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Using Ultrasound

Hudson Hill
UW Extension

USDA

University of Wyoming Extension

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Ways to make money

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

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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?

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Why don’t people eat lamb?

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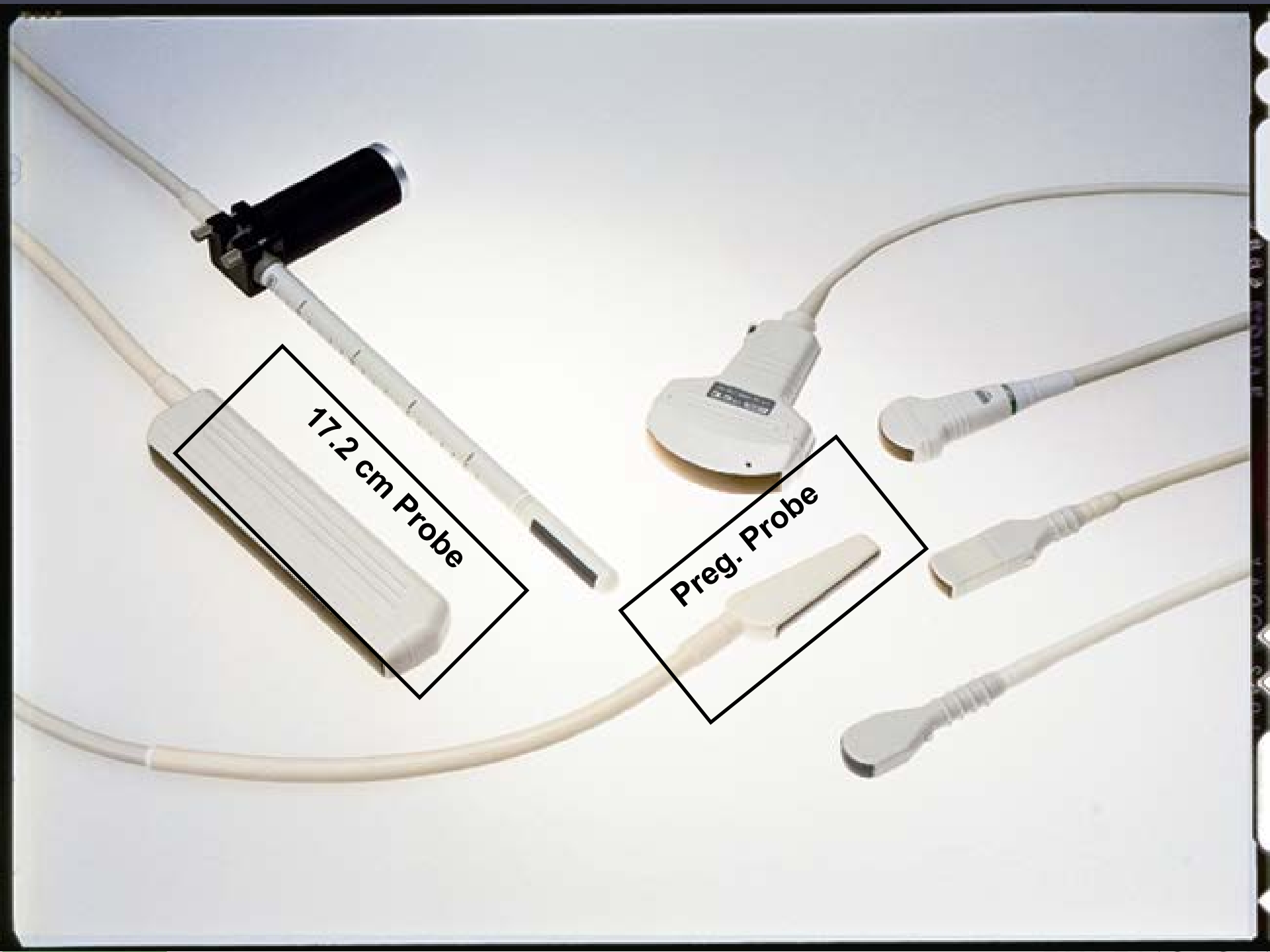
A challenge to the sheep industry

- 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


Aloka SSD-500V
MICRUS
TRACKBALL FUNCTION
POSITION
MEASUREMENT
MENU
FOCUS
DB CAL
FETAL WEIGHT
BODYMARK GROUP
MAGNIFICATION


17.2 cm Probe
Preg. Probe

Uses in selection

- Determine quality grade
- Determine yield grade

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Scanning location for sheep carcass assessment.

