

Improving reproductive performance of ewe lambs bred at 8 months of age

Presenter:

Paul Kenyon, Ph.D.

Head of Institute of Veterinary, Animal and Biomedical Sciences,
Professor of Sheep Husbandry
Massey University, New Zealand

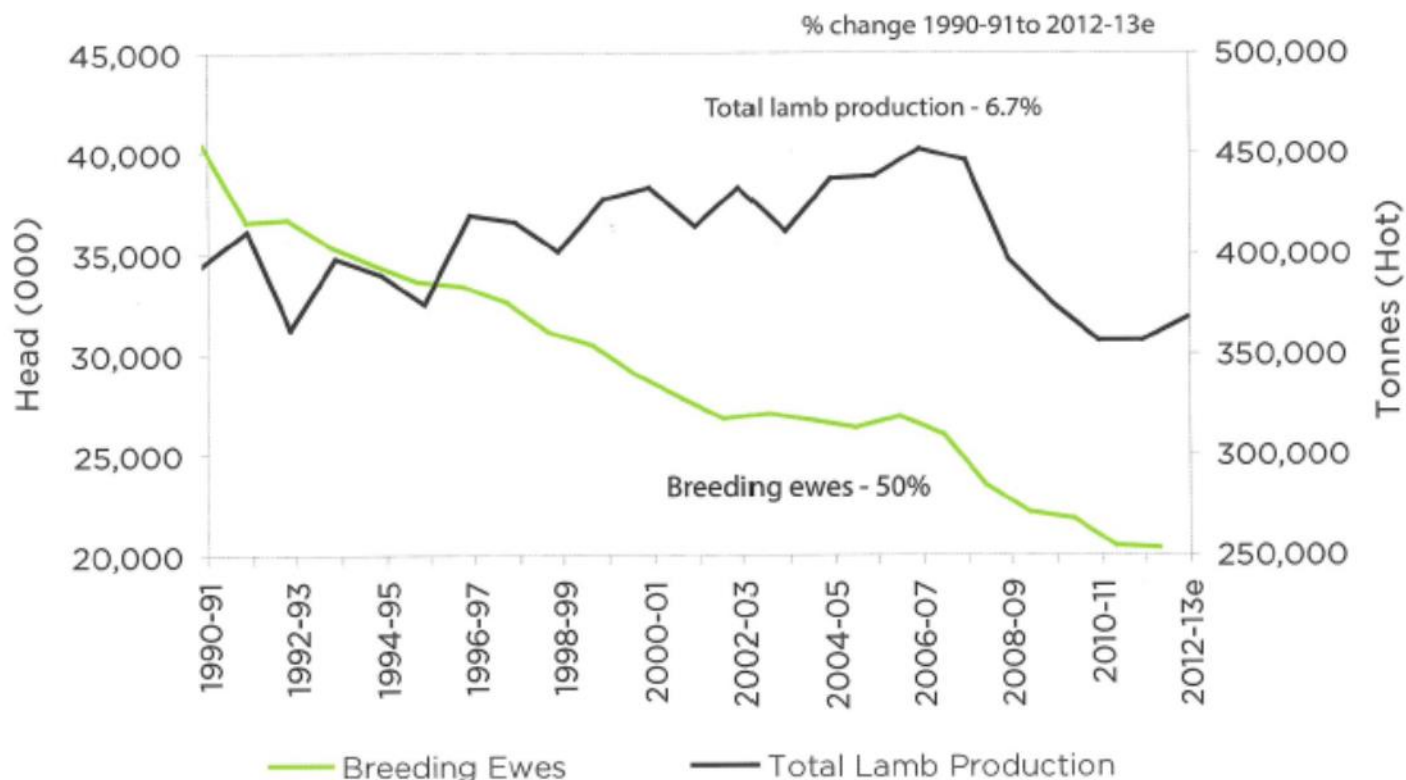
Host/Moderator: Jay Parsons



Forever discovering

This webinar is made possible with funding support from the Let's Grow Committee of the American Sheep Industry Association.

