

66th EAAP Annual Meeting

Innovation in Livestock Production: from ideas to practice

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Integrating EID in hill farming management

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Outline

- Overview: EID & hill farming
- Examples of applications on hill farms
- EID & farmers - uptake
- Concluding remarks



EID – Electronic Identification

- Introduced 1980s – tracking movements
- EID – now introduced for small ruminants
- UK: compulsory since 2010

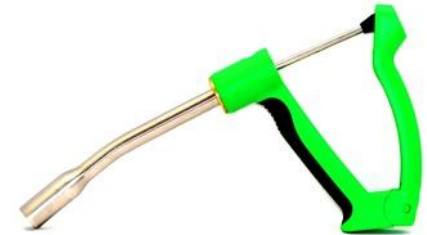


EID – Electronic Identification

- RFID
- Various forms



Sheep EID bolus
(with black tag)



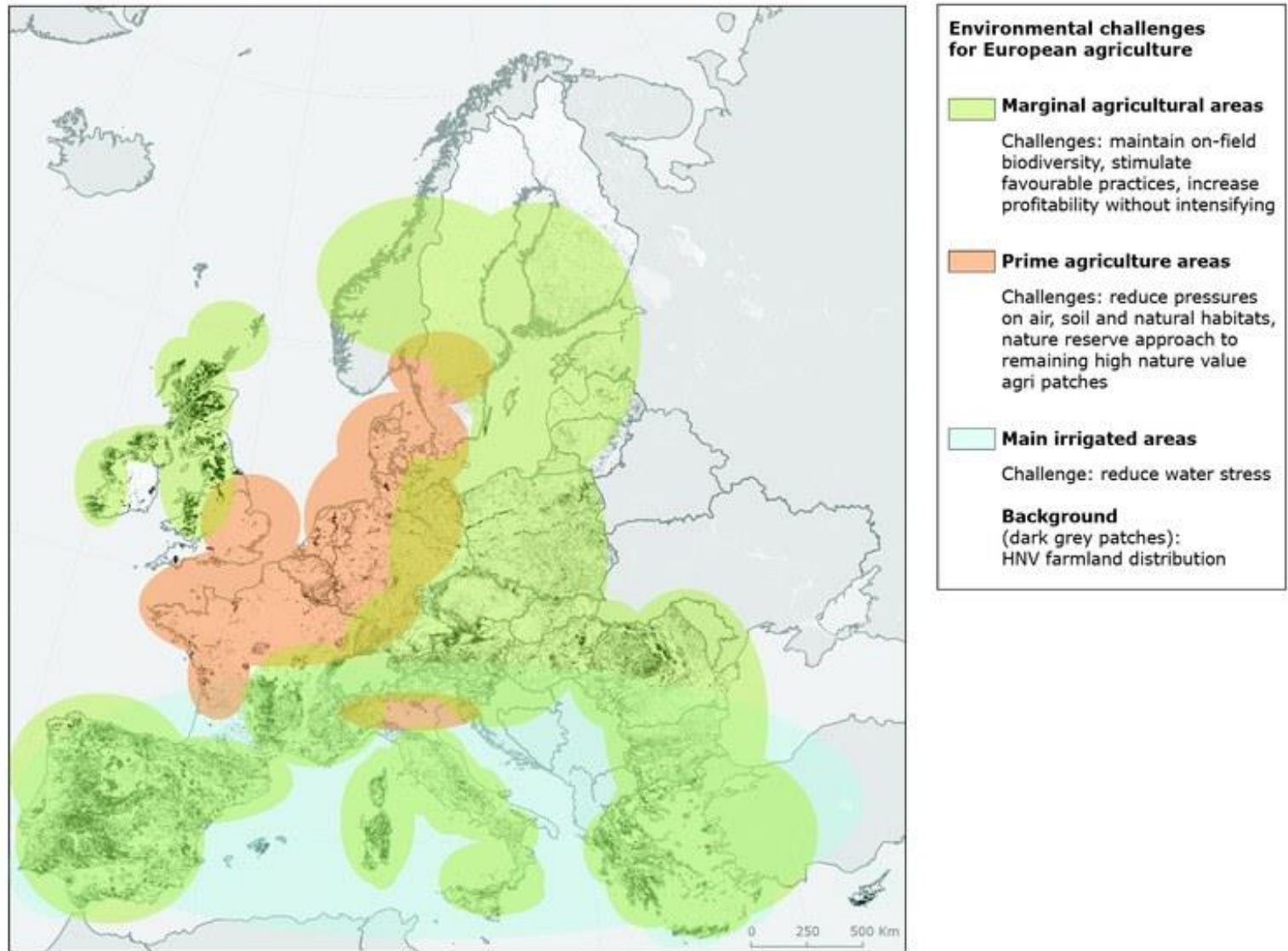
Implants



EID ear-tags +
applicators



Marginal Areas/Hill farming



Hill farming in UK/Scotland

- Marginal land/poor land
- Large size flocks (>1000), low stocking density
- Labour critical
- Economically fragile, reliance on subsidies



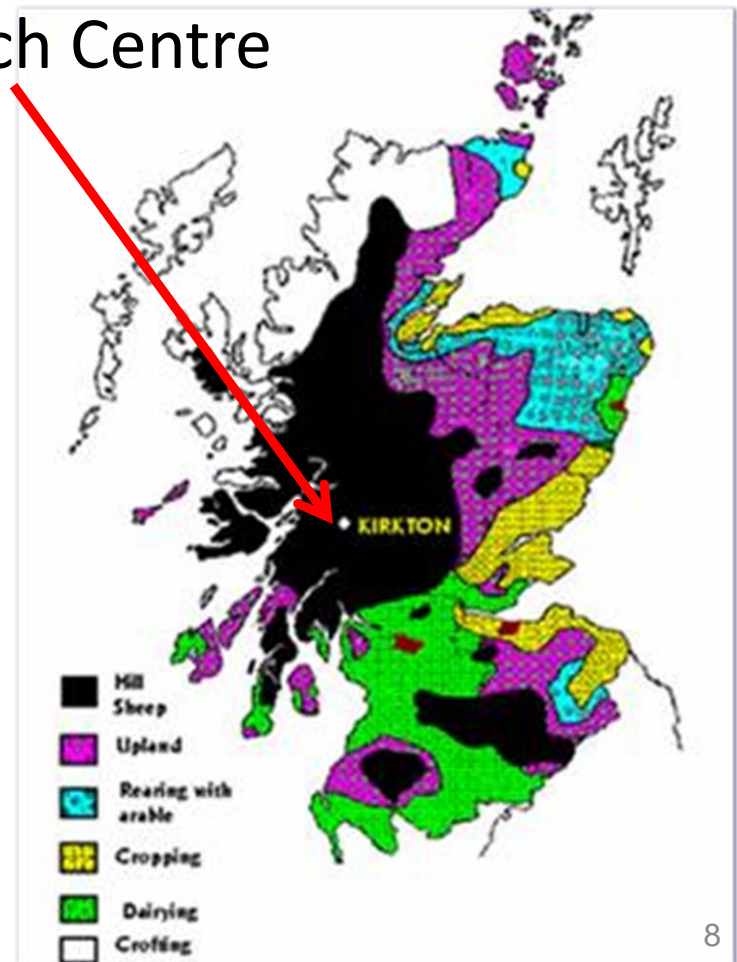
Hill farming in UK/Scotland

High nature value, importance for rural landscape/economy



How to integrate EID on a hill farm?

- Example at experimental hill farm
 - SRUC Hill & Mountain Research Centre
 - In marginal areas of Scotland



How to integrate EID on a hill farm?