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

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

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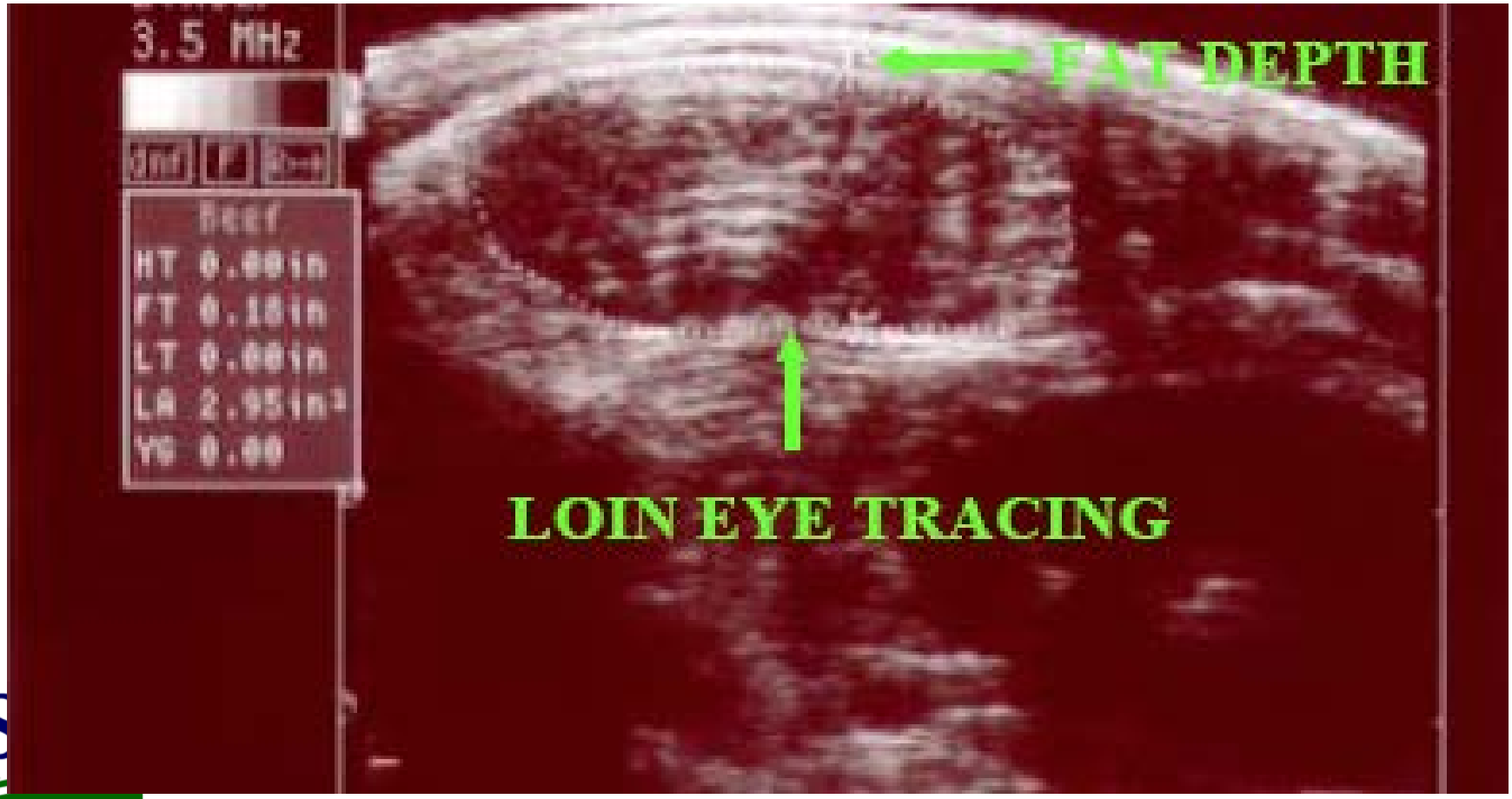
Ultrasound image of lamb loin eye



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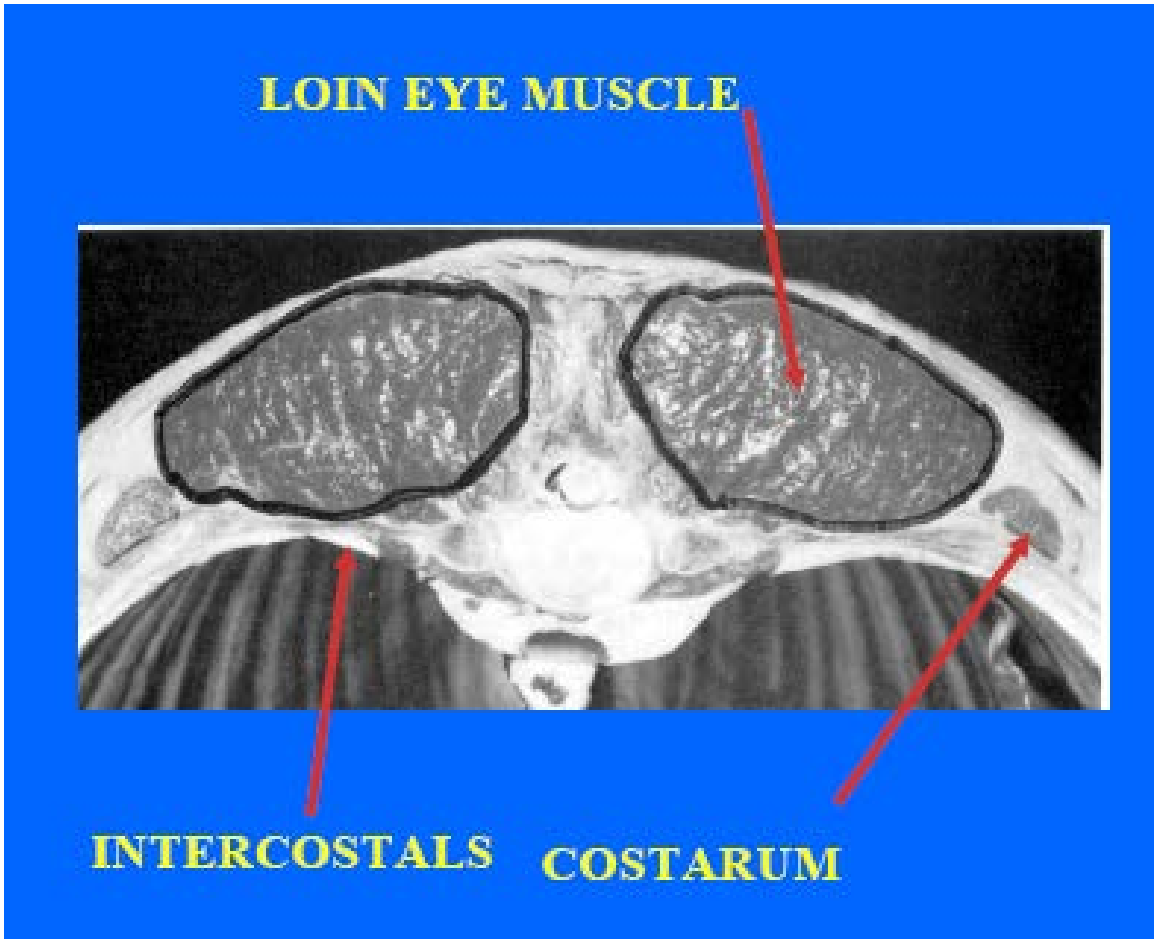
Important points to identify in lamb carcass