The change in the New Zealand flock and its performance



This has been achieved though

- Increased lamb growth to weaning - 50g/d
- Heavier carcass weights – 3 kg
- Lambing % increasing from 101 to 126%

Potential reasons for breeding ewe lambs

- the production of a lamb within the first year of life
- more lambs produced on farm within a given year
- more efficient use of herbage in spring
- an increase in lifetime performance
- an early selection/screening tool
- more progeny born on farm therefore potentially more selection pressure
- potential reduction in the generation interval if progeny born to ewe lambs are selected as replacements

Potential limitations of breeding ewe lambs

- low and variable reproductive performance
- increased feed requirements during their first year of life
- the need for adequately sized ewe lambs at 8 months of age
- potential for reduced 2-year-old live weight and reproductive performance and decreased lifetime reproductive performance
- progeny born to ewe lambs are often smaller at weaning and of lower value



INTERNATIONAL
SHEEP
RESEARCH
CENTRE

beef+lamb
new zealand

**HOGGET
PERFORMANCE**
UNLOCKING THE POTENTIAL

0800 BEEFLAMB (0800 233 352) | WWW.BEEFLAMB.NZ.COM | FUNDED BY FARMER LEVIES

<http://www.beeflambnz.com/Documents/Farm/Hogget%20performance%20-%20unlocking%20the%20potential.pdf>



Breeding ewe lambs (\approx 8 months)

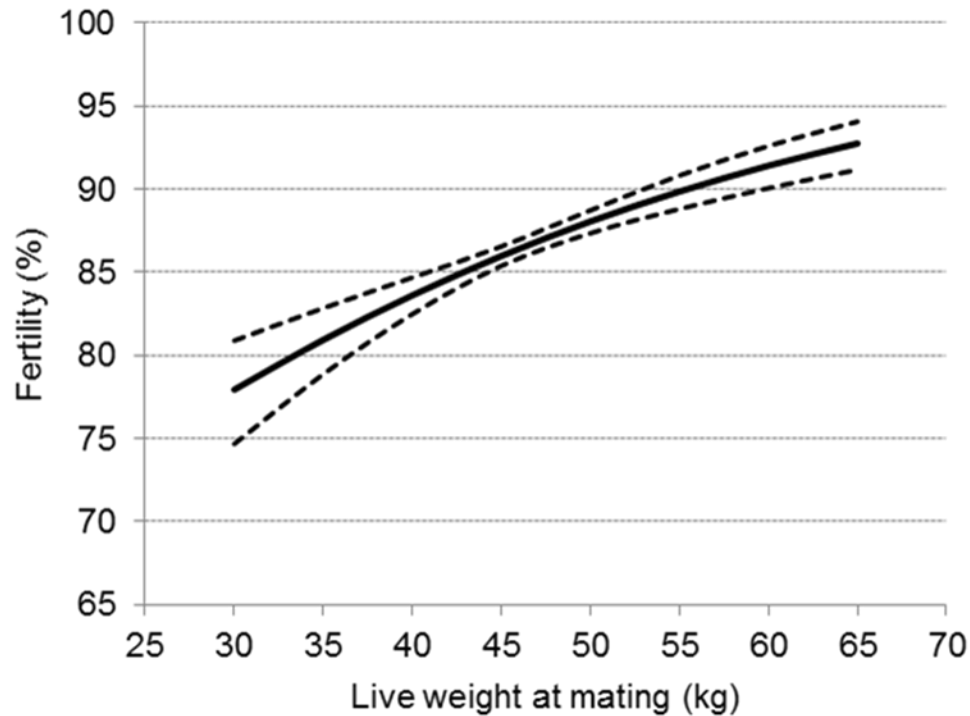
- Should all farmers breed ewe lambs?
 - no
- Should farmers who normally breed ewe lambs necessarily breed them all each year?
 - no – it needs to be a flexible policy
 - it should be dependant on ewe lamb live weight and predicted feeding levels

POINTS TO CONSIDER FROM WHEN THEY ARE WEANED THEMSELVES AS A LAMB, UNTIL THEIR FIRST BREEDING

Breeds

- There are breed differences – but not every farmer can change or is willing to change – for example in NZ
 - Finn/East Fr. and their composites highest performers
 - Coopworth the highest performer of the traditional breeds
- Within breeds more fecund lines are more suitable for ewe lamb breeding

