

BSAS Annual Conference
Animal Science for a Sustainable Future
6-7 April 2016, Chester



Introducing a TST worming approach on a hill farm using EID of lambs

Claire Morgan-Davies¹, Nicola Lambe¹, Fiona Kenyon², Dave McBean², Harriet Wishart¹, Davy McCracken¹

¹ SRUC Hill & Mountain Research Centre, Kirkton, Crianlarich, FK20 8RU, Scotland, UK

² Moredun Research Institute, Pentlands Science Park, Bush Loan, Penicuik, EH26 0PZ, Scotland, UK

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

Outline

- Overview: EID & hill farming
- Targeted Selective Treatment
- Concluding remarks



EID – Electronic Identification

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



Hill farming in Scotland

- Marginal land/poor land
- Large size flocks, low stocking density
- Labour critical, economically fragile, reliance on subsidies



- Anthelmintic resistance is developing

The research



2 management systems 900 sheep

Conventional
Non-EID managed

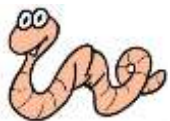
Precision Livestock Farming (PLF)
EID managed



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

**Performance data
& labour
recording**

Based on % weight change
result (>Feb)



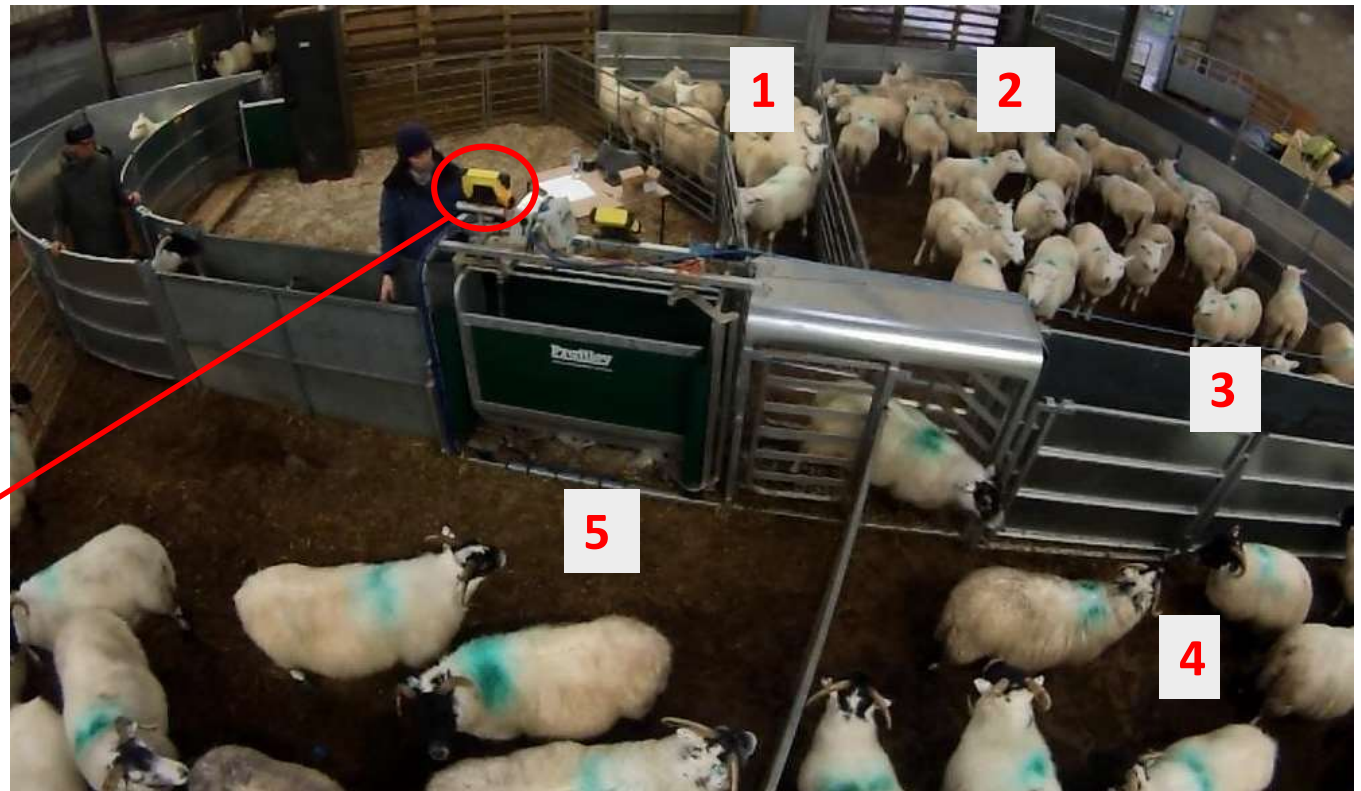
Whole flock approach
- pooled FEC

Targeted Selective Treatment
- lamb weight change

EID technology used

- Automatic weigh-crate (5 ways-shedder)

