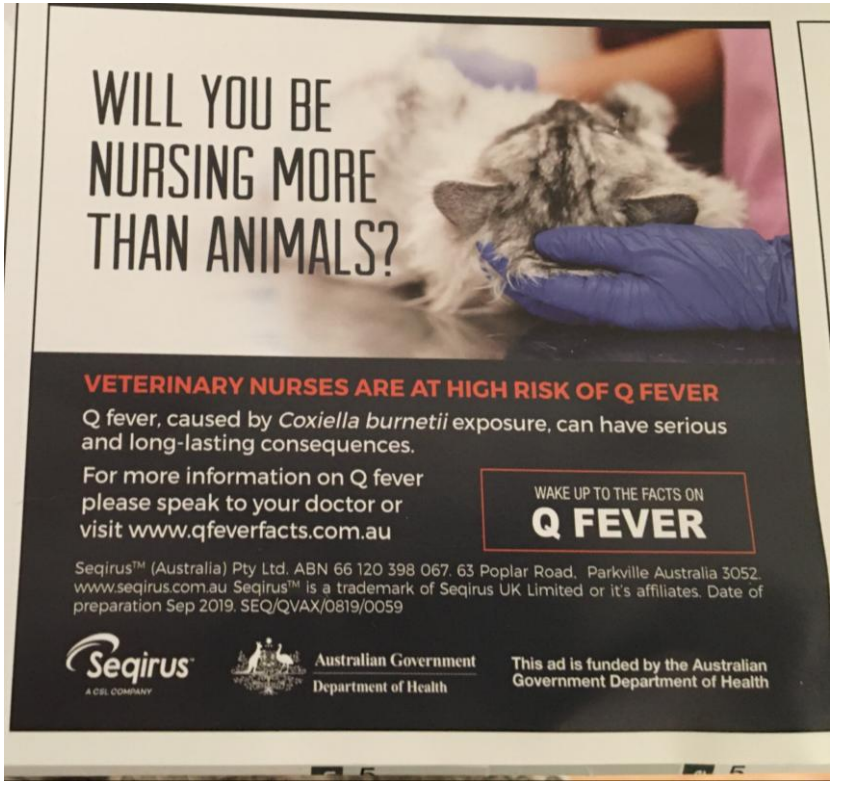


Serious vaccine reactions in goats esp. annual boosters



In Australia we vaccinate people as we can get it from dust, marsupials etc

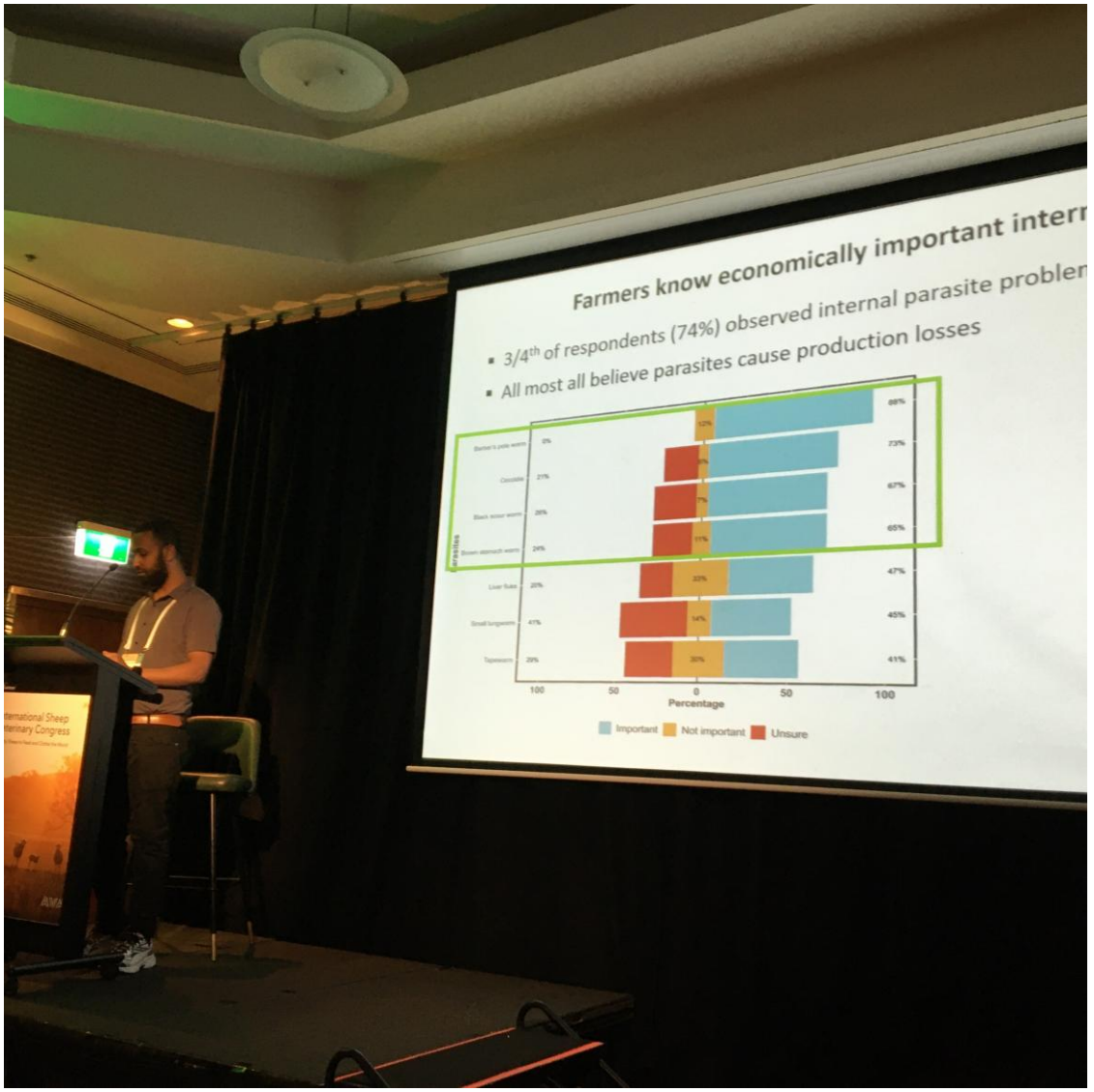
There is no animal vaccine



WORM CONTROL

Mostly sheep lectures but applicable to goats

Dairy Goat Society Australia survey



74% said internal parasites were a problem & all believed internal parasites affected production

Challenges

- Lack of info on goat dose rates
- Goats metabolise drenches differently
- Off label use
- Resistance and residue risks

43 were using BioWorma
Only 16 had done a Faecal Egg Count Reduction Test

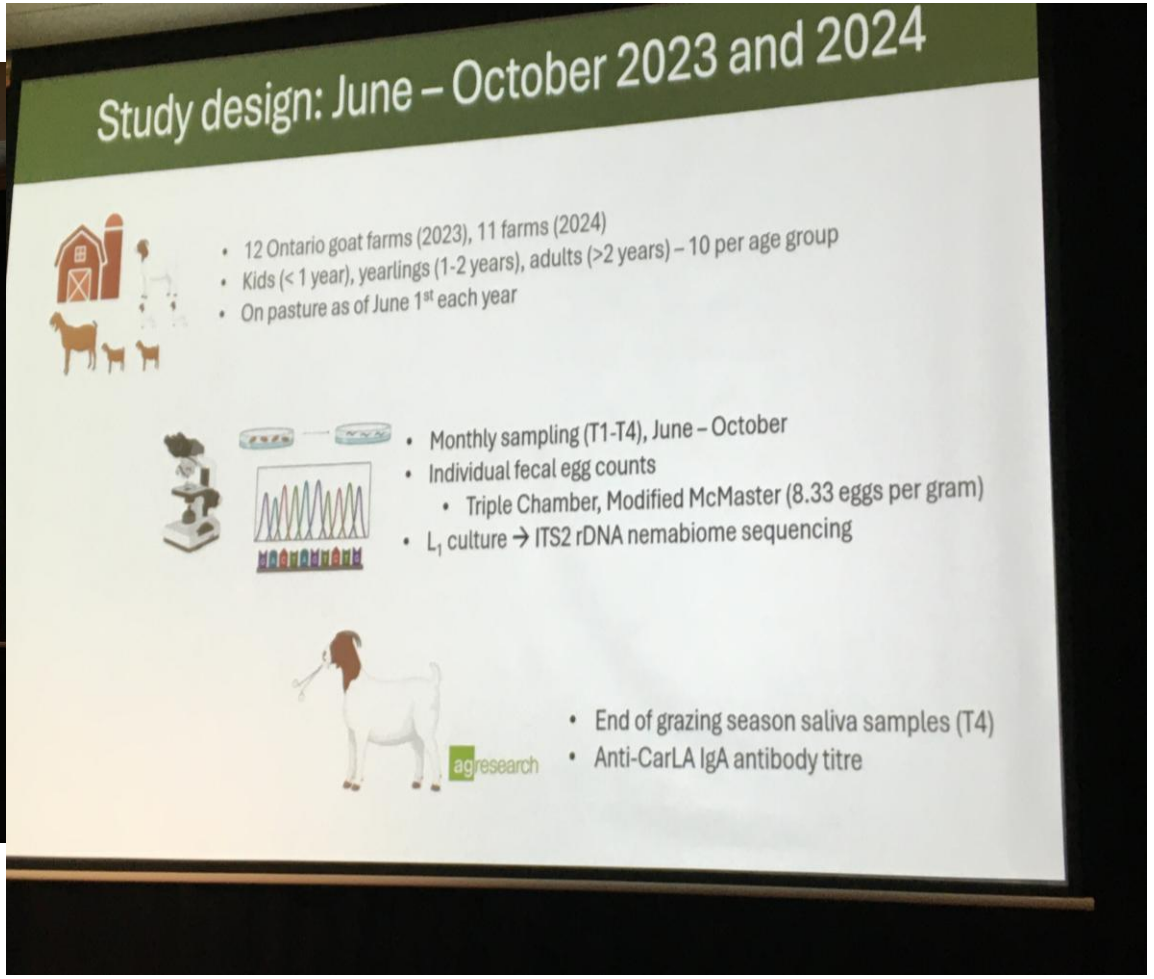
Key findings/recommendations

- *Haemonchus contortus* or barbers pole worms are main problem
- We need drenches registered for goats as 80% are using them anyway
- Monitor drench resistance
- Promote sustainable parasite control