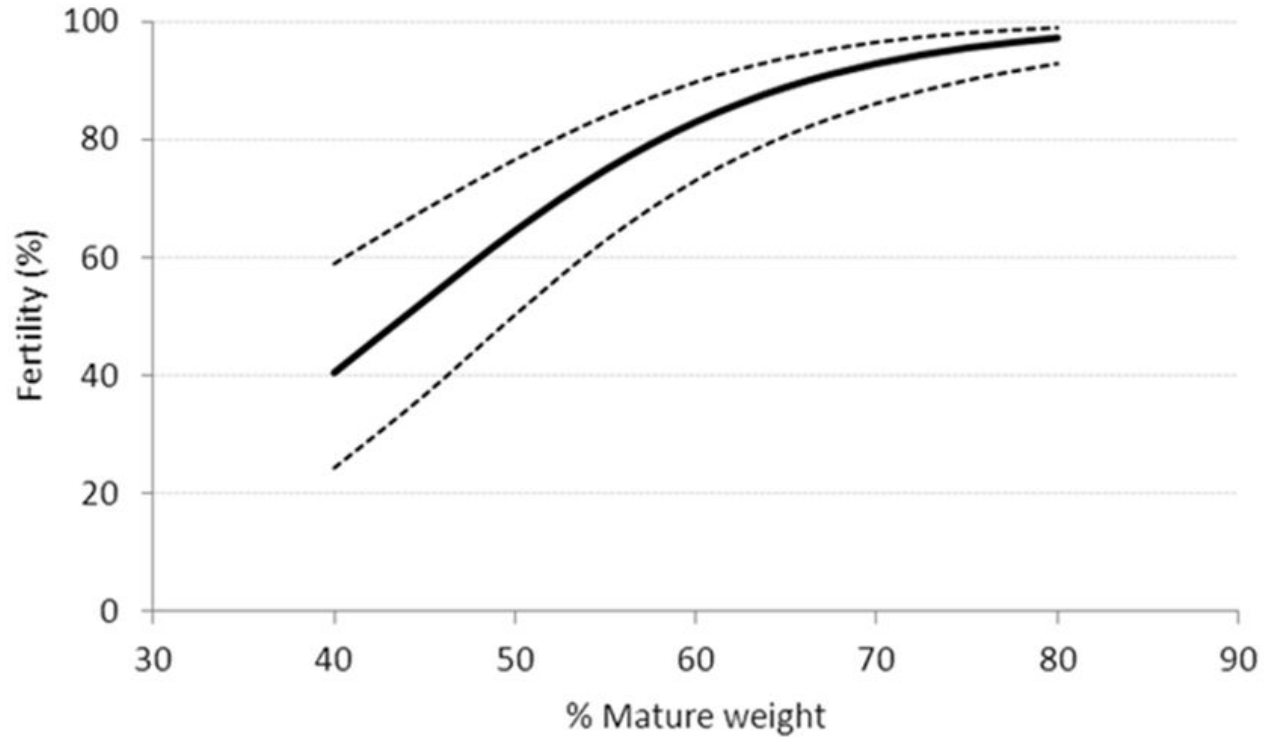
Effect of live weight at breeding



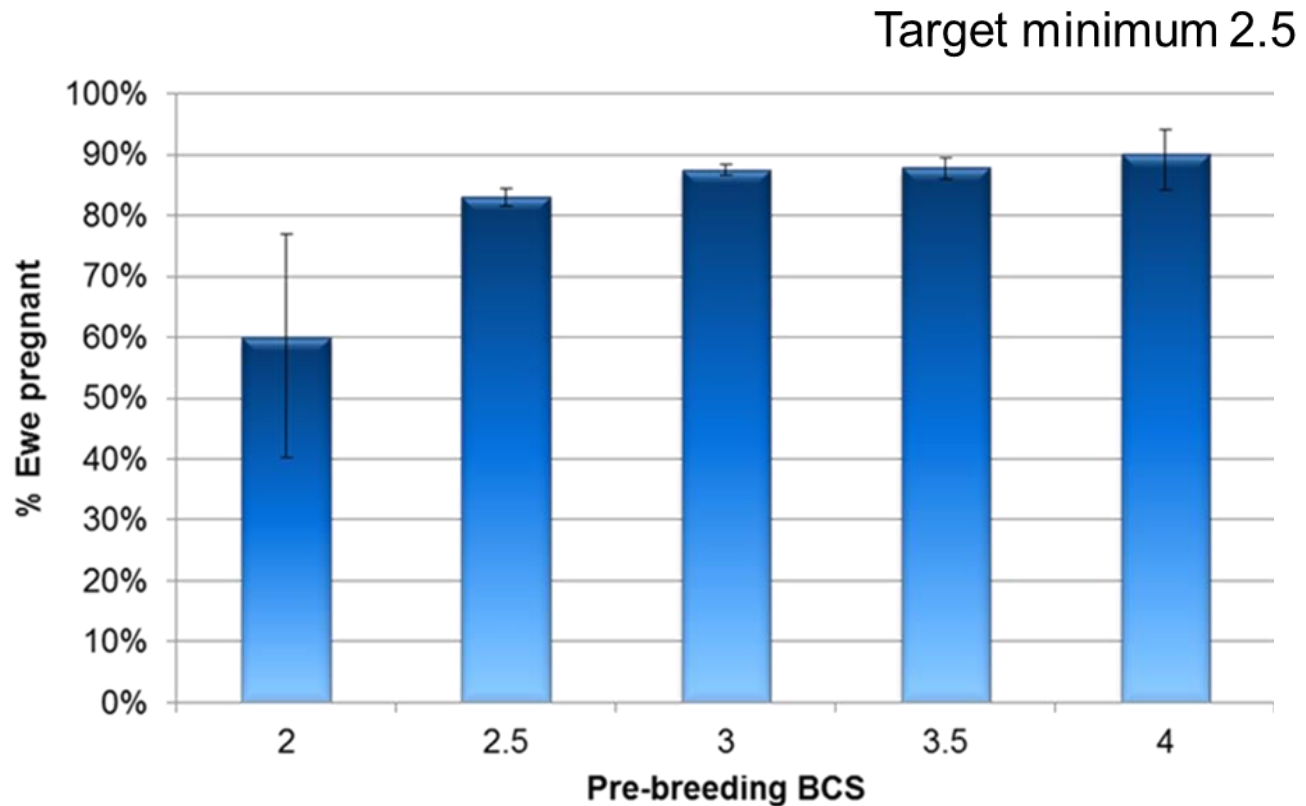
Target - 40 kg
minimum

≈90 pounds

Performance based on % mature weight



Effect of body condition at breeding



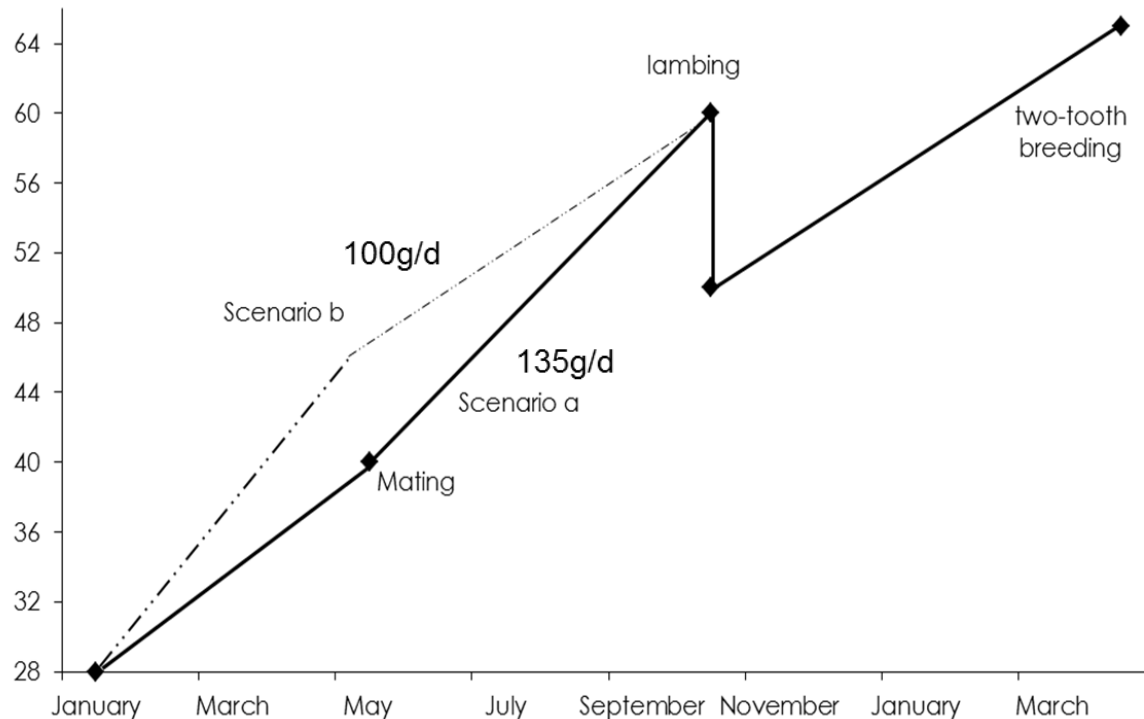
Management from weaning

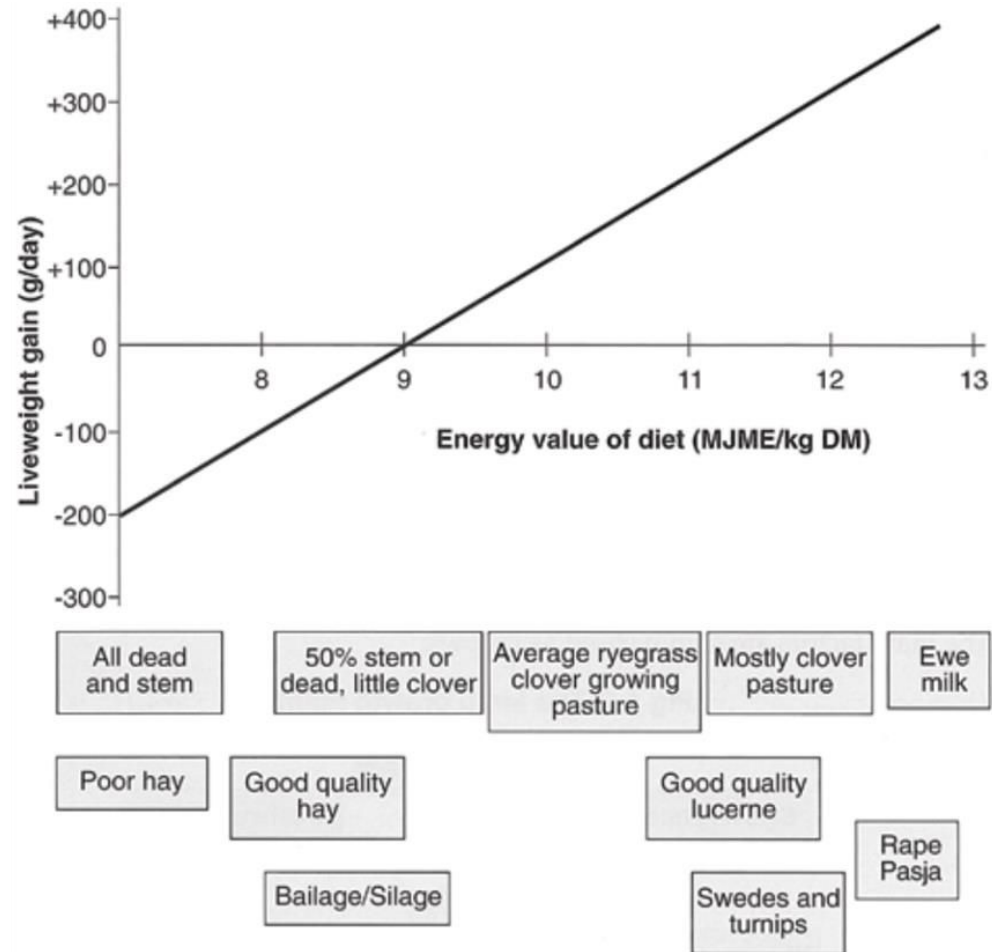
- In New Zealand, ewe lambs are weaned at an average of 28 kg (\approx 62 pounds) in late December (\approx 100 days of age)
 - a target live weight 40 kg by \approx 1 May
 - \approx 110 days (January to April)
 - sounds easy!!
 - but it is not!

Target setting and monitoring

- Set monthly live weight targets
 - monitor live weight (or at least a subset)
 - compare target to actual
 - the earlier you know you have a problem the easier it will be to fix