- Tru-test weigh head



Targeted Selective Treatment

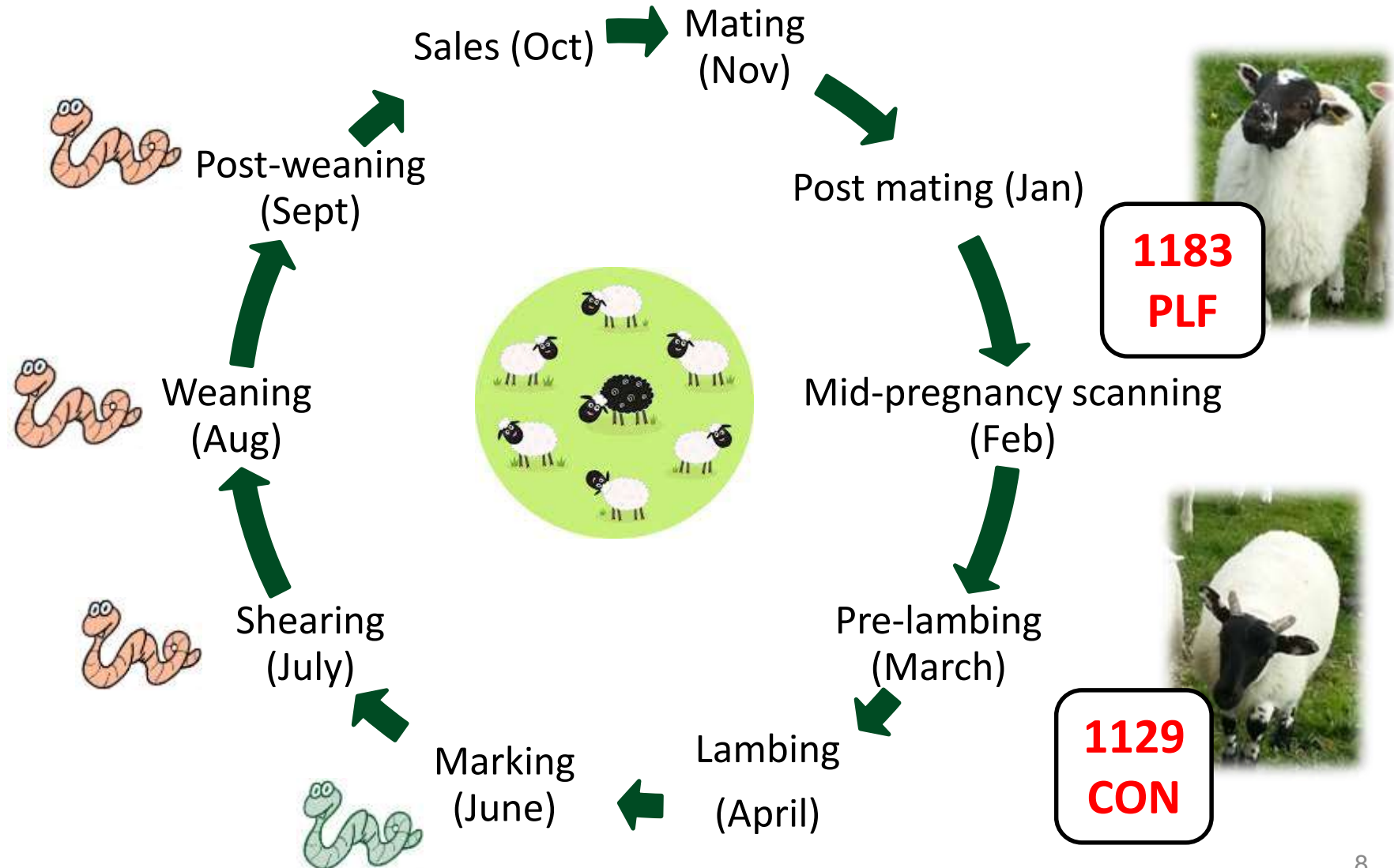


- Collaboration with Moredun Research Institute
- Only worm lamb that do not thrive
 - ⇒ dilute resistance to anthelmintics
- Compare target weight with actual weight (use “Happy Factor” algorithm*)
 - ≥ target weight: no dose
 - < target weight: dose