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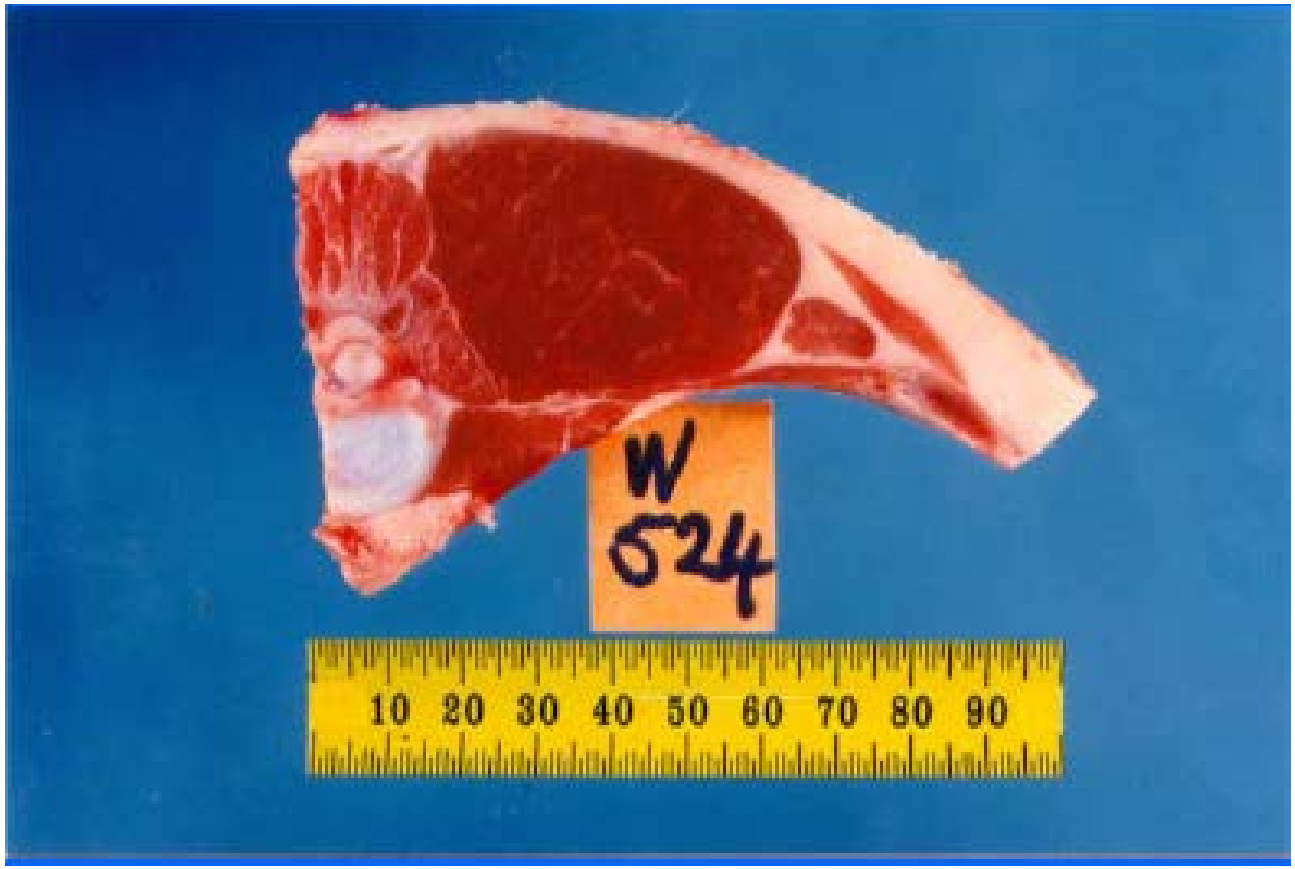
Lamb loin eye, or “lamb chop”



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Example data sheet for ram selection

Ultrasound Evaluation -					
University of Wyoming Cooperative Extension Service					
Hudson Hill		Bridger Feuz		Steve Paisley	
1-Jul-11					
Animal ID	Weight	LEA	BFAT	LEA/CWT	

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Heritability

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

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Ultrasound advantages

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

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Ultrasound limitations

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

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Problem

- Single trait selection

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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

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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