Results: completed the online questionnaire, predominantly female owners managing medium/small herds in the southeastern states of Australia. Seventy-four percent (**49/66**) of respondents **observed gastrointestinal parasite-related illnesses in their goats** and **two-thirds assessed worm burden using faecal egg counts**. Nearly all (97%) acknowledged production losses caused by gastrointestinal parasites and ranked *Haemonchus contortus* as the most important internal parasite. The majority of respondents (94%) used anthelmintics, with **Q drench being the most commonly used anthelmintic**. WormBoss and veterinarians were the most trusted sources for advice on the use of anthelmintics. Targeted deworming was the most common strategy, though 77% had never tested the efficacy of anthelmintics. Multiple correspondence analyses delineated “good” and “poor” gastrointestinal parasite control practices.

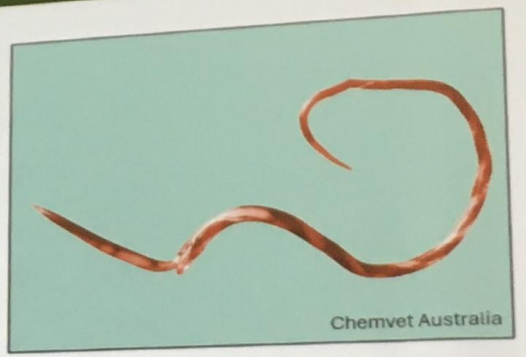

GLOBAL ISSUES – Anthelmintic usage and the drivers of change
On farm productivity – remains an untapped opportunity
Drench resistance – a growing global issue
Supply chain (Supermarkets) influence
Animal welfare – doing the right thing
Greenhouse gas emissions – the impact of parasites
Anthelmintics sales – restricted purchase legislation (SQP)
Anthelmintic use – Government legislation
Environmental - impact of anthelmintics
TST & TT's – Targeted Selective Treatment and Targeted Treatment approaches
Preventative anthelmintic treatment programs
Stakeholders are now facing sustainability concerns related to this approach and are seeking future proofed solutions

Anti-CarLA test Ontario Canada



Gastrointestinal nematodes on Ontario goat farms

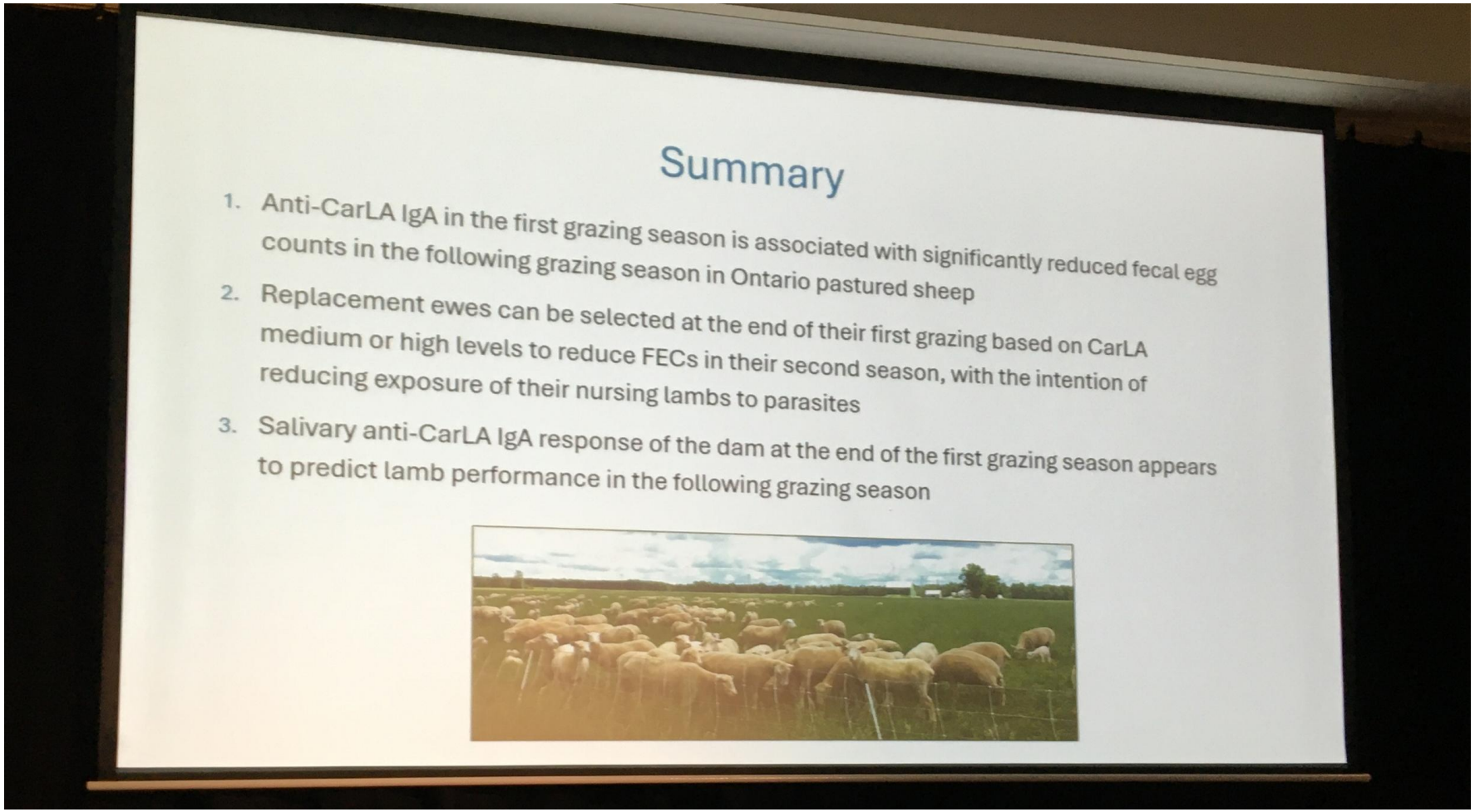
- GIN species prevalence (ITS2 rDNA Nemabiome):
  - ***Haemonchus contortus* #1 (24 – 100%)**
  - ***Trichostrongylus colubriformis* #2 (26 – 71%)**
  - *Teladorsagia circumcincta, Oseophagostomum venulosum, Trichostrongylus axei, Chabertia ovina* (< 10%) (C.Evered unpublished)