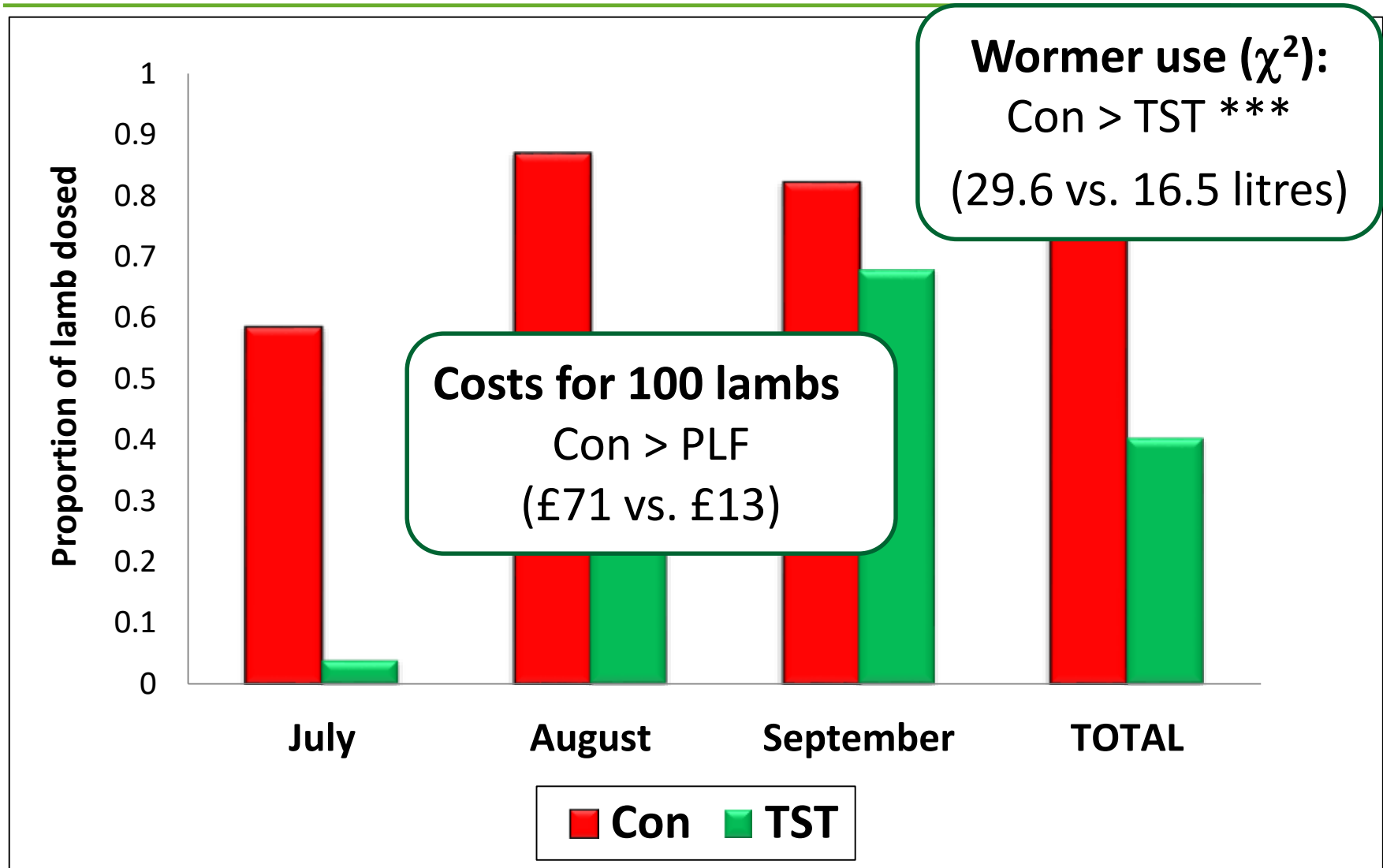


* Greer et al., 2009

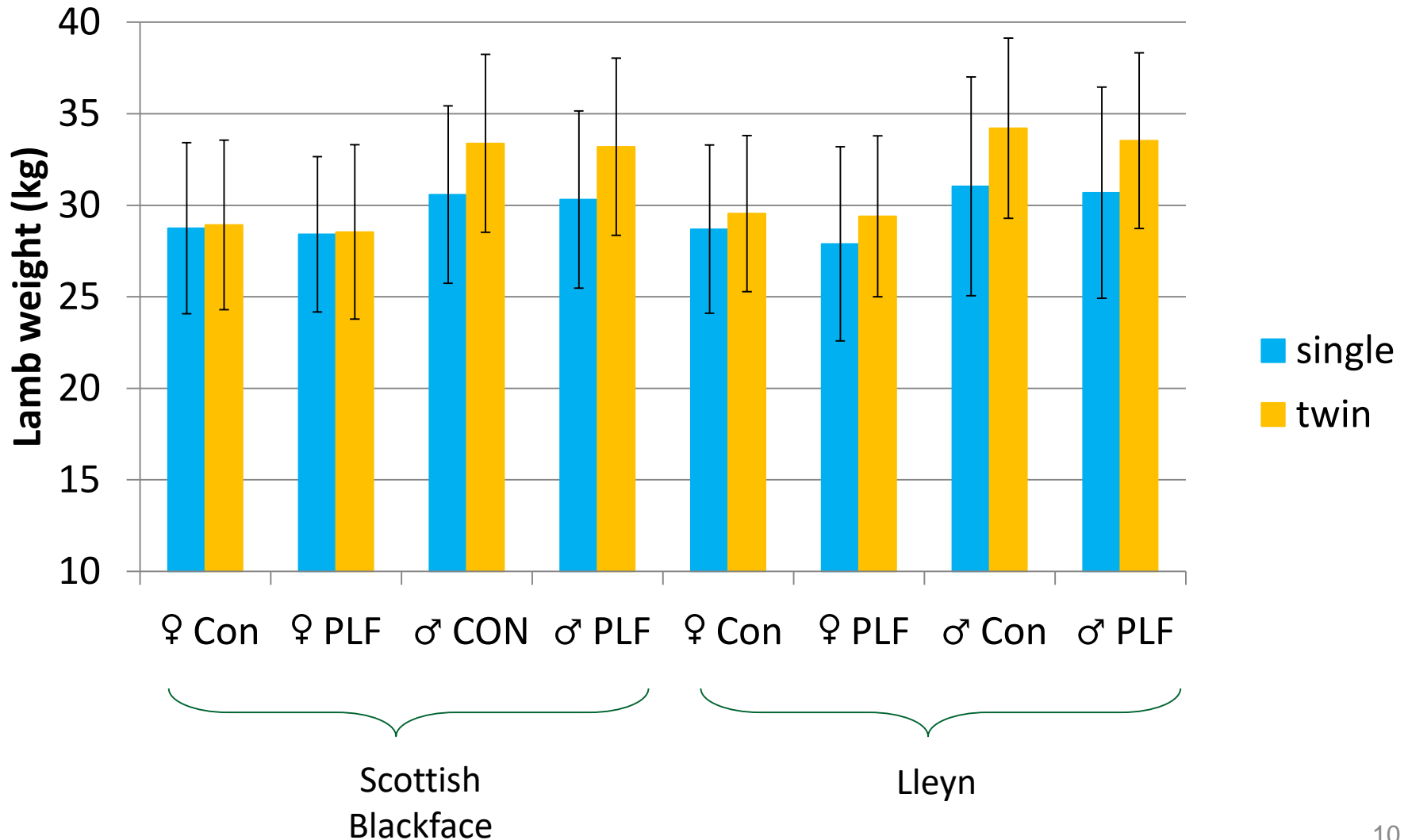
Experiment – Kirkton lambs



Results over 3 years (2013-2015)



Lamb final weights (Sept)



Lamb final weights (Sept)



Response variate: Sept weight

Fixed model: Constant + Breed + Sex + Management system +
Littersize

Random model: Year

Fixed term	Wald statistic	n.d.f.	F statistic	F pr
Breed	4.54	1	4.54	0.033
Sex	336.05	1	336.05	<0.001
System	3.18	1	3.18	0.075
Littersize	94.80	2	47.40	<0.001

Concluding remarks

- Feasible to introduce TST on a hill farm
- Reduced anthelmintics use
- Could slow down resistance build-up
- Can reduce farm labour
- Uptake? Cost of equipment



Acknowledgments



- **Colleagues**



Dr Nicola Lambe, Harriet Wishart

Prof. Davy McCracken

Hill & Mountain Research Centre farm staff



Dr Fiona Kenyon

Dave McBean

- **Funders**





SRUC

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