- Example at experimental hill farm
 - SRUC Hill & Mountain Research Centre
 - In marginal areas of Scotland
 - 1300 sheep
 - 2200 ha – most of it hill land
- Series of measures implemented to demonstrate feasibility



The research



2 management systems 900 sheep

Conventional
Non-EID managed

EID-based
EID managed



**Based on shepherd's
condition assessment
+ scan result (>Feb)**

**Based on % weight change
+ scan result (>Feb)**



**Whole flock approach
- pooled FEC**

**Labour recording
at each task**

**Worming
weight change**

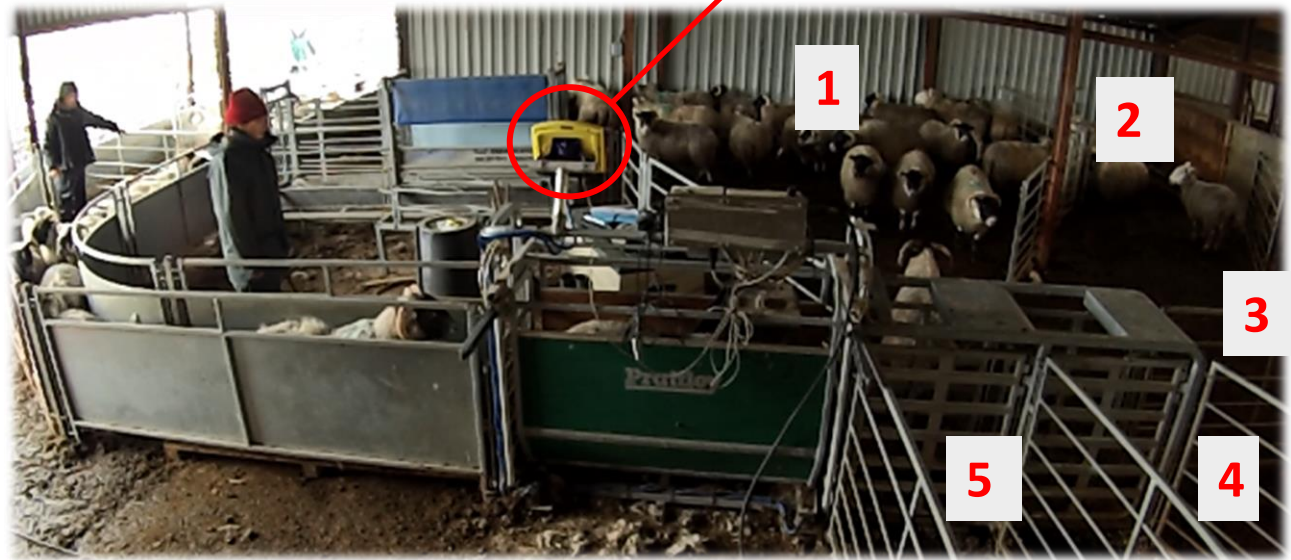


Sold after 4 crops

No culling on age

EID technology used

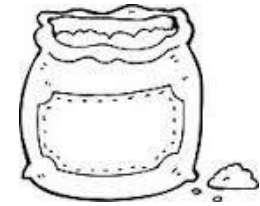
- Automatic weigh-crate (5 ways-shedder)
- Tru-test weigh head



- EID ear-tags
- Handheld readers
- Farm management software



Winter Feeding



CON

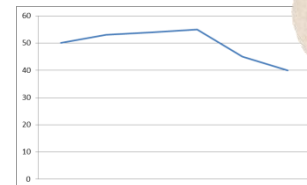
Shepherd assigns feeding groups based on ewe condition

