

Ewe efficiency – the driver of profitable sheep systems

Dr. John Vipond

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Sheep Breeders Round Table

Efficient sheep



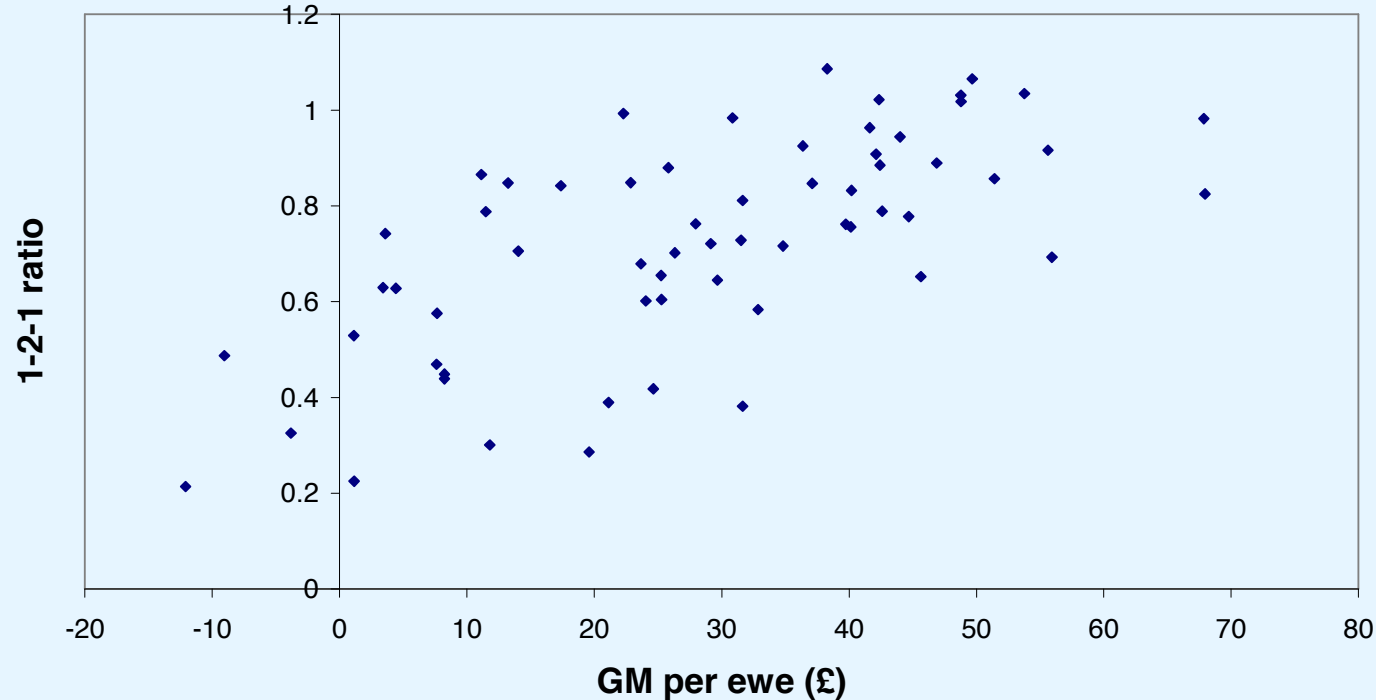
Efficient sheep are the starting point for an efficient and profitable farm

- Target 1 kg of lamb sold or retained per 1 kg of ewe to ram
- Know how your target compares with others on similar farms – Benchmarking
- Know what steps to take to improve it -higher lambing %
- Make the best of the feed grown on the property and use this effectively along with minimal bought in supplements
- Take off a kilo of lamb produced for every 5 kg of concentrate fed (Steven Johnston suggestion)

Relationship between Target 1to1 and gross margin



Target 1-2-1 and Gross Margin per Ewe



Based on QMS data (K.Bevan 2009)

Key determinants

- Ewe weight
- Lambing percentage
- Lamb weight

Efficiency of ewes of different weights (Vipond et al 1987)



