

Ewe efficiency – the driver of profitable sheep systems

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Sheep Breeders Round Table

Efficient sheep



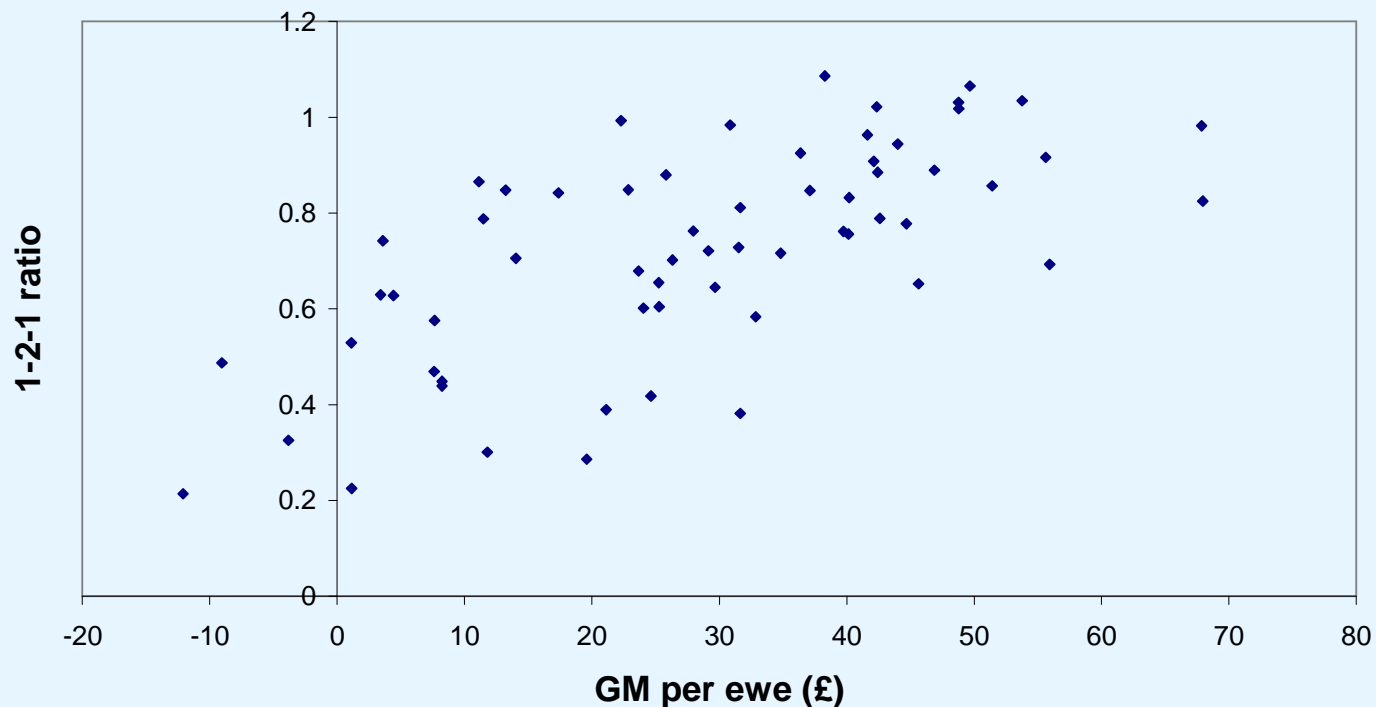
Efficient sheep are the starting point for an efficient and profitable farm

- 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

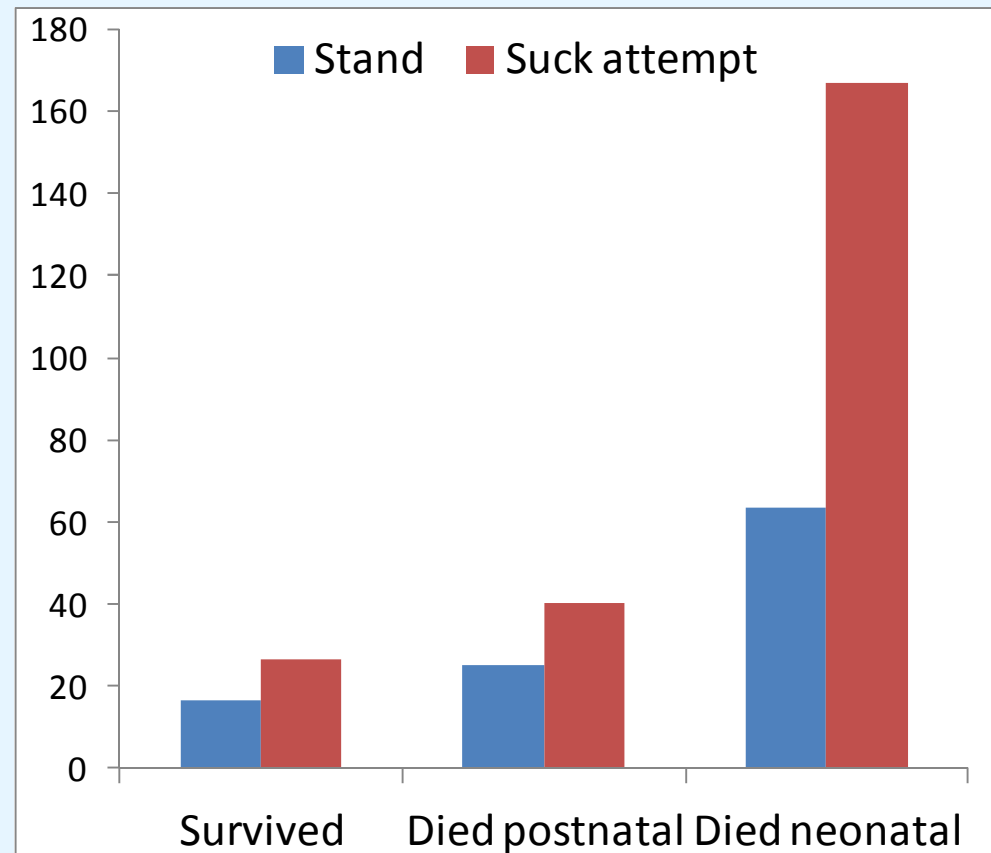


Adaptation to neonatal life



- 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%