Standard Feeding

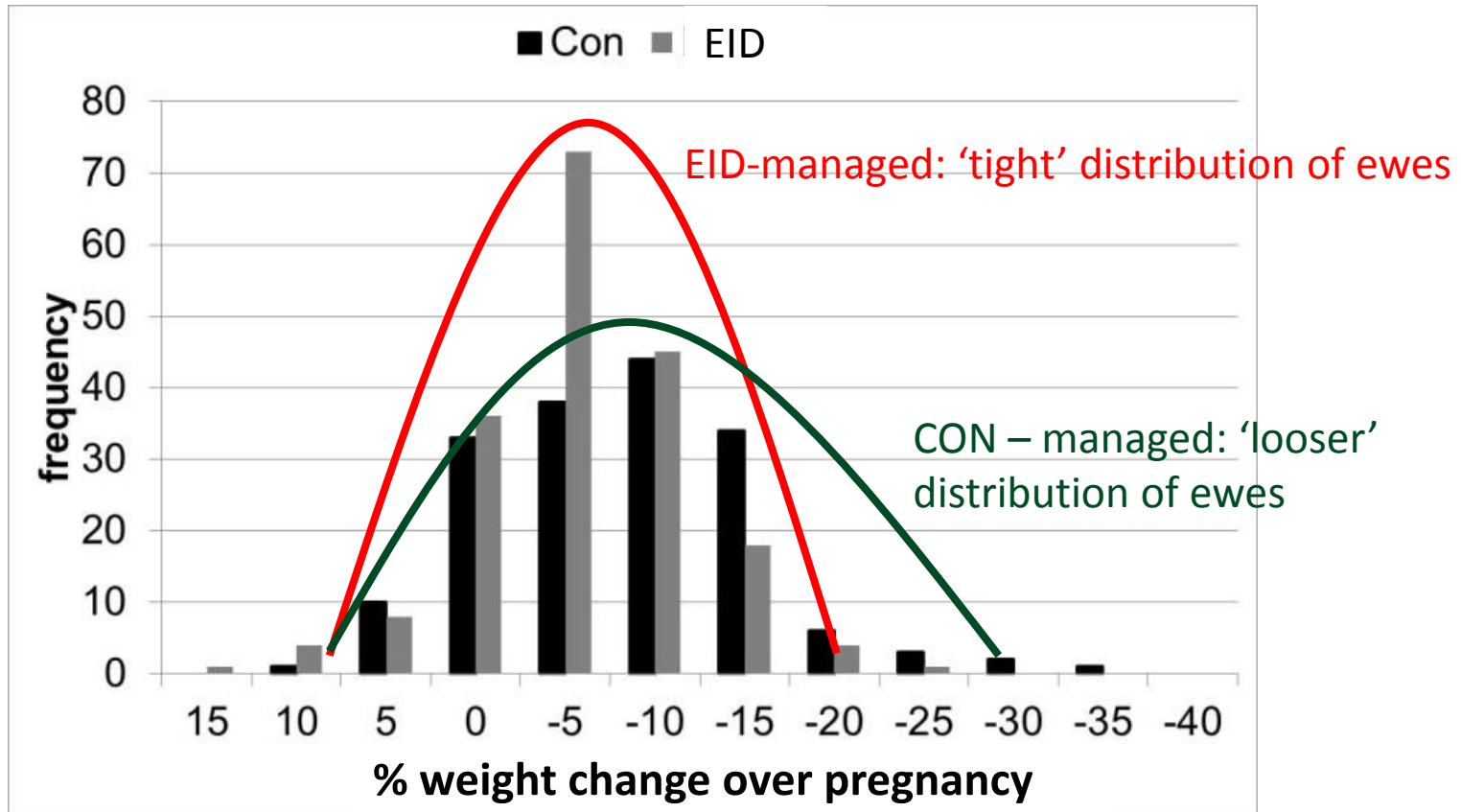
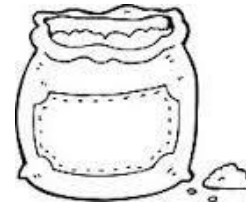
Corrective Feeding

EID

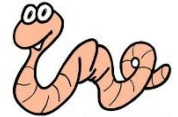
Technology assigns feeding groups based on individual weight change



Winter feeding



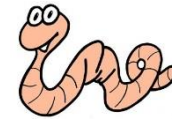
Targeted Worming



- Collaboration with Moredun Research Institute
- Only worm lamb that do not thrive:
 - ⇒ better for animal
 - ⇒ dilute resistance to anthelmintics
- Compare target weight (algorithm) with actual weight
 - ≥ target weight: no dose
 - < target weight: dose