- Comparison of 62kg Shetland X Cheviot vs. 85kg Halfbred ewes mated to Suffolk and rearing 166% and 160% resp. in Orkney over 3 years. Measured silage intake and grazed to constant sward height of 4-6cm. in summer.
- In Aberdeenshire over 2 years allocated the same weight of two-tooths at housing to a fixed set of resources – housing silage and grazing, used 88 SHXCh (50kg) vs. 60 GF ewes (73kg) rearing 141 vs 163% respectively
- Output/forage ha. was 20-24% higher for the SHXCh
- Target 1 to 1 SHXCh 0.98kg/kg, GF/HB 0.80kg/kg
- HB&GF carcass weights 21.1 & 19.6kg SHXCh 19.0kg
- No account of labour costs or capital costs for more sheep

Ewe weight



- Small prolific ewes capable of rearing lambs
- Must have good maternal traits –lambing ease
- Lowland ewe weight about 60-65kg keeps twin lambs in 19-21kg range
- Welsh ewe to Easyram sire with lamb at 37kg liveweight on July 18th –efficient hill ewe
- But increase in cull ewe value tips balance

Effect of lamb output efficiency

- Going from one lamb to two lambs per ewe per year reduces the ME required per kg of carcass by around 40%
- Target 1Kg of lamb sold or retained /Kg ewe to ram.



Lambing percentage



- Main determinant of profit, along with stocking rate
- Crossbred ewes scan up to 200% and can wean 185% but 140% is typical as 15% of neonates lost
- Barren ewes result from avoidable abortions –EAE and Toxoplasmosis. Vaccinate replacements.
- Cull barren two tooth
- Use EID and cull anything less than 10% below its litter size group average weaning weight these have 5% less lambs at every lambing (Rhind et al)

What contributes to lamb survival?



- Lambs die mainly because of:
 - Problems with the birth process
 - Poor adaptation to neonatal life (e.g. low vigour, poor thermoregulatory ability, etc.)
 - Failure in ewe-lamb bonding
 - Infectious disease
 - Congenital malformation, predation, accident