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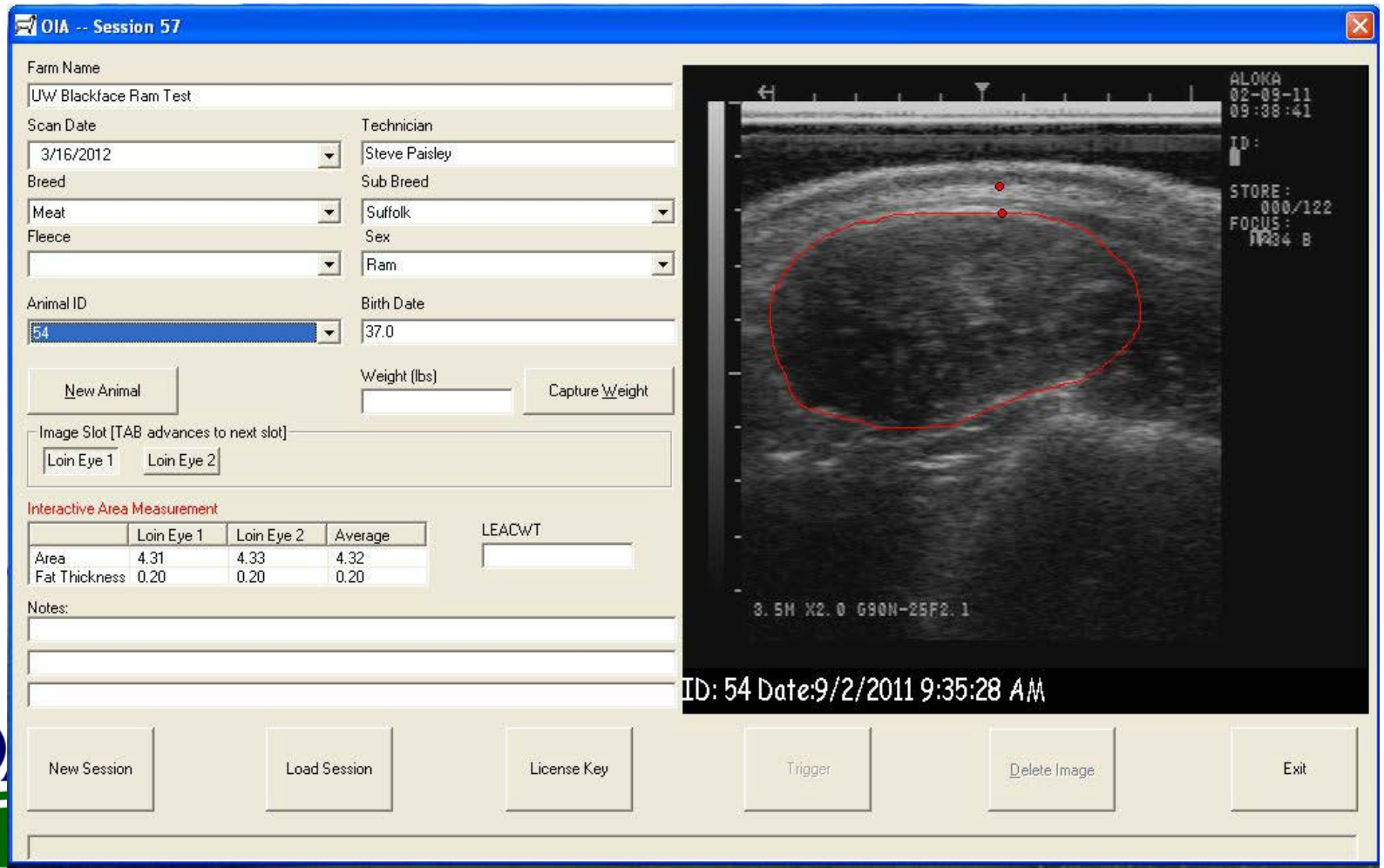
