Methods to Improve Aseasonal Lamb Production

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Taking US Lamb Quality to New Heights
Optimizing aseasonal production:

• Nutrition
• Genetics
• Environment-Lighting protocols
• Hormone therapies
• Ram effect and libido
Nutrition:

• Flushing has a big impact of lambing percentage regardless of breeding season
  • MSU studies indicate increases of 30-40% when ewes are well fed for 3 weeks before ram turn-in
    ✓ 200% of NRC energy intake
    ✓ Ewes fed at NRC Flushing recommendations of 160% did not respond

• Prolonged undernutrition is detrimental to conception in Spring mating
Rape x Kale hybrid at 90 days post emergence
Genetics:

Common US breeds used for aseasonal lamb production

• Horned or Polled Dorset*
• Rambouillet
• Romanov
• Finn
• Hair breeds of West African decent
• White or Black Dorper
• Ile de France

Cross breeding (heterosis) may enhance aseasonal fertility
Genetics: How can you select sheep for aseasonal reproduction?

• Heritability of fertility during Spring estimated at 0.09 to 0.16

• No EBVs exist for aseasonality on NSIP, difficult to measure this trait as the seasonal challenge is often not uniform

• Producers select for aseasonality by selecting breeding stock from ewes that express the trait

• Molecular markers may offer promise for selection for aseasonal conception
Lighting/photoperiod control:

• Complete photoperiod control (alternating 4 mo. intervals of 8:16 h light/dark cycles) is a proven method of optimizing ovulation and conception rate
  ✓ Requires indoor housing and dark barn to achieve

• Extended day lighting is a more feasible method that may have benefit
  ✓ 50-60 days of 24 h light followed by 50-60 days of ambient light
Lighting/photoperiod control:

Hormone Therapies:

- Progesterone CIDRs
  - FDA approved for use in sheep
  - 40-85% conception in Spring
  - Very helpful in synchronizing estrus
  - Results obtained are similar to that found using teaser rams
Ram Effect and Libido:

• Increasing evidence indicates that many ewes capable of breeding in the Spring do not cycle unless they are in the presence of rams.

✓ Use of intact, yet non-fertile rams (vasectomized teaser rams) in Spring mating are useful for inducing and synchronizing ewes.

✓ Ewes cycle 16-21 days following exposure to rams.

• Ram mating activity (libido) is likely a critical/limiting factor in Spring mating success.

✓ 3-5% fertile ram coverage suggested in Spring.
Have a Question?

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