





Using Ultrasound

Hudson Hill UW Extension







Ways to make money

- Produce for less
- Produce more
- Produce higher quality
- Receive higher prices





How has the sheep industry made genetic improvement?





Why has the sheep industry lagged

- No value based pricing-no incentive
- Traditional resistance to genetic prediction
 NSIP is now taking hold
- Taste and Tenderness is generally not an issue a
- Integrated programs like Mountain States lamb and Dakota lamb are now creating incentives for value based pricing





Question

• What do you do different today?







Why don't people eat lamb?







A challenge to the sheep industry

- To improve the yield and composition of the lamb carcasses
- Technology
 - What
 - Why
 - How





What is Ultrasound

- Allows criteria selection for genetics in a way that was previously not possible.
- Allow us to see the carcass while the animal is still alive
- Sound Waves
 - Moths
 - Bats
 - Sonar









Uses in selection

- Determine quality grade
- Determine yield grade





Scanning location for sheep carcass assessment.





Applying vegetable oil, or "acoustical couplant" – it is best if sheep are closely shorn.





Placing the ultrasound probe on the animal. Same location as cattle, between the last and next to last rib





Ultrasound image of lamb loin eye





Important points to identify in lamb carcass







Lamb loin eye, or "lamb chop"







Example data sheet for ram selection

Ultrasound Evaluation -

University of Wy	oming Cooperati	ve Extension Sei	rvice		
Hudson Hill		Bridger Feuz		Steve Paisley	
1-Jul-11					
Animal ID	Weight	LEA	BFAT	LEA/CWT	





Heritability

- Growth traits Moderate
- Carcass traits Moderate
- Reproduction traits Low
- Wool High





Ultrasound advantages

- Allows criteria selection for genetics in a way that has never been possible
- Speeds up genetic progress





Ultrasound limitations

- Technician accuracy
- What are we trying to measure change
- Is bigger better??





Problem

• Single trait selection





Pregnancy ultrasound

- Useful in herd management
 - Identify open ewes
 - Identify twins
 - Manage twins and singles more efficiently
- Cost effective service?
- Do it yourself
 - Pregnant / not pregnant very doable
 - Twins Quite difficult and timing is critical





Ultrasound Data Summary UW Winter Ram Test

Dr. Steve Paisley Extension Beef Cattle Specialist University of Wyoming Department of Animal Science





Ultrasound Data

- Collected using OIA (Ovine Image Analysis) software
 - Aloka SD-500 Ultrasound
 - 13 cm linear probe
- Software developed by ILIA labs, Designer Genes Technologies, LLC Harrison, AR.
- Rams ultrasounded each year after final weights are taken





First "Large" loineye example

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Second "Large" loineye example

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Third "Large" loineye example

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First "Small" loineye example

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Ram weights – up and down





Ram Loin Eye Area Trending Up





Ram LEA/CWT trending up





Ram Fat Depth Fairly Constant





US

Ram Test Data, 1999 - 2010





Ram Test Data, 1999 - 2010





Ram Adjusted LEA Trending Up





Ram Test Data, 1999 - 2010

- Loineye Area does appear to be "trending" upward,
- LEA/CWT also gradually increasing, BUT:
 - LEA and BF very closely related
 - Final test LEA dependent on final condition of rams
 - After adjustment, still appears to be slight trend upward
- Selecting for muscling in wool breeds is difficult:
 - Dual purpose status
 - Predominantly range flocks conflicting phenotypes?
 - Difficult to visually "see" and select for muscling





CSU Students on Spring Break??