Experiment



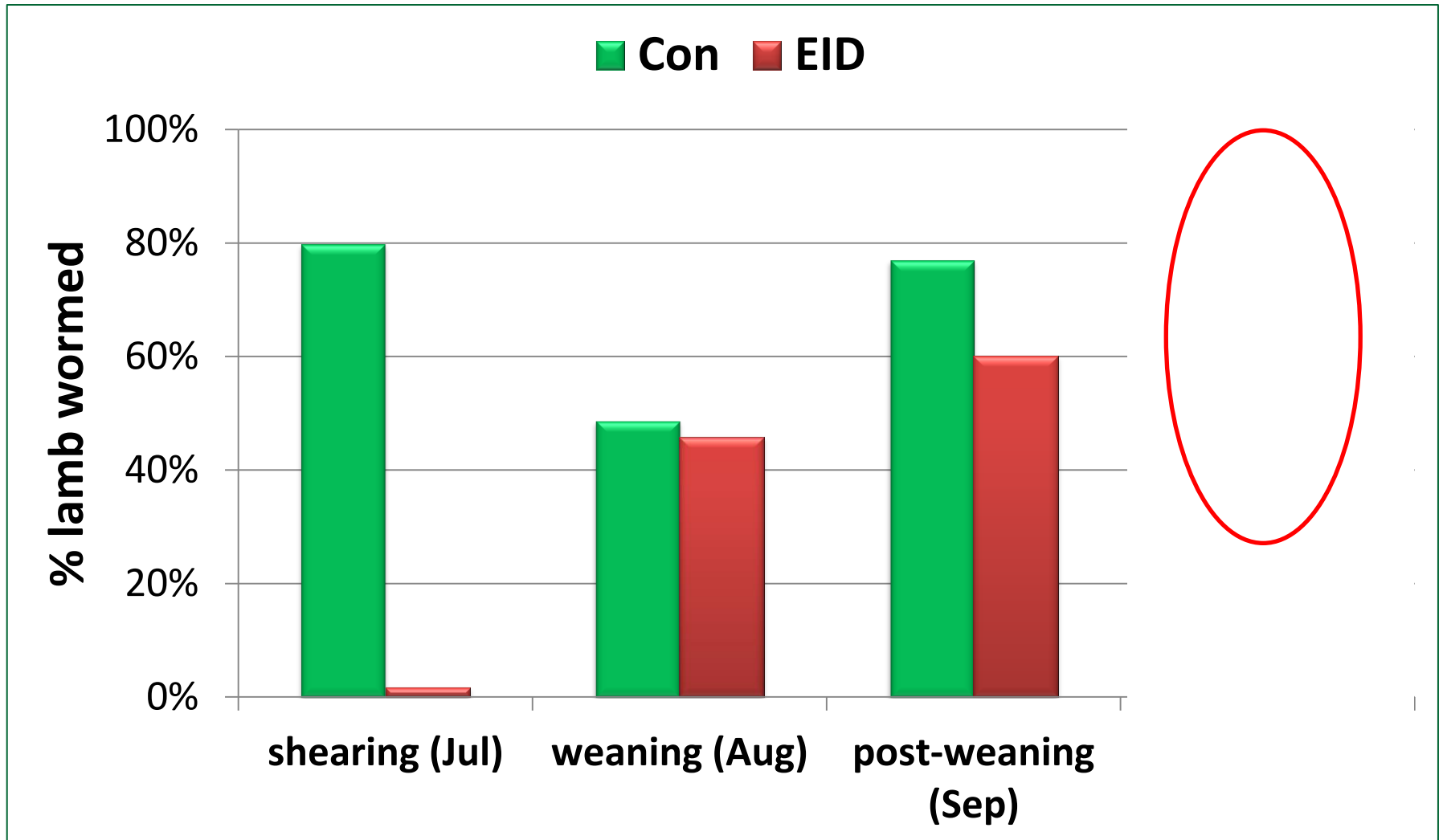
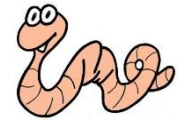
~450 Scottish
Blackface



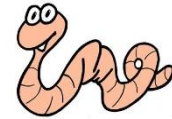
~310 Lleyne

- 8 weeks (June) – all lambs wormed/weighed
- Monthly (until 1 month after weaning) – Targeted worming

Results over 2 years (2013-2014)