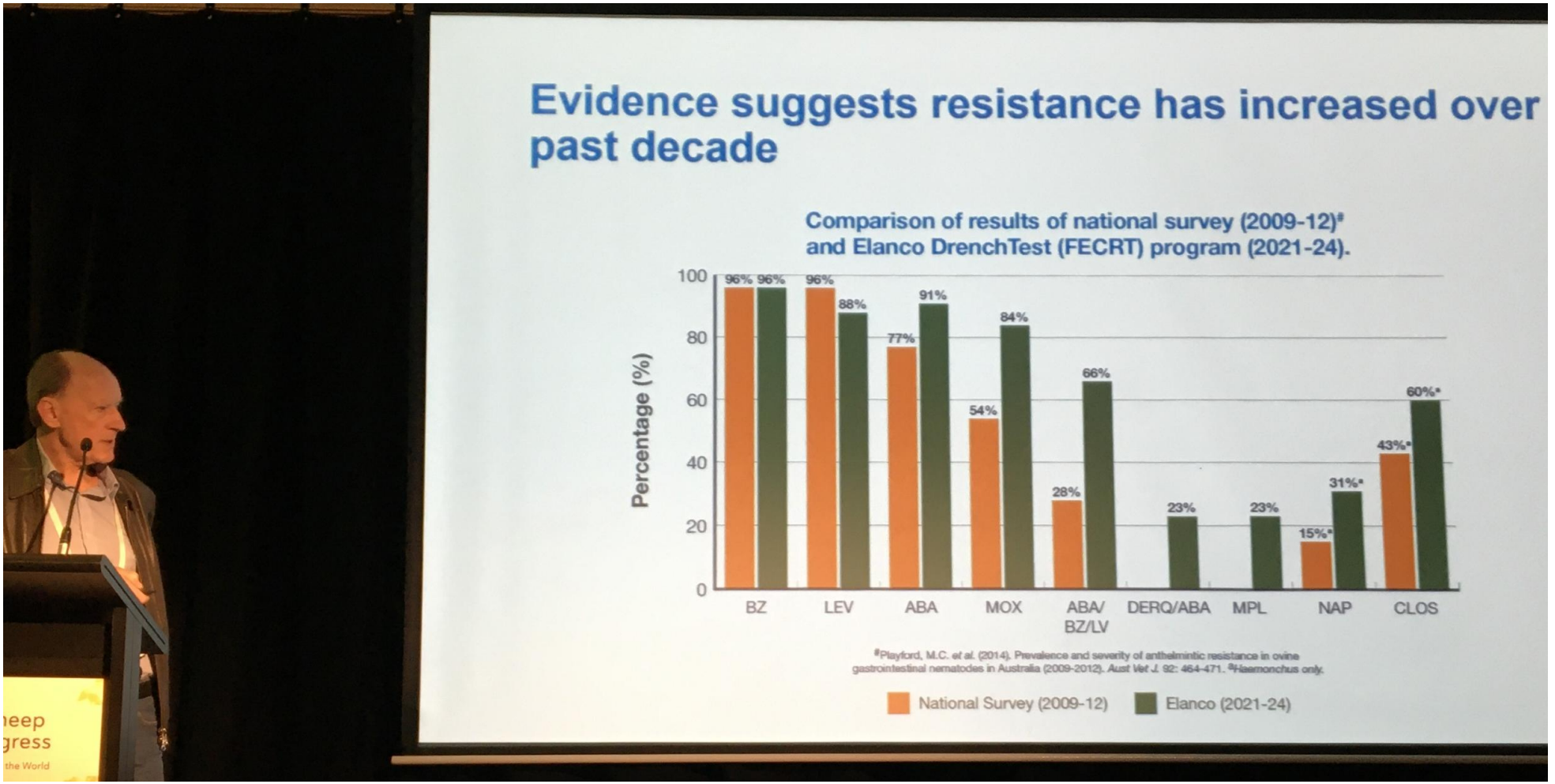


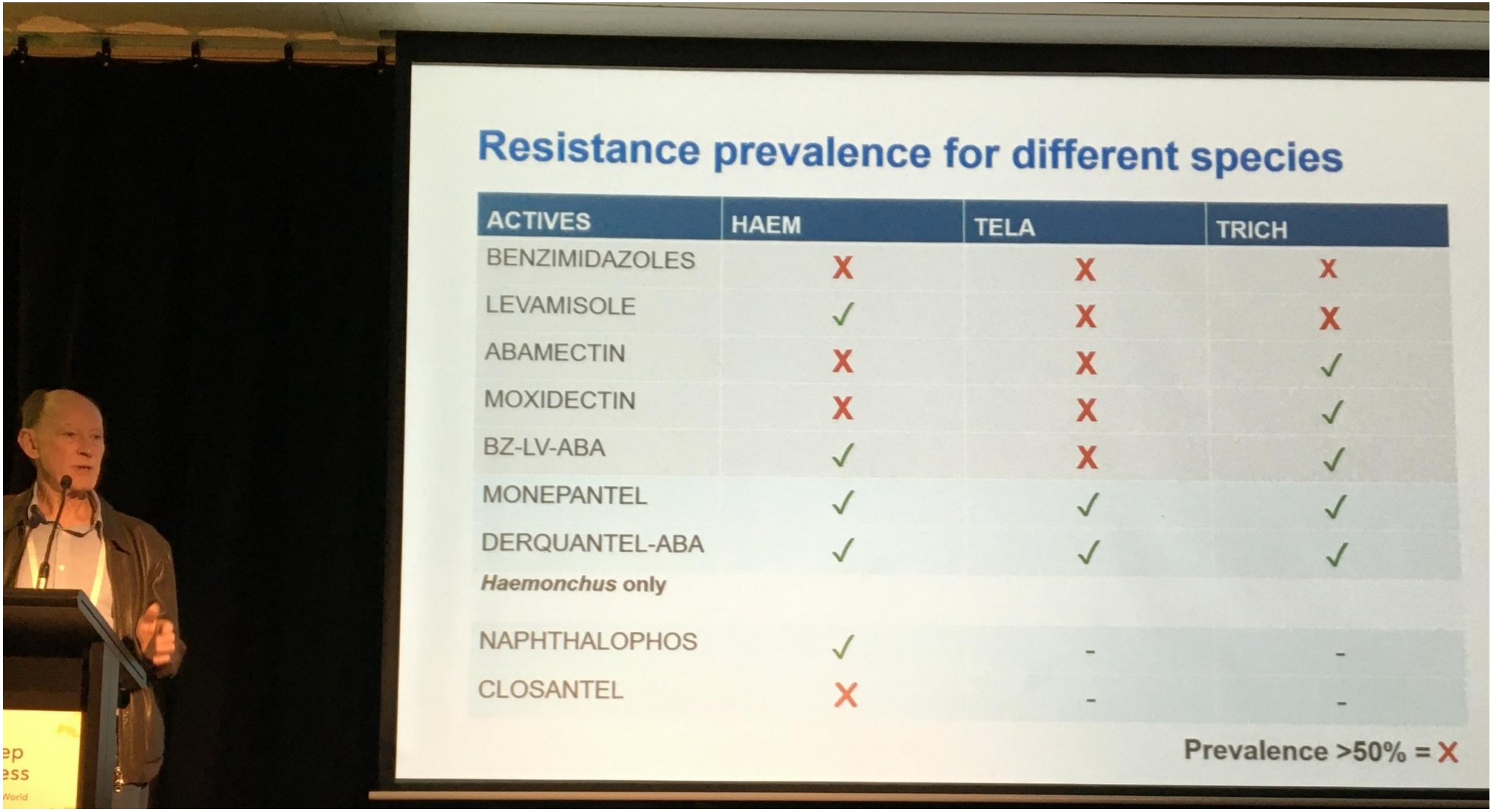
- **No anthelmintics approved for use in goats in Canada**
- Preliminary data (2022) indicate widespread benzimidazole (BZ) resistance on Ontario goat farms
  - *H. contortus* resistance to BZ on 17/17 farms
  - *T. colubriformis* resistance to BZ on 12/12 farms

  (O. Rucinskas unpublished)

Anti-CarLA test works in sheep, but opposite in goats (in 1st year)




Evidence suggests resistance has increased over past decade
Comparison of results of national survey (2009-12)# and Elanco DrenchTest (FECRT) program (2021-24).
Percentage (%)
100
80
60
40
20
0
96% 96%
96% 88%
77% 91%
54% 84%
28% 66%
23%
23%
15%* 31%*
43%* 60%*
BZ
LEV
ABA
MOX
ABA/ BZ/LV
DERQ/ABA
MPL
NAP
CLOS
#Playford, M.C. et al. (2014). Prevalence and severity of anthelmintic resistance in ovine gastrointestinal nematodes in Australia (2009-2012). Aust Vet J. 92: 464-471. *Haemonchus only.
National Survey (2009-12)
Elanco (2021-24)

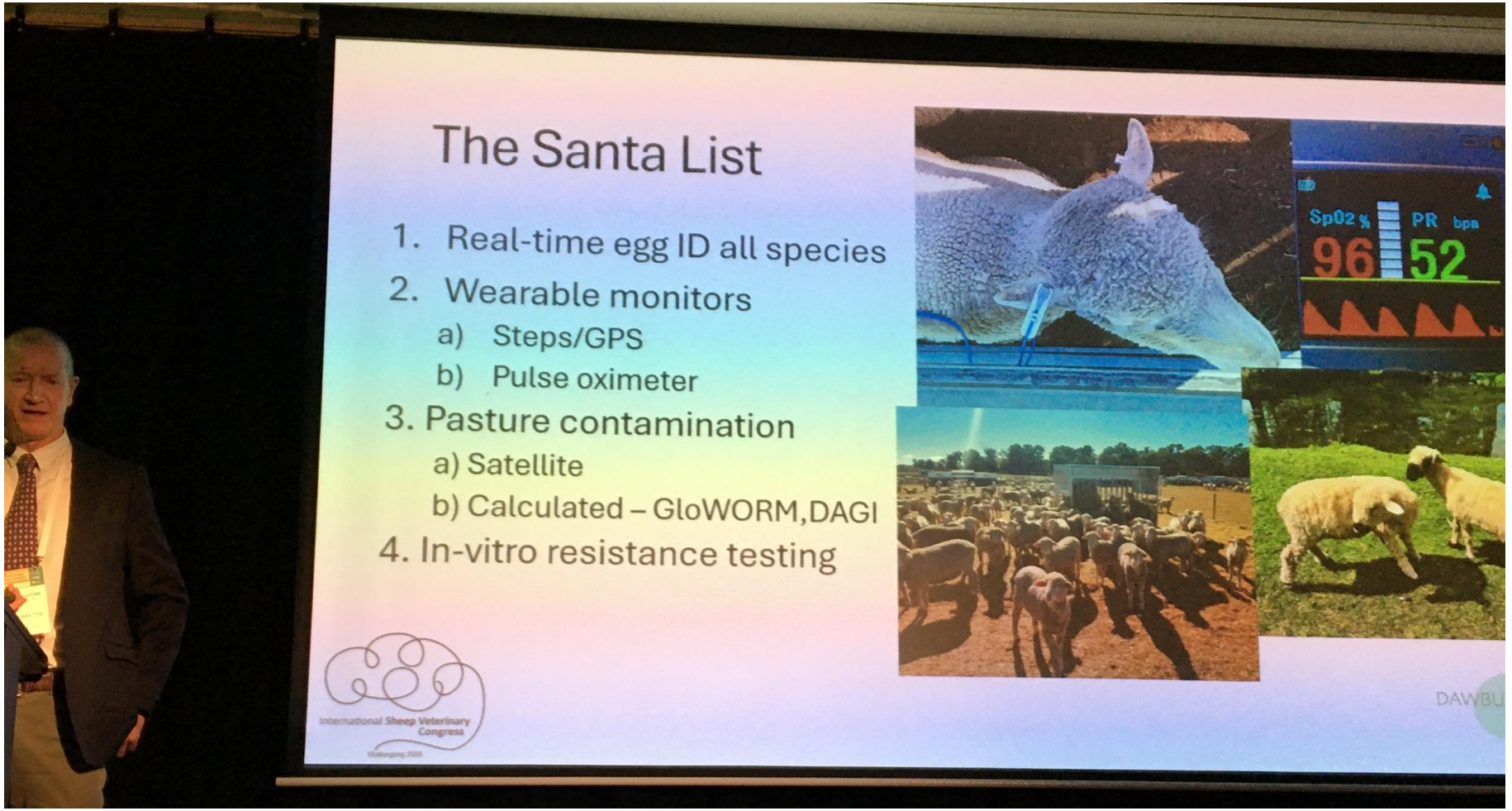

Resistance prevalence for different species
ACTIVES
HAEM
TELA
TRICH
BENZIMIDAZOLES
X
X
X
LEVAMISOLE
✓
X
X
ABAMECTIN
X
X
✓
MOXIDECTIN
X
X
✓
BZ-LV-ABA
✓
X
✓
MONEPANTEL
✓
✓
✓
DERQUANTEL-ABA
✓
✓
✓
Haemonchus only
NAPHTHALOPHOS
✓
-
-
CLOSANTEL
X
-
-
Prevalence >50% = X