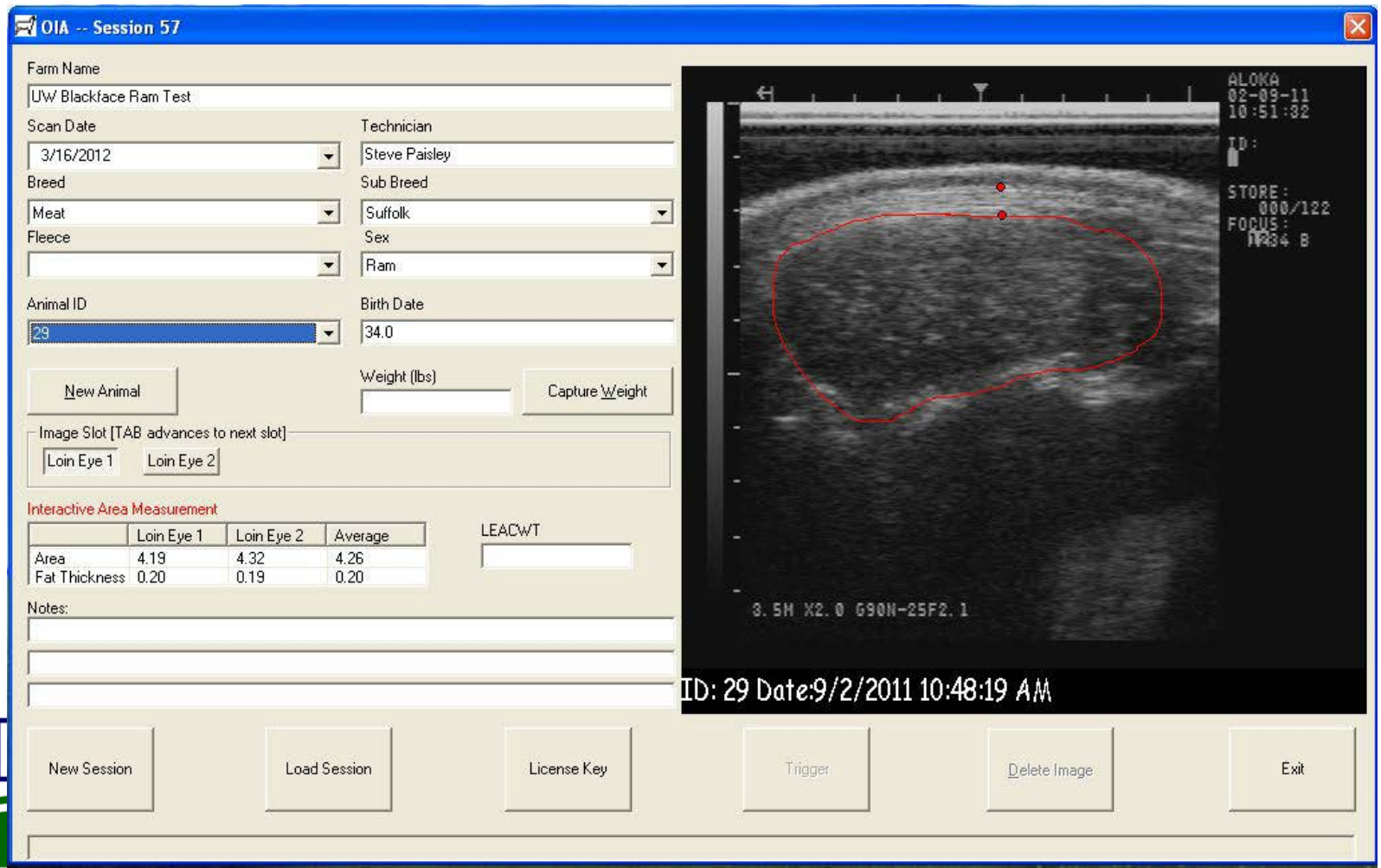
First “Large” loineye example