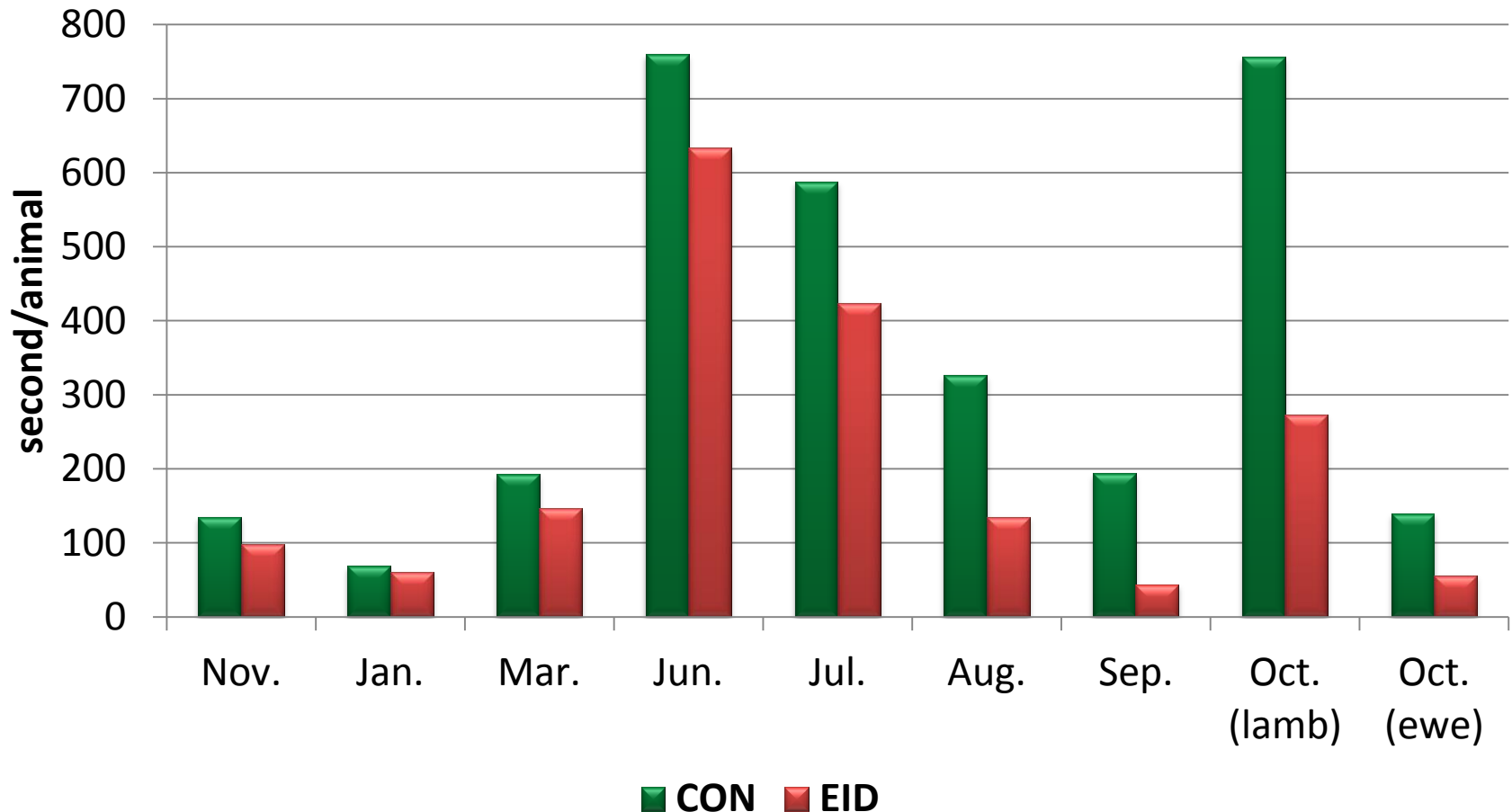
Labour & costs: for 100 lambs



	Worming costs	Labour	Labour costs	Total costs
2013				
Con	£63			
EID	£13			
2014				
Con	£79			
EID	£13			

On-farm labour savings

Yearly labour use



Uptake by farmers

- 2 surveys of farmers
 - 1 at agricultural shows
 - 1 online
- Workshop with farmers, advisors, industry



Survey at shows

- 115 answers
 - 29% have...
 - 2% have...