	Good >95%		
	OK 90-94%		
	Marginal		
	Poor		
	Bad		

	Haemonchus Barber's Pole	*Teladorsagia* Brown stomach	*Trichostrongylus* Black scour
Abamectin			
Moxidectin			
Levamisole			
White / Albendazole			
Triple / Q-drench			
Zolvix			
Startect			
Closantel		NA	NA


Distribution of Average Strongyle
(by Species)
WEC by month 2015-2025
Cattle
Goats
Sheep
Average Strongyle
140
120
100
80
60
40
1600
1200
800
400
400
300
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
International Sheep Veterinary Congress
Date: 2015-2025

Research needs for sheep worms



What exciting things are in the pipeline

Or available now overseas

Working on AI ID of worm eggs

WORM ID

TRADITIONALLY, farmers have relied on larval cultures to identify which parasite species are present on farm, a slow, labour-intensive process that takes 10–14 days, requires a trained parasitologist, and often fails due to poor egg hatching or suboptimal storage conditions.

In an industry where parasite resistance is increasing and every day counts, waiting two weeks for results isn't good enough.

INTRODUCING EGG ID A breakthrough innovation that identifies sheep parasite species to the genus level by analysing the shape, size, and structure of eggs. This world-first test replaces traditional larval cultures by using the FECPAK Micro-I 300 to capture images and apply egg morphology for genus identification. It delivers Worm ID results with over 90% accuracy within 1 business day.

HOW IT WORKS

Collect sample → Prepare slurry → Capture images → Upload submission → Receive results (Within 1 business day)

- **Target treatment:** Know which parasites are present so you can provide appropriate treatment and parasite management advice
- **Save clients' money:** By using the right treatment at the right time
- **Manage resistance:** Informed decisions reduce resistance pressure and prolong drench efficacy
- **Fast turnaround:** Respond quickly with results within 1 business day. Don't wait 10-14 days
- **Maximise animal performance:** Healthier animals maximise on farm profitability

Need more information?
Contact the helpful FECPAK team at:

1800 573 247
hello@fecpak.com

FECPAK

Accelerating Sheep Roundworm Diagnosis: Image-Based Morphological Identification of Strongyle Eggs as a Fast, Scalable Alternative to Larval Culture

International Sheep Veterinary Congress
30th-31st of October 2025

Amirreza Zarekarizi [1], Hannah Mitchell [1], Stacey McGregor [1], Hannah Neville [1], Greg Mirams [1]

[1] Techion Group Ltd

Introduction

Accurate parasite identification is essential for effective animal health management [4]. The current standard for parasite identification involves **larval culture (LC) followed by expert parasitologist analysis**. Larval culturing is often associated with several limitations, such as a **7–14 day cultivation time**, **variable rates of hatch success**, **inequality of L3 development in each genus**, and a **shortage of trained parasitologists**. These issues often lead to delays in diagnosis, compromised parasite control strategies, and inaccurate or incomplete data when cultures fail [2].

To overcome these constraints, **Techion** has developed a new image-based diagnostic method that identifies strongyle eggs to the genus level based on their size and morphological features (Fig. 1). This new system has been named **Egg Genus Identification**. Genera identified using this method are *Haemonchus*, *Trichostrongylus*, *Ostertagia/Teladorsagia*, *Cooperia*, and *Oesophagostomum/Chabertia*. *Oesophagostomum* and *Chabertia* are grouped as they are difficult to distinguish in both the egg and L3 larvae stages [3].

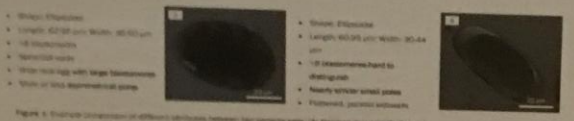


Figure 1. Example comparison of different attributes between two parasite eggs: (A) *Haemonchus* and (B) *Oesophagostomum*.

Figure 2. Micro-I 300 device.

Using a morphology-based approach offers a faster turnaround, improved reliability, removes larvae development inequality, and reduces dependence on parasitologist expertise.

This method uses the newly developed Micro-I 300 imaging system, created by **Techion**, to capture high-resolution images directly from faecal samples (Fig. 2).

Ultimately, Egg Genus Identification enables quicker and more accurate parasite diagnostics, enhancing decision-making and improving animal health outcomes in livestock systems.

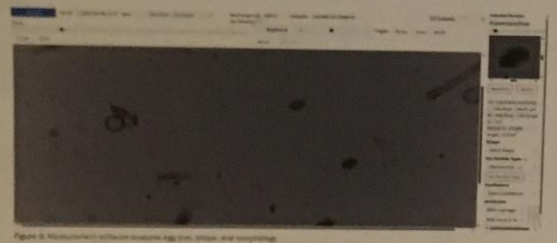


Figure 3. Measurement software locations egg size, shape, and morphology.

Egg Genus Identification is performed using a bespoke cloud-based software developed by Techion (Fig. 3). It allows the measurement and evaluation of morphological attributes of eggs and classification using specially developed decision trees, enabling automated genus-level identification from high-resolution images.

Methods

Sheep faecal samples (n = 27) were prepared following the method described by Francis & Silapeta (2022), adapted from the FECPAK protocol [4] (Fig. 4). Eggs were isolated using Techion's patented particle accumulation technology and then concentrated onto a coverslip via flotation for image capture. High-resolution images were taken using Techion's Micro-I 300 imaging platform. Morphological attributes (width, length, shape, and internal structures) were extracted by custom measurement software to classify the genus. Results were compared to LC outcomes using both prevalence percentage and predominance classification, with 1 being the most prevalent genus and 5 the least prevalent.

Figure 4. Washed pellets re-suspended from the wall of a FECPAK cassette to enable eggs for image capture.

Results

A strong positive correlation was observed between LC and Egg Genus Identification methods across all major nematodes. Correlation coefficients for percentage data ranged from 0.66 to 0.88, with ***Haemonchus*** (r = 0.88), ***Cooperia*** (r = 0.85), ***Oesophagostomum/Chabertia*** (r = 0.78), ***Trichostrongylus*** (r = 0.70) and ***Ostertagia/Teladorsagia*** (r = 0.66) showing varying levels of agreement (Fig. 5). Rank-based correlations followed similar patterns, with ***Haemonchus*** (r = 0.87)., ***Cooperia*** (r = 0.76), ***Ostertagia/Teladorsagia*** (r = 0.75), ***Oesophagostomum/Chabertia*** (r = 0.72) and ***Trichostrongylus*** (r = 0.68) demonstrating consistent alignment.

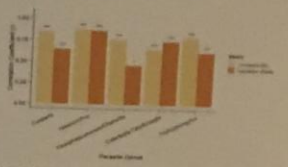


Figure 5. Correlation between LC and Image-based Egg Genus Identification methods across five genera; all correlations significant ($p < 0.05$).

All correlations were statistically significant ($p < 0.05$), supporting the robustness and consistency of morphology-based Egg Genus Identification as a reliable alternative to LC for parasite egg identification (Fig. 5).

Heat maps show consistent detection patterns between LC and Egg Genus Identification methods, with variable concordance in percentage, with the highest alignment observed for *Haemonchus*, *Ostertagia/Teladorsagia*, and *Trichostrongylus* (Fig. 6).
Rank-based analysis showed consistently strong agreement across all genera, underscoring the reliability of the Egg Genus Identification method (Fig. 7).

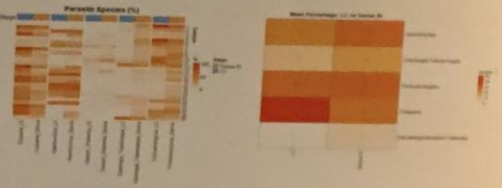


Figure 6. Heatmaps of Prevalence Percentages. A) LC and Egg Genus Identification (Genus ID) percentages for all 27 samples across five parasite genera. B) Mean percentage values per genus, comparing both methods.

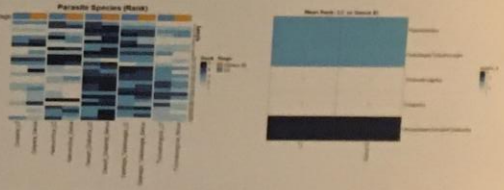


Figure 7. Heatmaps of Prevalence Ranks. A) LC and Egg Genus Identification (Genus ID) rank-based prevalence (1 = most prevalent, 5 = least prevalent) for each genus in 27 samples. B) Mean rank scores highlighting method agreement by genus.

Conclusion

Strong positive correlations between LC and Image-based Egg Genus Identification confirm the robustness of this new diagnostic tool. This morphology-driven method offers a faster, field-deployable alternative for parasite identification in sheep, supporting timely, accurate, and informed treatment decisions.