- Ensure you have appropriate health plans in place

The heavier the better at breeding - it makes pregnancy management easier





400 Plus A Guide to Improved Lamb Growth for Farmers and Advisors, B&LNZ

MANAGEMENT AT BREEDING

Teasers (vasectomised males)

- Exposer of ewe lambs to teasers for 17 days directly prior to planned start of breeding
 - 17 days and no longer
 - can increase the numbers pregnant and those pregnant early in the breeding period
 - ideal ratio 1:75 but still effective at greater ratios (1:200)

- Teasers should not be used as a short term fix for poor live weights

Management during breeding

- Ewe lambs are shy breeders – so ram to ewe lamb ratio is important during the breeding period
 - ideal range 1:50 to 1:75 (mature rams in NZ 1:100)
 - ram teams better than single sire mating
- Avoid the use of ram lambs during the breeding period
 - unless ratios are low
 - in NZ, ewe lamb breeding is a month after the mature ewe flock - so mature rams can be reused successfully

Management during breeding

- Ram choice
 - Ewe lambs are structurally smaller than mature ewes
 - therefore more susceptible to dystocia/difficult births
 - Ideally you would choose a ram of a ‘smaller’ frame size or of the same breed
 - do not use the larger framed terminal sire types
 - genetics has more of an affect on birth weight/size than nutrition

Management during breeding

- Use ram crayon harnesses to identify those bred
 - this allows targeted feeding in early pregnancy
- Confirm pregnancy status
 - Again this allows for targeted feeding