Main barriers:

- Cost of equipment
- Lack of financial help
- Wary of technology

SRUC RESEARCH

Q1. Are you a: Hill Farmer Lowland Farmer Non-Farmer

Q2. Have you got: mainly sheep mainly arable crops mainly cattle both

Q3. Do you think new technology can help management? Yes/No/don't know

Q4. Do you think that electronic ID can be used as a management tool? Yes/No

Q5. (FARMERS ONLY) Do you have a...
...er on your farm?
...ale
...nating
...
...to farmers if?

Q7. In your opinion, what is the best way to convince people these management systems work?
Face to face meetings
Active demonstration
Farming press
Internet/online video

DVD & Online survey

- DVD
- YouTube
- Online survey



<https://www.youtube.com/watch?v=PJO7-3XSsIU>

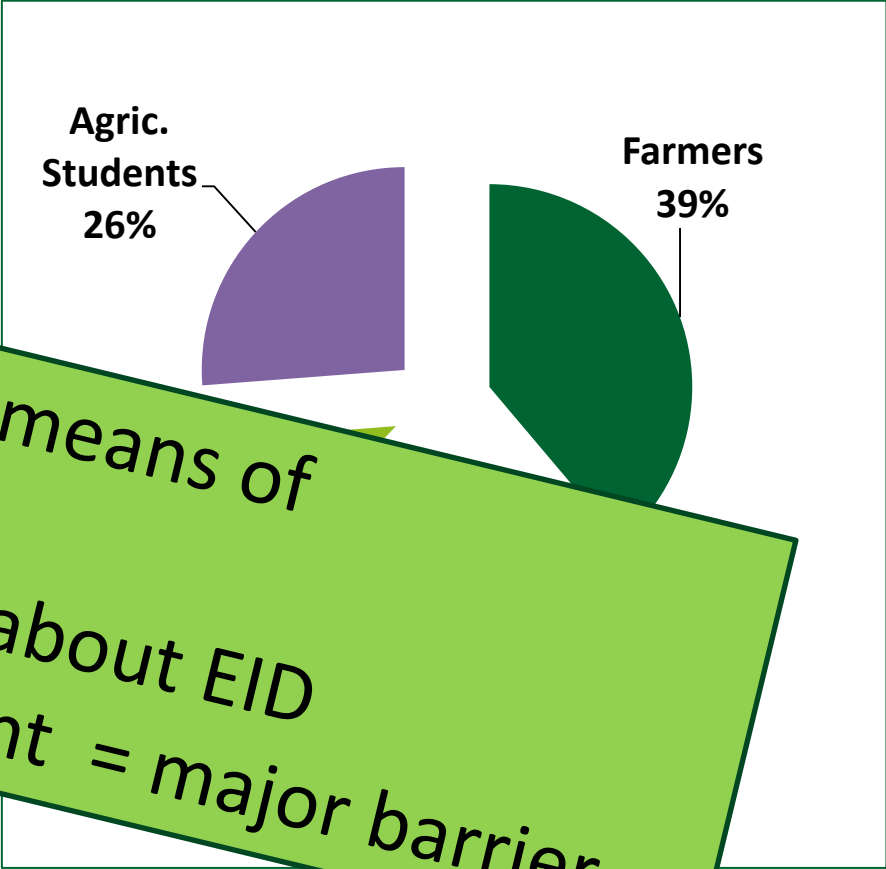
Online survey

- 103
- 96
- be
- management

• Video = useful means of communication

• People positive about EID

• Cost of equipment = major barrier



Before



73%



5%