Next Steps

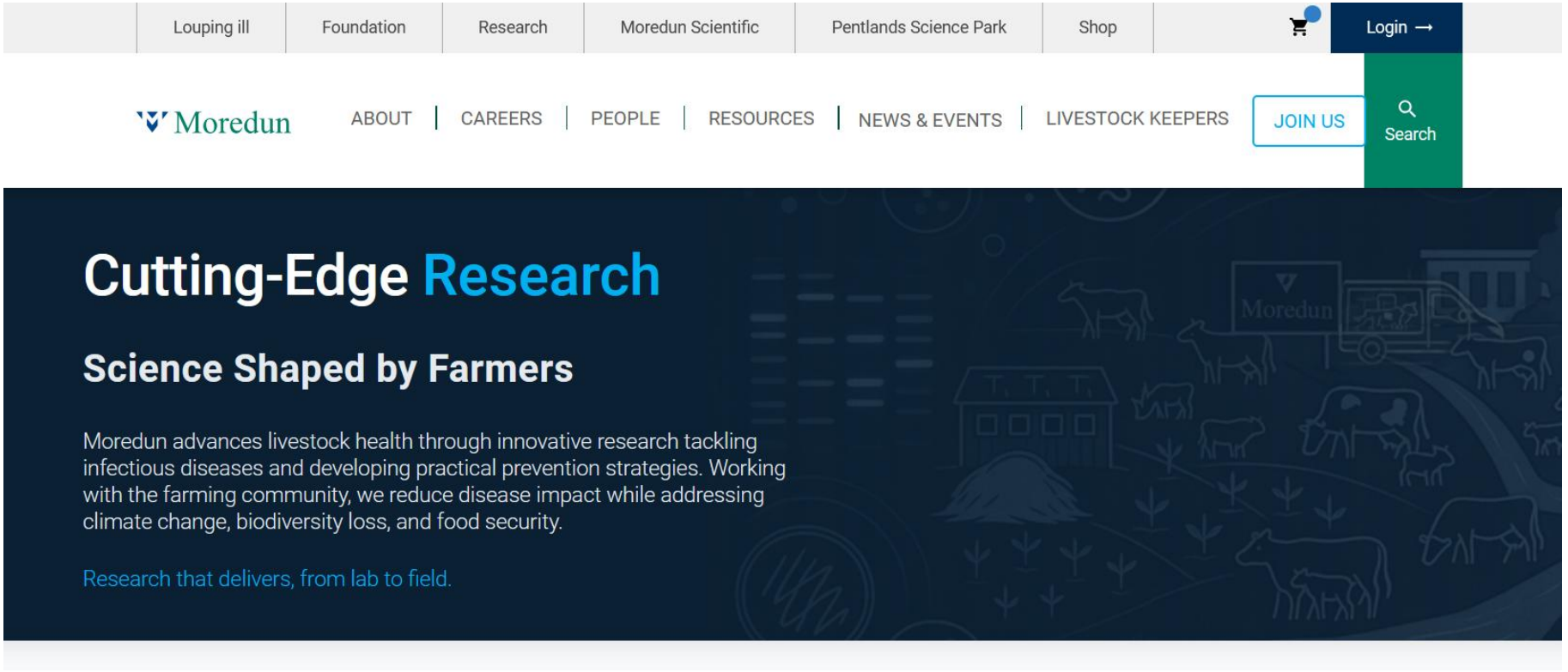
PCR Validation: We are conducting PCR-based parasite identification to molecularly validate and cross-check findings from LC and Egg Genus Identification
Commercial Delivery: We are preparing for delivery of a robust, field applicable diagnostic solution based on results from ongoing validation
Cattle Parasite Genus Identification: Development is underway to extend the platform's capabilities to include genus identification of strongyle eggs in cattle.
AI Model Development: We are preparing the first stages for AI model development, to allow for the automated identification and classification of eggs

Techion
TECHNOLOGY IN ACTION
TECHON.COM

Acknowledgements

References

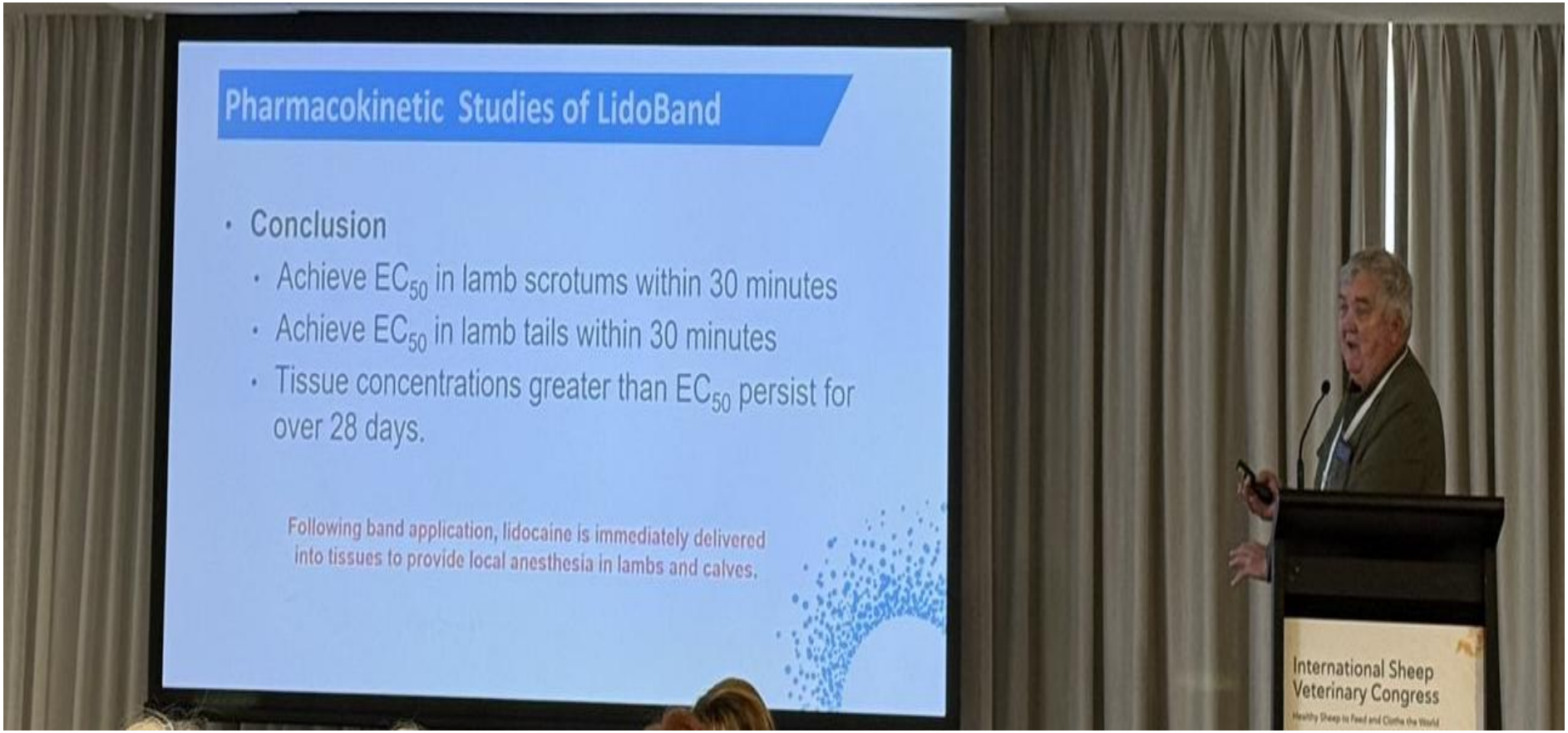
Moredun working on vaccines for *Trichostrongylus* and *Telodorsgia* worms



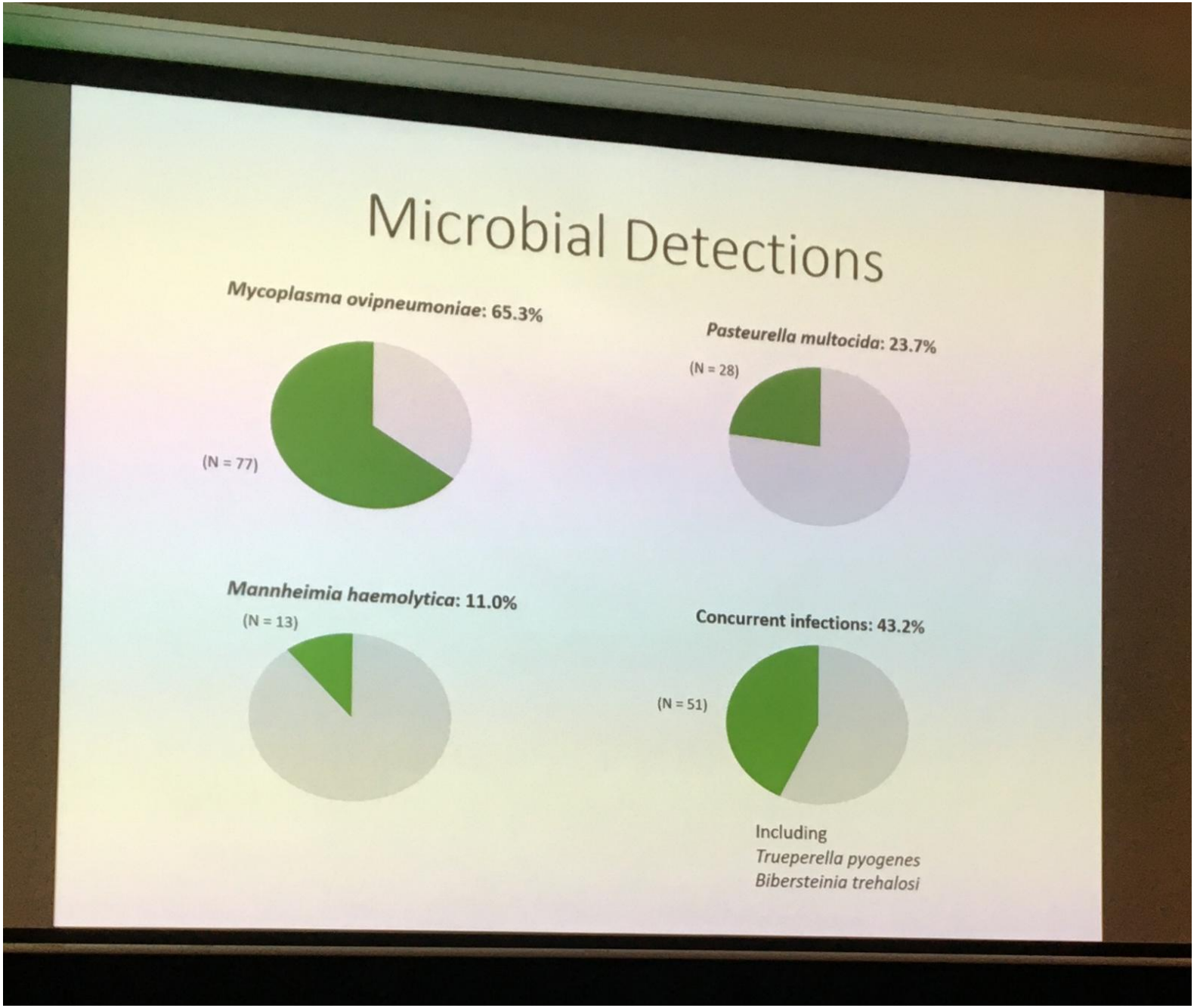
Elastrator rings coated with local anaethetic