Nutrition during breeding

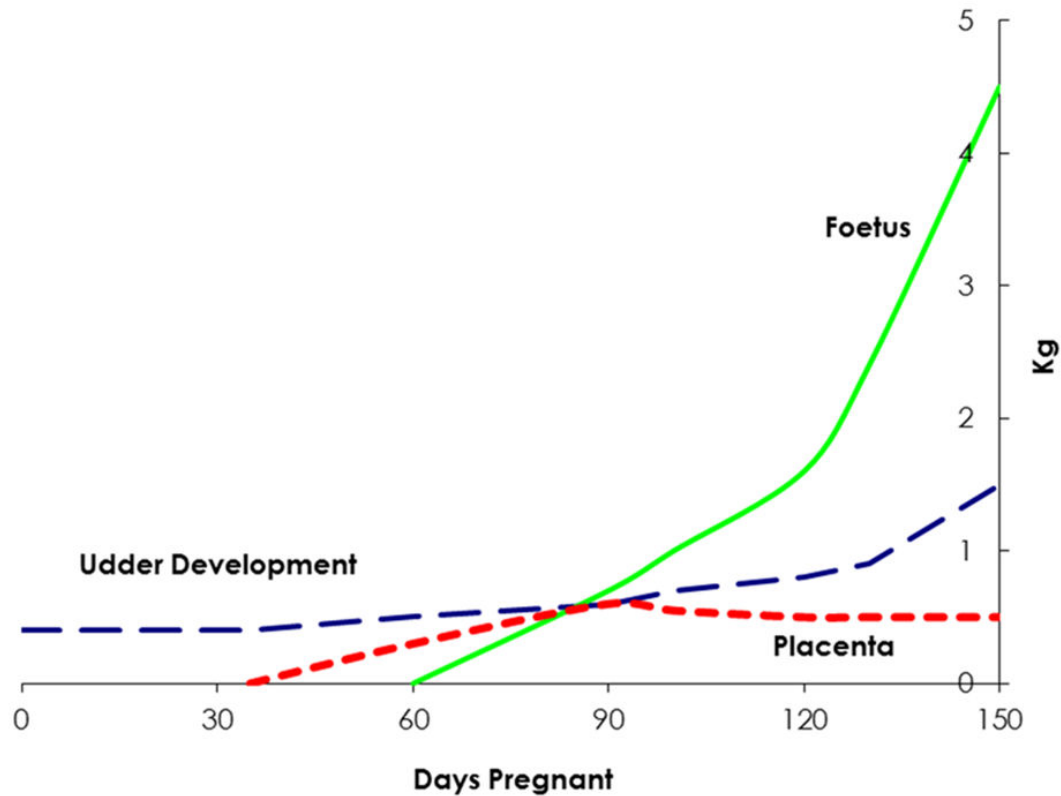
- Ensure ewe lambs are fed at a level allowing them to continue to grow during the breeding period
 - no ‘clear’ evidence of a flushing effect
 - most of the increase in reproductive performance observed from improved nutrition during the breeding period is likely due to lighter ewe lambs reaching puberty during the breeding period rather than more multiples

