The effect of ewe prolificacy level on number of lambs born, lamb birth weight and lamb mortality

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Overview

- Introduction
- Objective
- Materials and Methods
- Results
- Potential system output
- Potential system profitability
- Conclusions
Introduction

• Grass based lamb production systems
  • Challenge
    • Increase output of lamb
• Two most important factors
  • Stocking Rate
  • Ewe Prolificacy
• Teagasc Roadmap targets
  • SR – 13 ewes/ha
  • Weaning 1.8 lambs/ewe
Objective

To investigate the effect of ewe prolificacy level on the number of lambs born, lamb birth weight and lamb mortality
Materials and Methods

• Two groups of primiparous two tooth ewes were assembled
  • 180 animals in each group
  • Medium prolific group – Suffolk x ewes (MP)
  • High prolific group – Belclare x ewes (HP)
    • Up to 0.3 lamb/ewe difference (Hanrahan 1994)
Materials and Methods

• Data Analysis
  • Analysis of variance using proc GLM SAS
  • Odds ratios also calculated using proc Genmod
  • Odds ratios derived by acquiring the exponent of the partial regression co-efficients
  • Odds ratio greater than 1 implies increased likelihood of an outcome
Results

Lambs born/ewe

• Prolificacy group significant effect (P<0.05) on number of lambs born/ewe
  • 1.80 HP
  • 1.66 MP

• HP group 1.83 times higher likelihood of having greater number of lambs than MP group
Results

Lamb birth weight and mortality levels

• Average Lamb birth weight 0.14kg lower for HP group (P<0.05)
  • 4.29 kg MP
  • 4.15 kg HP

• Mortality at birth 1.1 times more likely in HP group (P<0.01)

• 1.4 times greater likelihood of a lamb not surviving to weaning (14 weeks) in HP group
# Potential from system

## Carcase output/ha

<table>
<thead>
<tr>
<th></th>
<th>Prolificacy</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>SR</td>
<td>Medium (1.66 lambs/ewe)</td>
<td>High (1.8 lambs/ewe)</td>
</tr>
<tr>
<td></td>
<td>10 ewes/ha</td>
<td>321</td>
<td>351</td>
</tr>
<tr>
<td></td>
<td>12 ewe/ha</td>
<td>386</td>
<td>421</td>
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<tr>
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<td>14 ewes/ha</td>
<td>448</td>
<td>489</td>
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</table>
Potential from system
Gross margin/ha (€)

<table>
<thead>
<tr>
<th>ewes/ha</th>
<th>GM €/ha</th>
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<tbody>
<tr>
<td>10</td>
<td>MP</td>
</tr>
<tr>
<td>12</td>
<td>HP</td>
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<td>14</td>
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Conclusions

• Ewe prolificacy level can have an effect on lamb birth weight and mortality levels
• Increasing the prolificacy level of ewes in a flock can have a positive effect on farm output and profitability
• Further work on management and nutrition of HP flocks required to minimise lamb mortality levels
Thank you