Second “Large” loineye example



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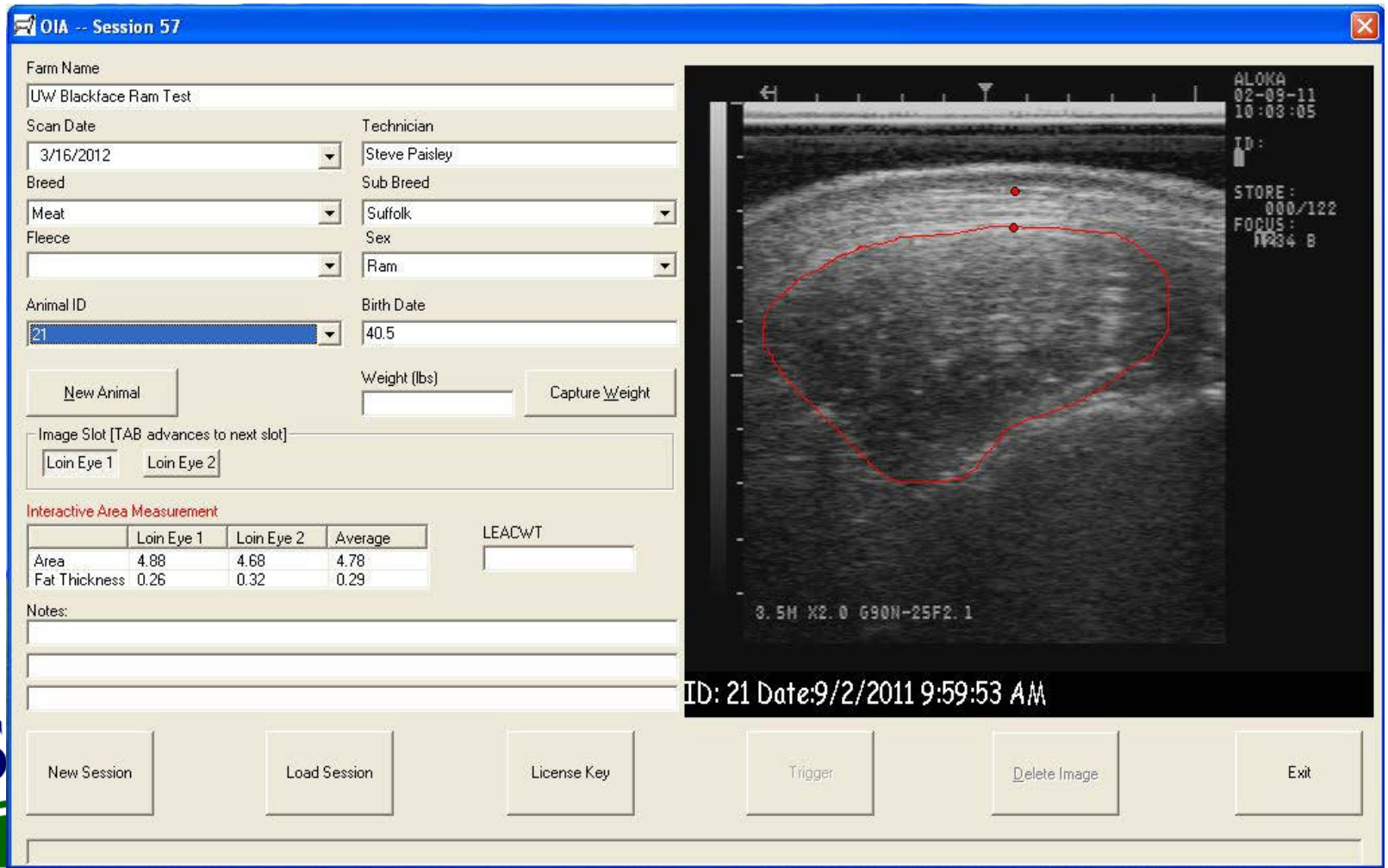
Third “Large” loineye example