Management in pregnancy

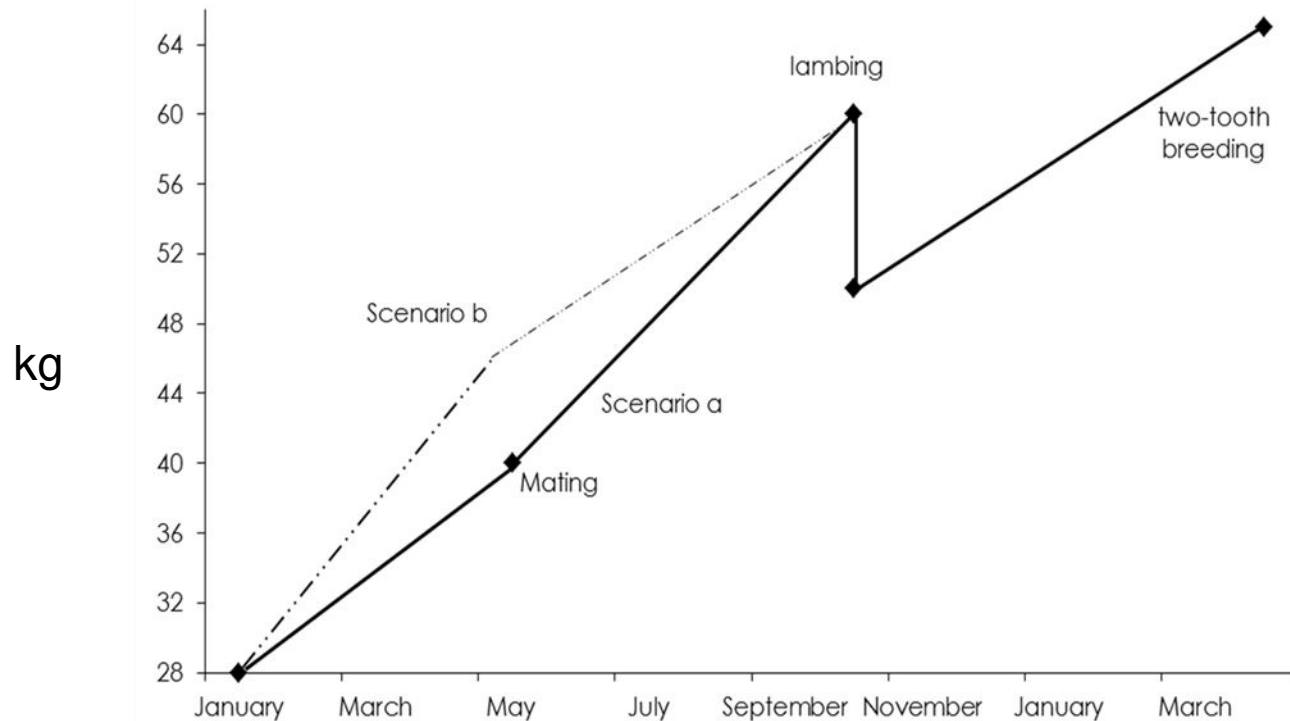
Traditional management of our mature ewe flock in pregnancy

- With mature ewes we hold them at maintenance for at least the first two thirds of pregnancy
 - we can do this because the ewe has reached her mature weight

Change in conceptus weight in pregnancy



The ewe lamb needs to grow herself



How we traditionally manage our mature ewe flock

- With mature ewes we hold them at maintenance for at least the first two thirds of pregnancy
 - we can do this because she has reached her mature weight
- We cannot do this with a ewe lamb as she needs to continue to grow herself as well as gain in total weight/size for the pregnancy itself

The pregnant ewe lamb

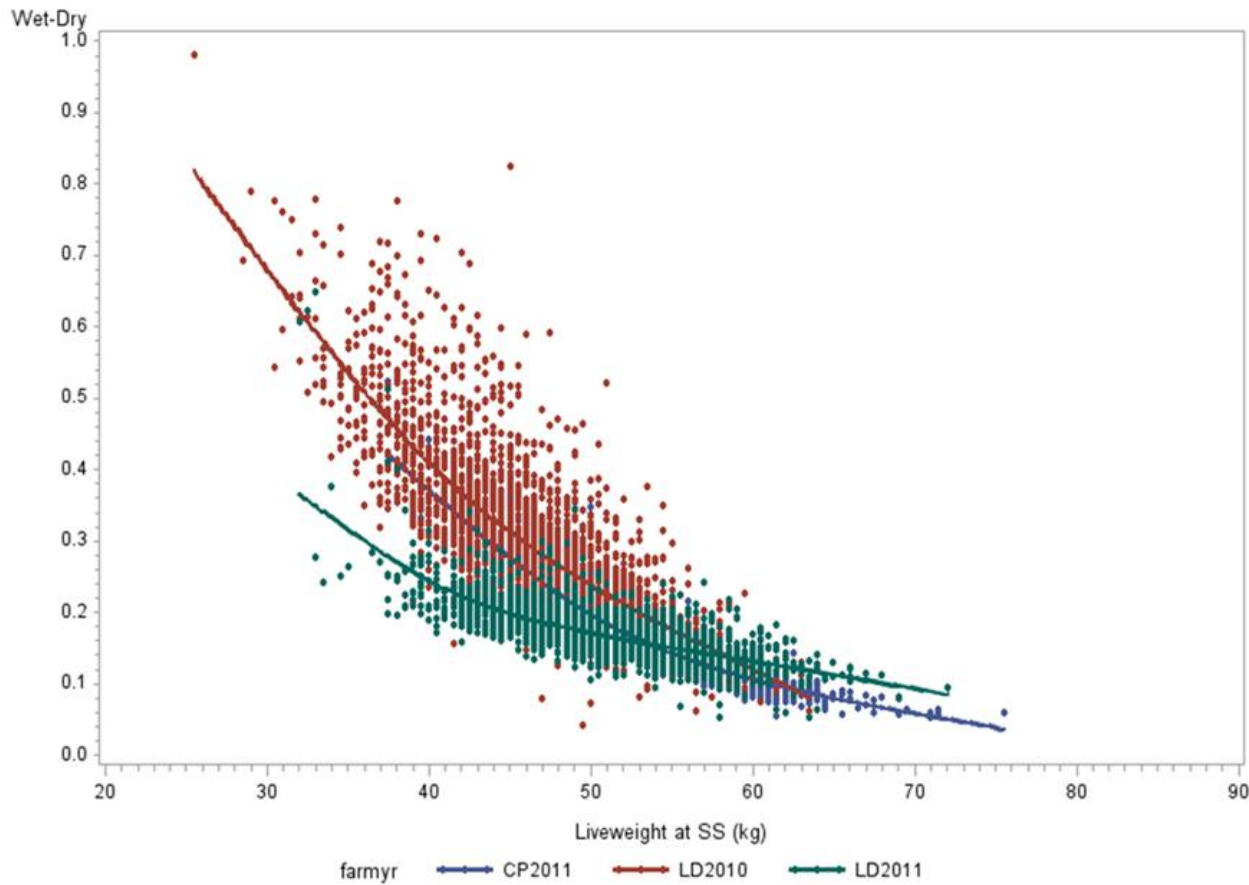
- If we make some assumptions
 - (i) she weighs 40 kg at breeding (day 1)
 - (ii) pregnancy ‘weight’ will be 10 kg (single conceptus)
 - (iii) she needs to be 60 kg (\approx 130 pounds) the day before she lambs (day 145) as she will be 50 kg the day after she lambs
 - she needs to be 50 the day after she lambs if she is going to get to 60-65 kg at rebreeding (18/19 months)
- Therefore she needs to gain 20 kg in total weight in pregnancy which equates to 135 g/d throughout pregnancy

