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)

EID ear-tags + applicators

Implants
Marginal Areas/Hill farming

Source: Europa.eu
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
Based on shepherd’s condition assessment + scan result (>Feb)
Whole flock approach - pooled FEC
Sold after 4 crops

EID-based
EID managed
Based on % weight change + scan result (>Feb)
Labour recording at each task
Worming weight change
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

Shepherd assigns feeding groups based on ewe condition

EID Technology assigns feeding groups based on individual weight change

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Winter feeding

EID-managed: ‘tight’ distribution of ewes

CON – managed: ‘looser’ distribution of ewes

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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

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

~450 Scottish Blackface

~310 Lleyn
Results over 2 years (2013-2014)

- Shearing (Jul)
- Weaning (Aug)
- Post-weaning (Sep)

% Lamb wormed

- Con
- EID
## Labour & costs: for 100 lambs

<table>
<thead>
<tr>
<th>Year</th>
<th>Worming costs</th>
<th>Labour</th>
<th>Labour costs</th>
<th>Total costs</th>
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<td>2013</td>
<td></td>
<td></td>
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<tr>
<td>Con</td>
<td>£63</td>
<td>15.97  hrs</td>
<td>£137</td>
<td>£200</td>
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<td>EID</td>
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<td>3.12   hrs</td>
<td>£27</td>
<td>£40</td>
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<td>2014</td>
<td></td>
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<tr>
<td>Con</td>
<td>£79</td>
<td>16.51  hrs</td>
<td>£142</td>
<td>£221</td>
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<tr>
<td>EID</td>
<td>£13</td>
<td>3.02   hrs</td>
<td>£26</td>
<td>£39</td>
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</tbody>
</table>
On-farm labour savings

Yearly labour use

second/animal


CON  EID
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 reader
  - 2% have EID crate

Main barriers:
- Cost of equipment
- Lack of financial help
- Wary of technology
DVD & Online survey

- DVD
- YouTube
- Online survey

https://www.youtube.com/watch?v=PJO7-3XSsIU
Online survey

- 103 respondents
- 96% agreed that EID could be beneficial for sheep management

Before

- 73% positive
- 5% neutral
- 22% negative

After

- 93% positive
- 7% neutral

- Farmers 39%
- Agric. Students 26%
- Non-farmers 23%
- Others 12%
- Agric. Students 26%
- Farmers 39%

Video = useful means of communication
People positive about EID
Cost of equipment = major barrier
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

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EID workshop – barriers?

- Skills and training
- Threat to traditional stockmanship
- Time and cost
- 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

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  – Moredun Research Institute: Fiona Kenyon, Dave McBean
Innovation Network

Key:
1. Fear (health risk/fear)
2. Fraud
3. Policy
4. Influence/power
5. Money
6. Subsidies
7. Goods/services
8. Data