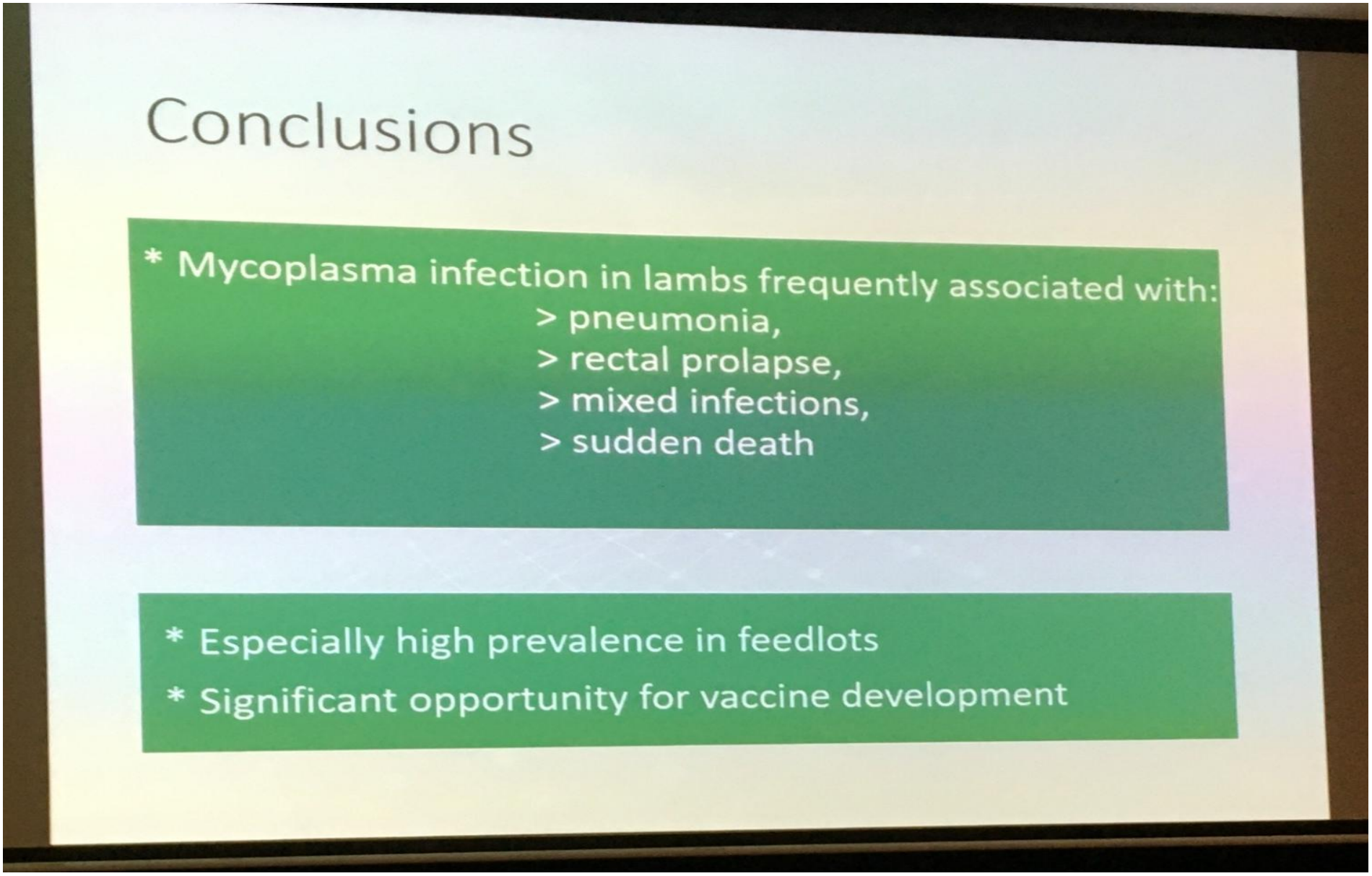
Lidoband in blister packs ready to use

LidoBand but takes 20-30 mins to work



Preventing sheep pneumonia


Microbial Detections
Mycoplasma ovipneumoniae: 65.3%
(N = 77)
Pasteurella multocida: 23.7%
(N = 28)
Mannheimia haemolytica: 11.0%
(N = 13)
Concurrent infections: 43.2%
(N = 51)
Including
Trueperella pyogenes
Bibersteinia trehalosi



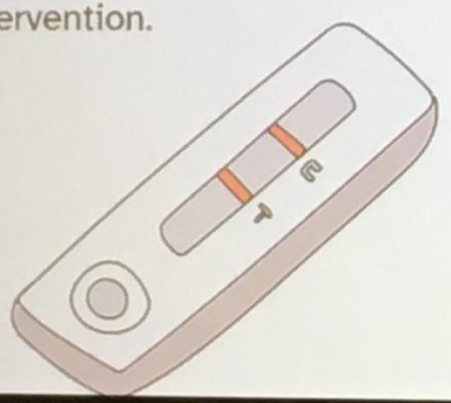
Interest in a sheep mycoplasma vaccine

PNEUMONIA RAPID IN FEILD TEST

Why Develop a Rapid In-Field Test for Sheep Pneumonia?

🔍 Diagnostic Gaps

- Current lab diagnostics are slow and often miss fastidious pathogens like *M. ovipneumoniae (MOP).*
- Culture success is low → limiting diagnostic value and delaying intervention.



🧪 **What We Found**

- M. ovipneumoniae detected in 61% of pneumonia cases
- In 38.9% of PCR-positive cases, it was the sole pathogen
- Field evidence points to a significant but underdiagnosed role in respiratory disease

✅ **Our Solution: A Rapid Lateral Flow Assay (LFA)**

- Detect *M. ovipneumoniae* in minutes from nasal or lung swabs
- Enable real-time flock-level decision-making

BROADER BENEFITS

- Supports targeted treatment and reduces unnecessary antimicrobial use
- Facilitates vaccine development
- Enables research into:
  - Carrier state dynamics → which animals harbor infection?
  - Can shedding be reversed with treatment or management changes?

mary.mcquillan@adelaide.edu.a

LIVESTOCK SA

SA SHEEP INDUSTRY FUND

Umbirez NBS

Methods: NBS was used alternately with strong iodine solution on the navel and ear tag sites of **6840 lambs** born to eleven UK commercial sheep flocks, that lambed indoors in 2024 and where data recording was already routine on farm.

Outcome: Mortality up to 56 days old differed significantly (X^2=8.24; p = 0.004) between NBS lambs (6.5%) and iodine lambs (8.3%) with an especially marked difference in survival rate over the first four days of life. Mortality ratio was 1:1.28. Of the lambs that survived and were weighed both at birth and at approximately 56 days (*n* = 3385), the **daily weight gain** differed significantly (*p* = 0.02) with a weight difference at 56 days of 0.36 kg in favour of NBS. For 517 pairs of twin lambs, linear regression indicated a weight difference of 0.49kg in favour of the NBS lambs (*p* = 0.008). Mortality in the lambs with **dipped navels** was significantly lower than those with sprayed navels (*p* = 0.017).

Conclusion: Optimal navel and ear tag site applications during lambing efficiently protects against neonatal deaths. NBS is superior to strong iodine and dipping outperforms spraying.

Dip don’t spray

Note NoBACZ Navel is retailed as UMBIREZ™ in all countries outside of the UK & Ireland.

Goats 101 for veterinarians

Sandra A Baxendell, goatvetoz

Background: Many goat owners have trouble accessing veterinary help for their goats as their local vets only see dogs and cats. This is becoming a serious animal welfare issue, especially as miniature breed goats are becoming popular in semi-urban areas.

Objectives: The aim is to provide basic information to small animal veterinarians to encourage them to provide care for the goats in their communities. Veterinarians have many transferrable skills that just need some slight adjustments to successfully treat goats.