Management in pregnancy

- In NZ to achieve the live weight gains required ewe lambs needs to be offered pre grazing pasture (ryegrass, white clover) covers greater than 1200 kg DM/ha (4cm in sward height) and minimise post grazing covers going below 1000 kg DM/ha (3cm in sward height) – throughout pregnancy
- To achieve this farmers need to consider
 - a reduction in other classes of stock
 - alternative feed sources (crops, supplements)
- Regardless of what option is used
 - monitor live weight to ensure targets are met

Reducing risk of reproductive lost

Chance of not successfully rearing a lamb



Weight three weeks pre-lambing

Management for lambing

- Management during/prior to lambing
 - paddocks should provide shelter
 - pasture covers should not fall below 1200 kg DM/ha
 - not only do you want maximum milk production she needs to continue to grow also

Management in lactation

- In the first part of lactation she will struggle to gain weight but in mid- to late-lactation she needs to be fed at a level to allow for weight gain
 - in NZ, it is known that pasture covers should not fall below 1200 kg DM/ha (4 cm sward height)
 - alternative herbage (chicory, plantain, red- and white-clover mixes and pure swards of lucerne) have been shown to increase the growth of lambs born to young ewes to weaning and the live weight of the young ewe herself

Management in lactation

- Consider weaning early (in terms of age of the lamb)
 - this gives the young dam more time to gain a suitable live weight before rebreeding
 - in most systems in NZ she is bred a month later than the mature ewe flock but rebred at the same time as them the following year

LONG TERM IMPACTS OF BREEDING EWE LAMBS

Lifetime performance of the ewe lamb

- Ewe lamb breeding has the potential to increase lifetime performance
 - on average we find they achieve a lambing percentage of 80 to 90% (lambs weaned per 100 ewes pregnant) in their first year
 - if fed well in their first pregnancy and lactation and if their weight at rebreeding at 18 months is not significantly affected (i.e. no more than 4 kg's behind) lifetime performance ends up increasing by 0.8 to 1.1 lambs weaned
 - note any small reduction in live weight at 18 months is not permanent

Do progeny born to ewe lambs and mature ewes differ?

- There is little data examining the impacts of keeping progeny born to ewe lambs as replacement ewes
- Progeny lighter to 6 to 12 months of age
- Our data suggests that only twins born to ewe lambs may display a permanent impairment on their live weight (i.e. past one year of age)
 - however, we observed no difference in two-, three- and four- year old reproductive and lactational performance

Conclusion

- Ewe lamb breeding has the potential to improve on farm productivity
- There are no magic bullets for getting ewe lamb breeding correct
 - but achieving live weights targets via correct nutrition is the major driver of success



Forever discovering



<http://sheepresearch.co.nz/>

Tē Kunenga
ki Pūrehuroa



MASSEY UNIVERSITY