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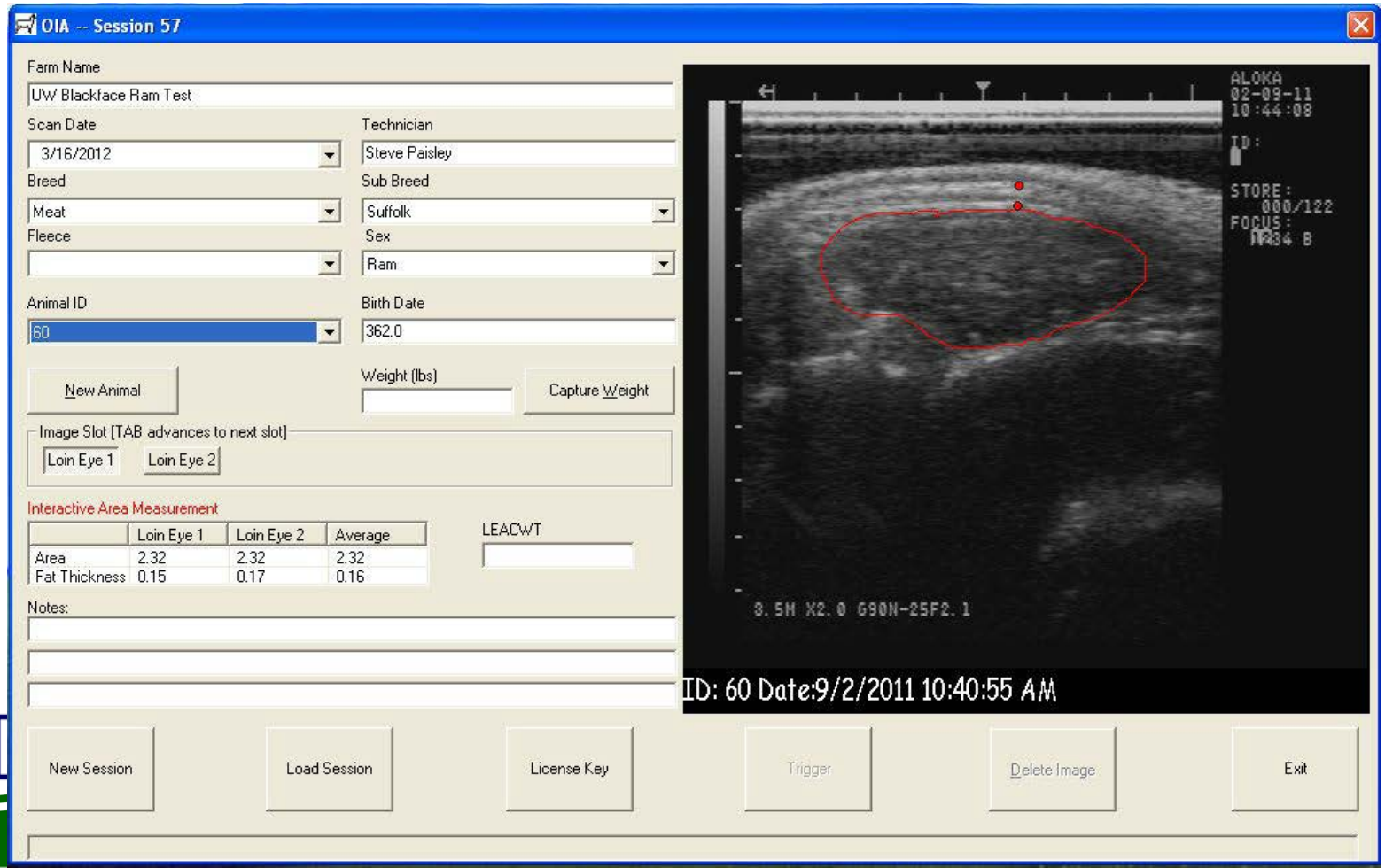
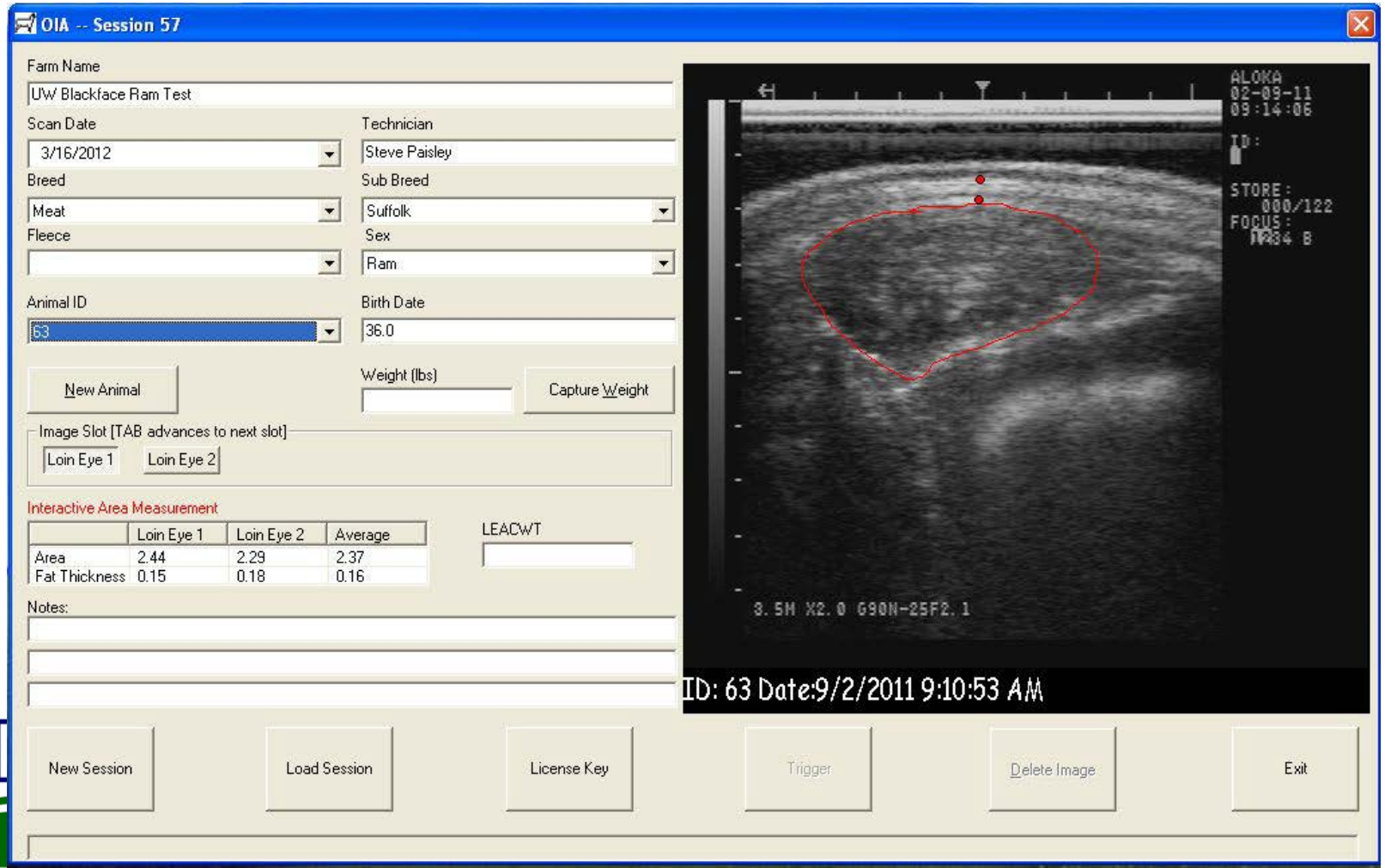
First “Small” loineye example