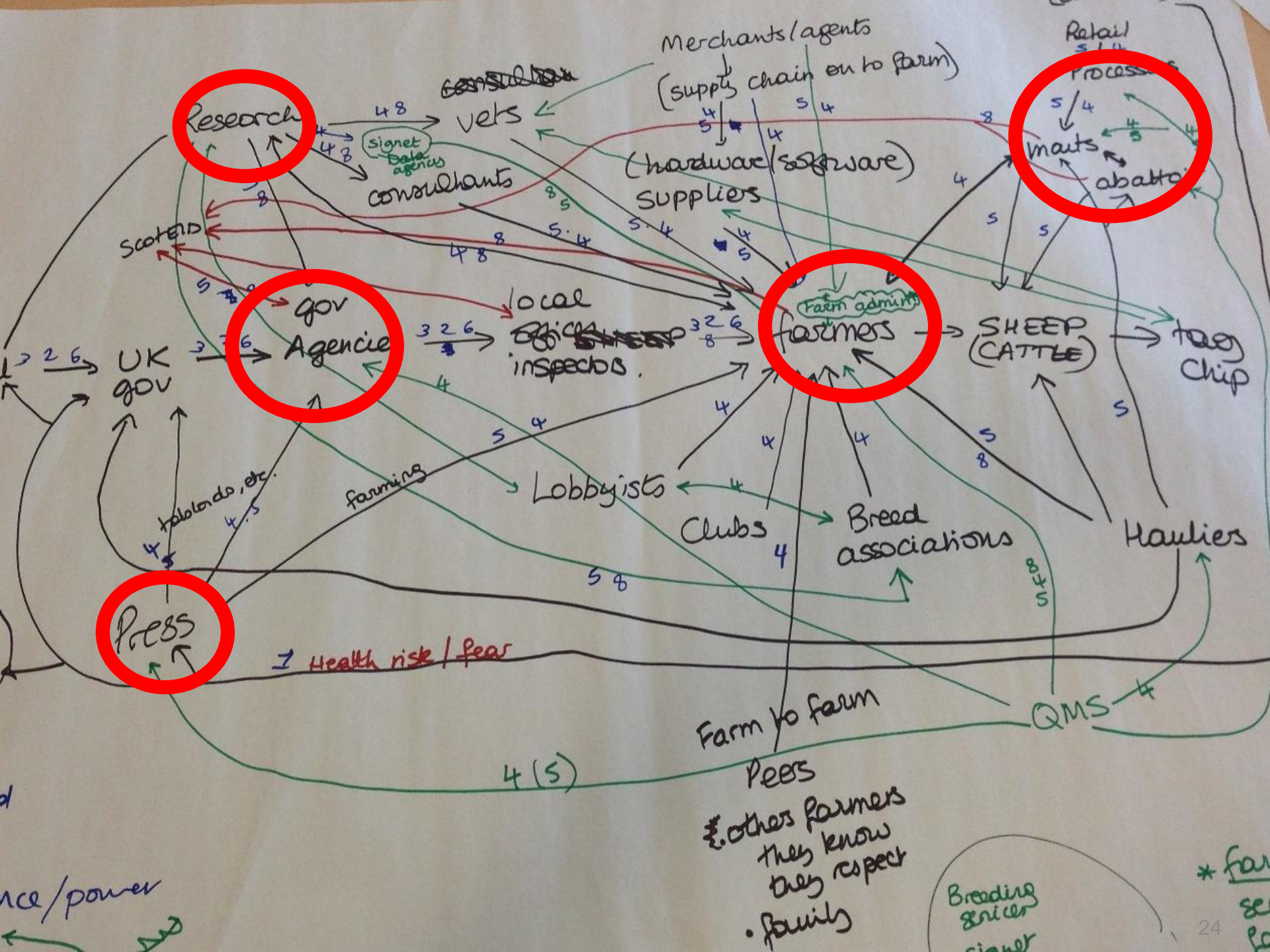
22%



EID Workshop

- Innovation System approach
- 12 participants:
 - Government, researchers, industry
- Create network of agents linked together by the use of EID for sheep management
 - Barriers & blockages to uptake
 - Solutions





EID workshop – barriers?

- Skills and training
- Threat to workmanship

• Time

• Equipment

Solutions?

- Feedback from abattoir to farmer
- Standardisation of equipment & software
- Skills: demonstration, training, open days
- Education



Concluding remarks

- Feasible to integrate EID & hill farming
- Benefits?
- Uptake?
- What is needed?
- Next stage?
- **Using EID technology is part of the future for hill farming**



Thanks

- Funders



& SRUC SFC KTE fund

- Colleagues:

- SRUC: Nicola Lambe, Harriet Wishart, Ann McLaren, Tony Waterhouse, Davy McCracken, Fiona Borthwick, Hill & Mountain Research Centre farm staff
- Moredun Research Institute: Fiona Kenyon, Dave McBean

Innovation Network