3 videos of my talk (which was in 3 parts) are on here
https://goatvetoz.com.au/conference

A Small Animal Vet can set up to see goats for under $1000

16	Ferron 200+ B12	31	Provet
17	**Subtotal**	653	
18			
19			
20	**Equipment**		
21	Tape measure & free cm to kg chart	2	
22	Single dose drench guns - 20 ml and 30ml	50	Shoof International
23	Embyrotomy wire	32	Provet
24	Handles for wire	0	handmade
25	Lambing ropes	0	old conference lanyard or soft ropes
26	Foot shears	35	Shoof International
27	Kid stomach tube	13	Shoof International
28	adult stomach tube	5	Bunnings plastic tubing handmade
29	Adult stomach tube gag	0	Made from old syringe with end cut off or roll from middle of eleastoplast
30	FAMACHA card	30	ANZCVS Small Ruminant Chapter
31	Plastic door stop to examine teeth	5	Bunnings or inside of elastoplast bandage
32	Spray bottles of Betadine for similar for t	5	Bunnings
33	Elastrator applicator	30	www.fmb.com.au
34	Head light	40	www.bcf.com.au
35	5 F Angiographic catheter	15	https://www.dotmed.com/listing/disposables-general/cordis/srd6906/special-angiographic-catheter-5f-65cmx/3332020?utm_source=base&utm_m
36	McMasters Worm egg counting chamber	40	https://www.vetslides.com/2-chamber-slides
37	**subtotal**	302	
38	**Grand Total**	955	
39			
40	**Nice to have equipment -although alternative can be hand-made**		
41	Bosch 3.6V Cordless Secateurs Pruner	105	https://www.amazon.com.au/Bosch-Secateurs-Technology-Integrated-Rechargeable/dp/B0BTTLS5B2/ref=asc_df_B0BTTLS5B2?mcid=54aea064a0b

Sheet1

Goats 101

Sandra A Baxendell
Goat Veterinary Consultancies- goatvetoz

Introduction

Many goat owners have trouble accessing veterinary help for their goats as their local veterinarians only see dogs and cats. This is becoming a serious animal welfare issue, especially as miniature breed goats are becoming popular in semi-urban areas. With some basic information, veterinary medicines and tools, small animal veterinarians can provide care for the goats in their communities. This will cost less than $1000.
Veterinarians have many transferrable skills that just need some slight adjustments to successfully treat goats.

Basic Extra Tools

Single dose drench guns – costs around $20-30
Bathroom scales, tape measure and cm to kg chart
Foot trimmers e.g. rose trimmers from Bunnings
Stomach tubes for adults and kids
Lambing tool or soft ropes
FAMACHA© card
Quick release collar & strong lead
Embryotomy wire
McMasters Egg Counting Chamber

Stomach tube –Adult above kid on right

Llambng tool on left, feet trimmers o=above

The chart converting cm to kg is on www.goatvetoz.com.au/worms

Basic Extra Medicines

Combination sheep worm drench for non-milking goats e.g. 1 L of Qdrench and a drench for milking goats e.g. a white drench e.g. 250 ml Worma Drench® &/or 1L Kilverm (levamisole)
Copper Oxide Wire Particle boluses for *Haemonchus* control with Panacur or copper deficiency
Meloxicam (can use dog meloxicam)
Sulpha injectable antibiotic or Toltrazuril e.g. Baycox
Bottle of Oxytetracycline
Prostaglandin
Xylazine 20
Obstetrical lubricant (KY jelly will work)
Vaccine best for district e.g. Glanvac 3 or 6

Copper Oxide Wire Particle boluses .

Glanvac® clostridial vaccine

Basic Goat Information

Rectal temperature is 39.5 degrees C plus or minus 0.5.
Normal respiratory rate is 10-30 per minute
Normal pulse is 70-95 per minute
Goats metabolise veterinary medicines more rapidly than sheep or small animals so need higher dose rates or more frequent dosing.
Anthelmintics need to be given at higher doses rates than the sheep label instructions. i.e. double for benzimidazoles and monepantel and 1.5 times for levamisole. Qdrench is therefore 1.5 times as it contains levamisole.
Goats need vaccination more frequently than sheep – a minimum of every 6 months, more often if fed a lot of grain.
Goats do best with the minimum number of vaccines needed so use Glanvac 3® rather than Glanvac 6®, unless cases of the other clostridial diseases are likely. This will also reduce the size of the vaccine reactions; often large in goats.

Normal goats – no treatment needed

Enlarged thymus gland in well grown kids or "milk goitre"

Dairy breed unmated kids with well developed udders – leave alone unless dripping milk & only then milk daily

Dairy breed buck producing milk – he is still fertile

Contact

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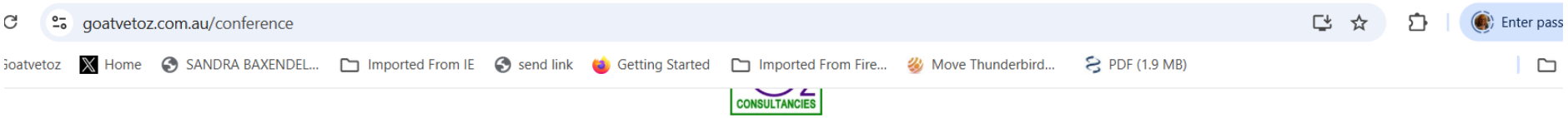

CONSULTANCIES

SMART OWNERS, HEALTHY GOATS

POWERPOINTS USED AT THE CONFERENCE

These PowerPoints may change before the ISV Conference

Questions about goats (pdf)	Download
Goats 101 (pdf)	Download

DOWNLOADS

Resources used for the International Sheep Vets Conference 2025

Rapid Mastitis Test recipe (docx)	Download

goatvetoz.com.au/conference

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What do small animal vets need to treat goats

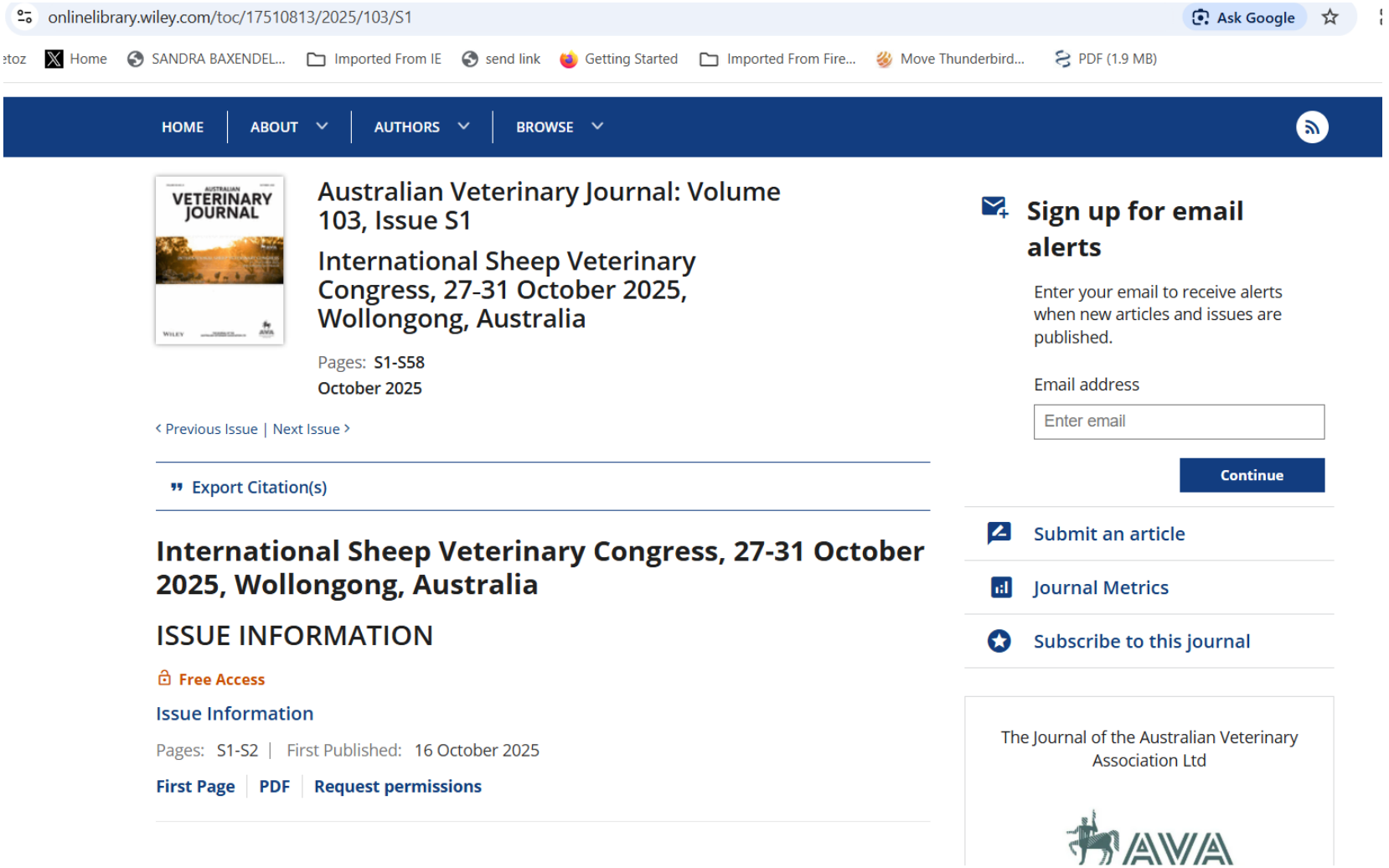
Goat owners often have difficulty in finding a vet that will see their goats

What is normal for goats

This video discusses what is normal for goats and how they differ from sheep & cattle.

Goat Veterinary Consultancies - goatvetoz

https://onlinelibrary.wiley.com/toc/17510813/2025/103/S1



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Only AVA members can read more than just list of titles

International Sheep Vet Conference Questions ?

Not Used

Table 1: The key differentials, associated clinical features, and the rationale for ruling in or excluding each condition.