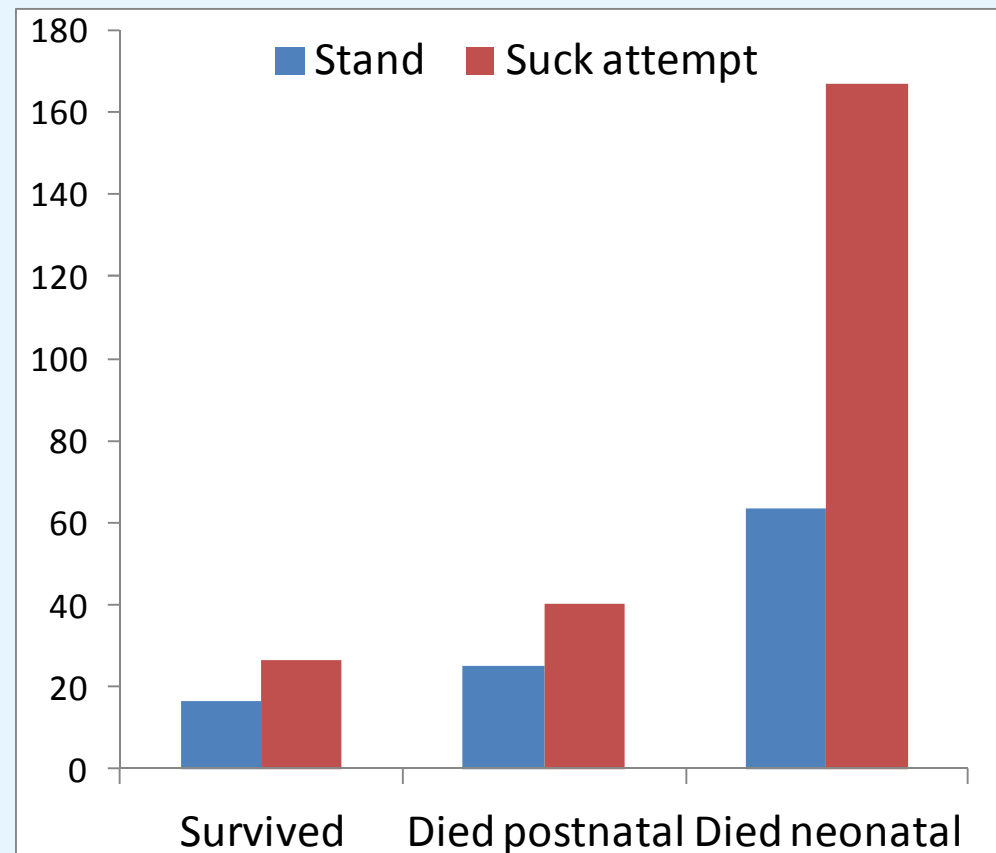


Adaptation to neonatal life



- Vigorous lamb that stands, reaches the udder and sucks quickly
- Able to maintain body temperature
- Lamb loses heat to ground 4X faster than to air
- Reduced risk of getting infectious disease
- Better maternal relationship and milk intake and hence better growth rate

Time (mins)



Selecting for lamb survival

- Improving lambing ease and lamb vigour and sucking ability will increase lamb survival and reduce labour inputs
- These traits are moderately heritable, thus selection can improve lambing ease and vigour
- There are no unfavourable genetic correlations between these traits and productivity traits recorded by Signet
- If buying rams –high index will have better survival than rams bought on blocky conformation.
- EBVs for lambing ease now developed
- Intervention levels less than 10/1000 ewes at lambing in Lleyn, Easycare and Romney breeds –that's the target!

Conclusions: lambing Percentage

- Have a strategic plan to lift production based on identifying weak links in breeding
- Meet target weights for replacements
- Nutritional intervention before tupping period to avoid thin ewes.
- Identify and correct trace element deficiency
- Cull late lambers –rams in for 21days only
- Follow up with scanning and extra DUP (200g/day soya bean meal) for twins and triplets

The ram contribution

- The focus has been improved ram genetics for growth and carcass traits
- But he has to produce LIVE lambs for profit
- And have low ram cost per lamb by living longer and serving more ewes
- Buying rams on size and conformation at sale has bad effects on ram health, longevity and lambing ease increasing work load
- You need rams that leave more lambs and lambs with more ‘Get up and go!’

Lambs sold –a production target for terminal sires



| | Annual cost per lamb produced | | | |
|----------------|-------------------------------|------|------|------|
| Mating seasons | 40 | 60 | 80 | 100 |
| 1 | 9.17 | 6.11 | 4.58 | 3.67 |
| 2 | 4.58 | 3.06 | 2.29 | 1.83 |
| 3 | 3.06 | 2.04 | 1.53 | 1.22 |
| 4 | 2.29 | 1.53 | 1.15 | 0.92 |

Variation in ram longevity and serving capacity (£3.66) has as much impact on profit as variation in his index (Hi –Lo)

Efficient rams - what are they and where are they?



- Selected using EBVs for lambing ease, lamb vigour at birth/sucking ability
 - EBVs for lambing ease and birth weight were included for the first time in the May 2010 Texel genetic evaluation
- Avoided overfatness and excessive concentrate use by 'ram fair arms race to the biggest animal' thus bought at on-farm sales and auctions based on production EBVs

Lamb weight



- Effects of selection on growth rate and carcass lean now being accepted
- Constrained by upper weight limits on carcass size that penalises the +75kg ewe
- Potential of chicory for lamb finishing with reduced anthelmintic use and no deleterious effects on taste
- Scottish carcass weights increased by 0.5 kg to average 20.2 in 2010

Increased efficiency by breeding from ewe lambs



- Depends on meeting target weight at mating of 60% MBS
- In addition must not be 10% below contemporaries liveweight at weaning
- Must not be overfed after mating, chasing catch up growth as the adolescent ewe directs nutrition to growth not her lambs
- Only allow to rear one lamb or her next lambing will be a single
- Thus cross-fostering to main flock –high labour
- Not for every farm or farmer but increases efficiency 10%