Flocks and Foliage
Can Tree planning improve productivity, profit, health and welfare on livestock farms?
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Key drivers of Sheep Flock Profitability

- Stocktake\textsubscript{(AHDB)} analyses production figures for 66 flocks
- Fixed costs double between Top 1/3 and Bottom 1/3 flocks
- 6% lambs lost in top flocks from scanning to rearing, 10% in bottom third though up to 30% losses not uncommon
- Higher value lambs in top 1/3 of flocks
- Production limiting diseases delay finishing & increase variable costs

\textbf{Aim 1:} Spread the fixed costs across as many lambs as possible
\textbf{Aim 2:} Get the lambs off farm at the most profitable point in production, target market value, minimising incurred costs from production disease.
Reduce lamb mortality (& achieve aim 1)

- Key phase of lamb loss 0-48 hours
- 60% of all losses within 14 days
- Hypothermia, hypoglycaemia, mismothering, exposure, infectious disease
- Small lambs especially vulnerable

Hypothesis 1 - Good tree planting will provide -
- Reduced exposure
- Shelter for lambing ewes
- Shelter for neonatal lambs

When lamb losses occur (% of total losses)

- At lambing (0-48hrs) 49%
- 2-14 days post lambing 11%
- >15 days post lambing 10%
- Between scanning and lambing 30%

Source: HCC lambing project 2010/11
Reduce lamb mortality by reducing exposure

• Even at 25°C ambient temp & in still air, lambs still use extra energy to keep warm (Hecker et al. 1983)
• Many factors affect survival in poor weather (Mellor and Stafford, 2004)
• Ewes will seek out shelter and isolation (Wassmuth et al., 2000)
• Shelter at lambing need to be familiar, abundant & dispersed for ewes seeking isolation
• Provision of shelter reduced lamb mortality by 50% (Bird et al., 1984) AUS
• Wind shelter decreased twin mortality by 14-37% & overall mortality by 10% (Pollard et al., 2006) NZ

Post mortem of a neonatal lamb shows brown fat deposits around the kidneys
Reduce mastitis by reducing exposure

- Risk factors include teat end damage, thin ewes and exposure to the udder especially post shearing

- Cost of mastitis
  - Extra replacement plus disposal £120 plus additional poor performance in lambs
  - Welfare cost

- Mastitis is a culling offence
  - Premature culling of ewes, increasing replacement costs (10% cost of production, HCC Costs of Production 2013/2014)

Hypothesis 2 - Good tree planting will provide -
- Reduced exposure
- Shelter for lactating ewes
- Reduced risk of mastitis
Ensure efficient production (& achieve aim 2)

Key drivers of efficient production
- Ewe health and body condition score (therefore milk yield and DLWG 300g/day)
- Post-weaning performance of 200g/day
- Low levels of “endemic disease reducing growth rates”

Some diseases reducing efficient production
- Liver fluke in ewes: reducing condition, reducing milk yield
- Liver fluke in lambs: acute deaths, drops in DLWG, liver rejections
- Lameness in ewes: reducing condition, increased risk of mastitis, reducing milk yield
- Lameness in lambs: direct reduction in DLWG
Unproductive rushes grow as weeds instead of productive grass.

Exposed fields increased risk of ewe mastitis.

LIVER FLUKE mud & algae – provides food & habitat ideal for Galba truncatula (fluke snail).

LAMENESS wet underfoot, poor hoof conditions → shelly hoof & spread of D nodosus

HIGH LAMB MORTALITY • hypothermia • lower resilience to disease • increased spread of bacteria

No Trees

Wet, boggy, poached, muddy, poorly drained areas

Unproductive rushes grow as weeds instead of productive grass.

Increased risk of ewe mastitis

Exposed fields
Hypothesis 3 - Good tree planting will provide -
• Improved drainage
• Improved ground conditions
Final considerations

• The key drivers of flock profitability should inform strategy on farm- what is the challenge for your unit?

• Flock health planning and sustainable production is HOLISTIC and CYCLICAL

• Be aware of relatively high stocking around foliage

• Increased tree planting should be part of a broader strategy
References

- HCC Keeping lambs alive