Clinical sign/history	Possible differential diagnoses	Reason ruled in/out
High fever, nasal discharge, oral necrotic ulcers	PPR, FMD, Bluetongue, Orf	PPR supported by necrotizing stomatitis and rapid systemic spread; FMD unlikely due to absence of foot/teat lesions; bluetongue unlikely due to no tongue cyanosis or insect vector exposure; orf ruled out as lesions were ulcerative, not proliferative.
Profuse foul-smelling diarrhea	PPR, Salmonellosis, Coccidiosis, Parasitism	PPR likely with concurrent mucosal lesions and systemic illness; coccidiosis and parasitism less likely due to sudden onset and severe mucosal necrosis.
Tachypnea, mild respiratory signs	PPR, CCPP, Pasteurellosis	CCPP unlikely due to absence of pleuritic pain, fibrinous pleural exudate, and herd outbreak signs.
Rapid progression in unvaccinated goat	PPR, Salmonellosis, FMD	PPR favored as unvaccinated herd member and classic disease course; FMD not supported by lesion pattern or spread to other animals.
Lymphadenopathy	PPR, Systemic bacterial infection	PPR most consistent due to concurrent viral stomatitis and systemic signs.

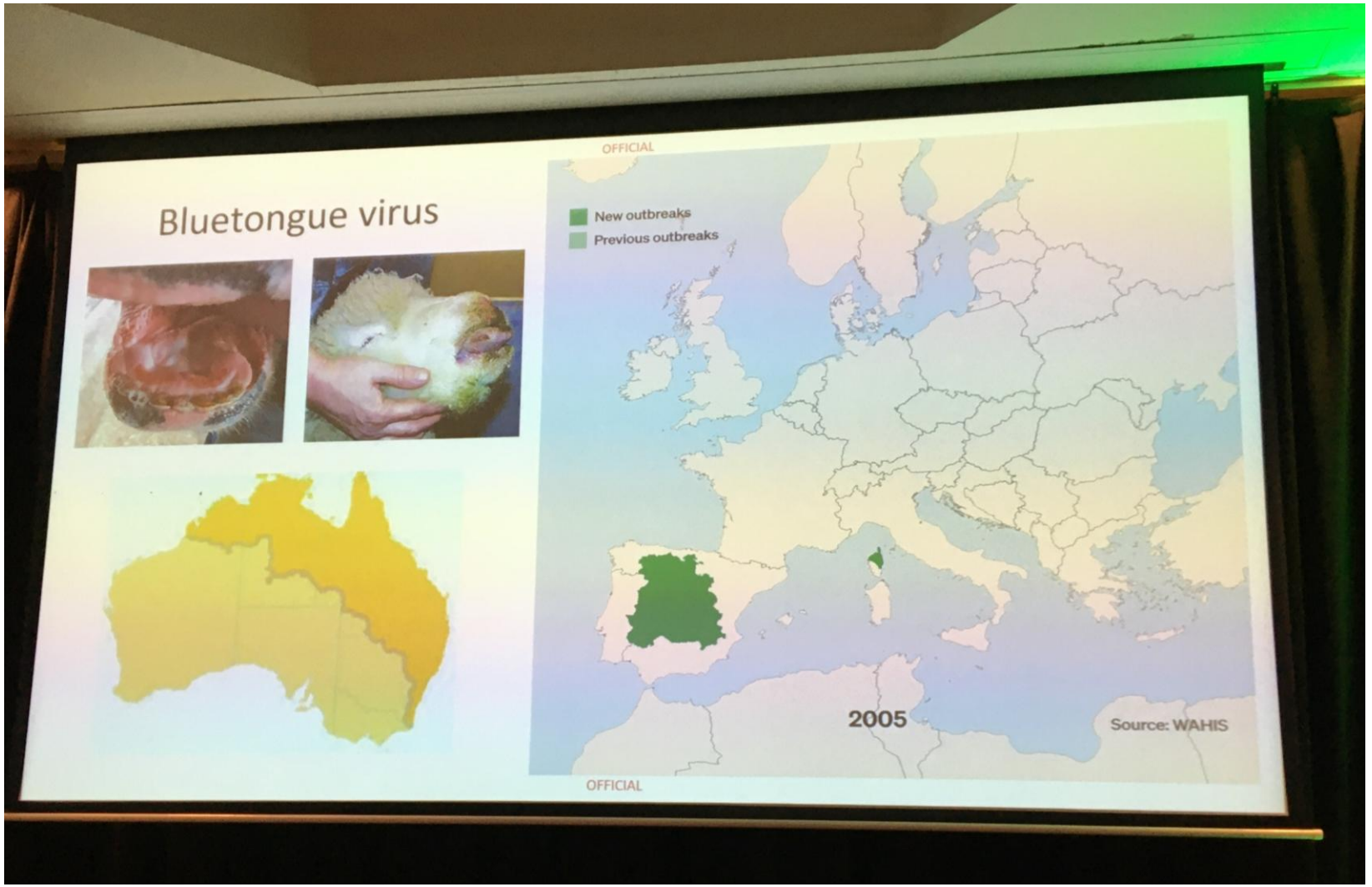
FMD: Foot-and-mouth disease, PPR: Peste des petits ruminants, CCPP: Contagious caprine pleuropneumonia

Effects of castration and rearing method on weight gain of dairy goat kids

Methods: In 2023, 100 kids were castrated with Burdizzo forceps under general and local anaesthesia or left entire (not castrated). All 100 kids were reared on extensive pasture. In 2024, the weight development of 100 male kids was tracked. 22 died mainly after weaning due to clostridiosis. 34 kids were reared indoor and 33 on pasture. 36 kids were castrated using Burdizzo forceps and 31 were immunised against GnRH by Improvac®. Nine kids remained uncastrated.

Results: In 2023 weight gain of both groups was in parallel and did not differ significantly at any time. Uncastrated animals tended be heavier than the castrated kids. A group of 9 uncastrated animals reared indoor had the highest weight at slaughter with 39.8 kg. In 2024, the three groups did not have significantly different weights at the end of the fattening period (uncastrated 32.8±3.8 kg; Burdizzo 29.4±4.1 kg; Improvac® 29.0±4.5 kg). The uncastrated bucks raised indoor were the heaviest, the Improvac® vaccinated kids raised on pasture were the lightest.

Bluetongue spreading in Europe



AHDC
VETERINARY DIAGNOSTICS

Pinn T, Lejeune M, Duhamel GE, Thompson BS
Cornell University, Animal Health Diagnostic Center (AHDC)

Introduction

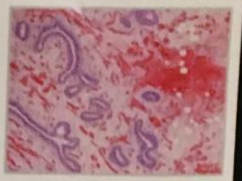
- Previous investigation by Japanese researchers linked *Strongyloides papillosus* hyperinfection to sudden death in weaned calves and lambs, and suggested sudden death is secondary to fatal arrhythmias, often without significant post-mortem findings.
- The New York AHDC at Cornell confirmed two outbreaks of sudden death in apparently healthy weaned dairy calves in New York associated with *S. papillosus* in 2018 and 2019.
- Similarities between outbreaks included:
  - Sawdust bedding
  - High environmental temperature and humidity
  - Precocious udder development characterized by ductal hyperplasia, congestion and hemorrhage histologically, with unremarkable necropsy findings
  - High prevalence of *S. papillosus* positive fecal samples in affected groups
  - Outbreaks ceased within 24 hours of treatment with doramectin pour-on
- *S. papillosus* is known to cause clinical signs of ill thrift and diarrhea in young ruminants, but these were the first reports in the United States describing an association with sudden death of weaned calves raised in confinement housing.

Abnormal Udder Enlargement in NY Outbreak Calves

Enlarged precocious udder of 3mo old calf infected with *S. papillosus*

Normal udder of 3mo old calf

Mammary gland ductal hyperplasia, congestion and hemorrhage seen histologically (right)



Gross congestion and hemorrhage within mammary gland of *S. papillosus*-infected calf (right)

Objective

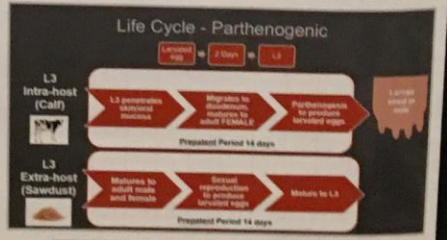
To further investigate the occurrence of bovine and ovine sudden death associated with *S. papillosus* in the United States.

Methods

Retrospective animal data, post-mortem and ancillary diagnostic results from ovine and bovine cases submitted to the AHDC with a history of sudden death and *S. papillosus* ova detection on fecal examination were evaluated from 2007 through 2019. NY outbreak cases were excluded.

Results

- 10 cases met the inclusion criteria (n=2 bovine; n=8 ovine)
- 2008 (n=1), 2012 (n=2), 2018 (n=1), 2019 (n=1)
- 5/10 cases had open post-mortem diagnoses and clinical presentations similar to those previously described in Japanese *S. papillosus* outbreaks (n-3 lambs; n=2 calves)
  - Juveniles 2-8m old
  - Time of year: August (n=1), October (n=4)
  - *S. papillosus* fecal egg counts ranging from 3,100 to 29,000 eggs per gram of feces (epg)
  - Location: New York state (n=4) and Massachusetts (n=1)
- 5/10 cases had definitive post-mortem diagnoses
  - Bronchopneumonia, *Clostridium novyii* hepatitis, listeriosis, haemonchosis, urolithiasis, abomasitis, meningitis and enteritis
  - *S. papillosus* egg counts ranging from 2 to 1,250 epg



Larvated *S. papillosus* eggs (left)

Conclusions

- *S. papillosus* should be considered a novel differential diagnosis for sudden death in weaned lambs and calves in the northeastern United States.