Second “Small” loineye example



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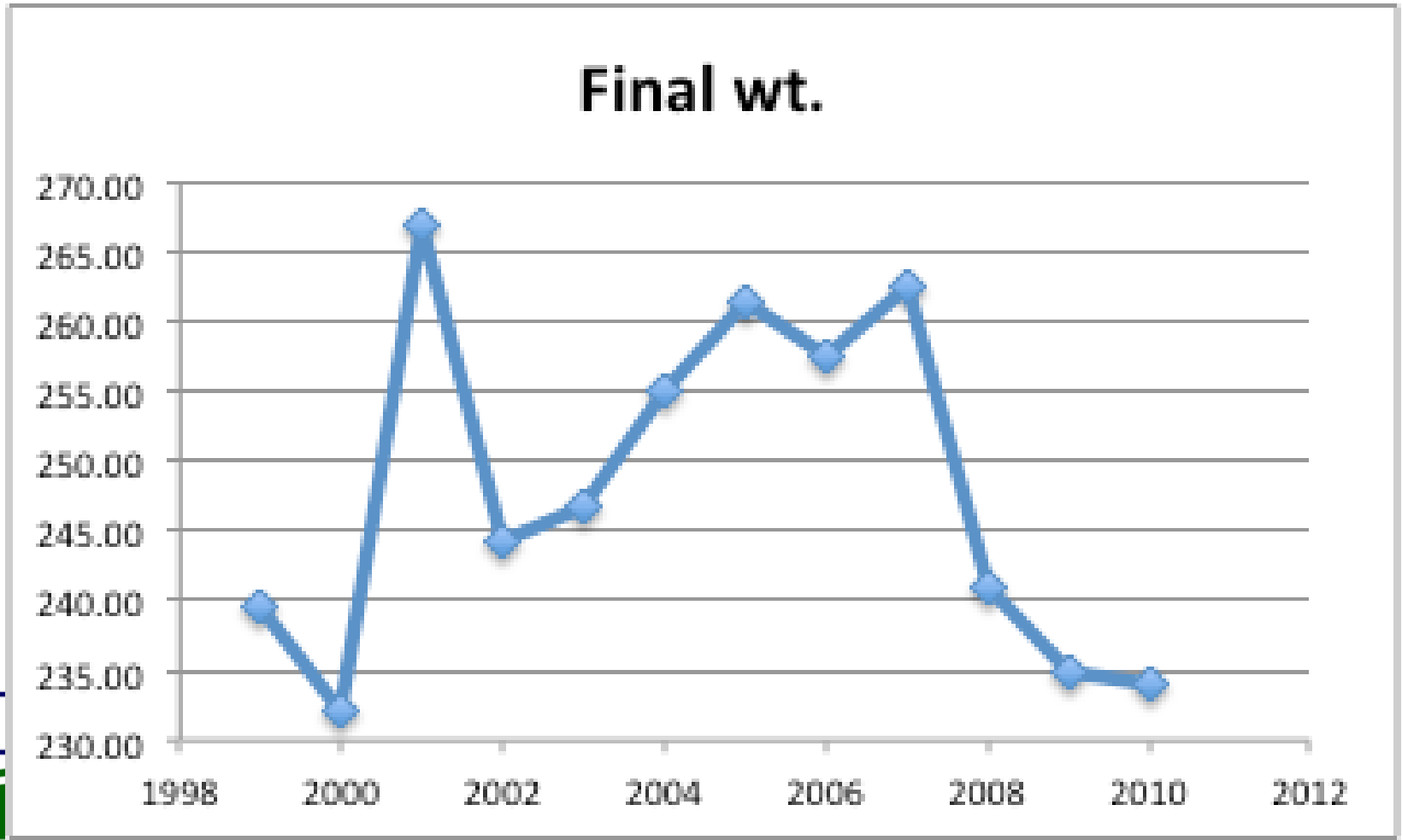
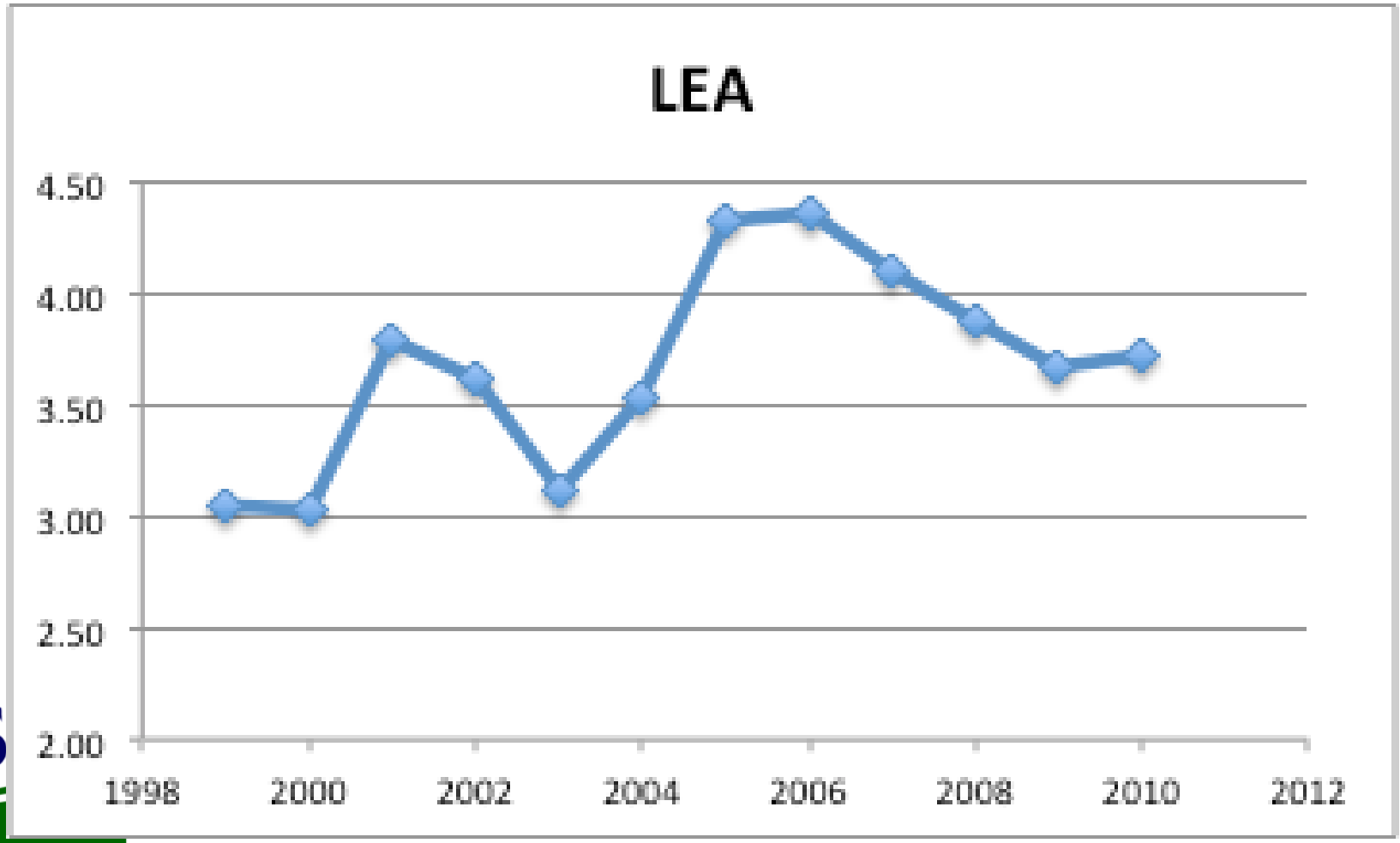
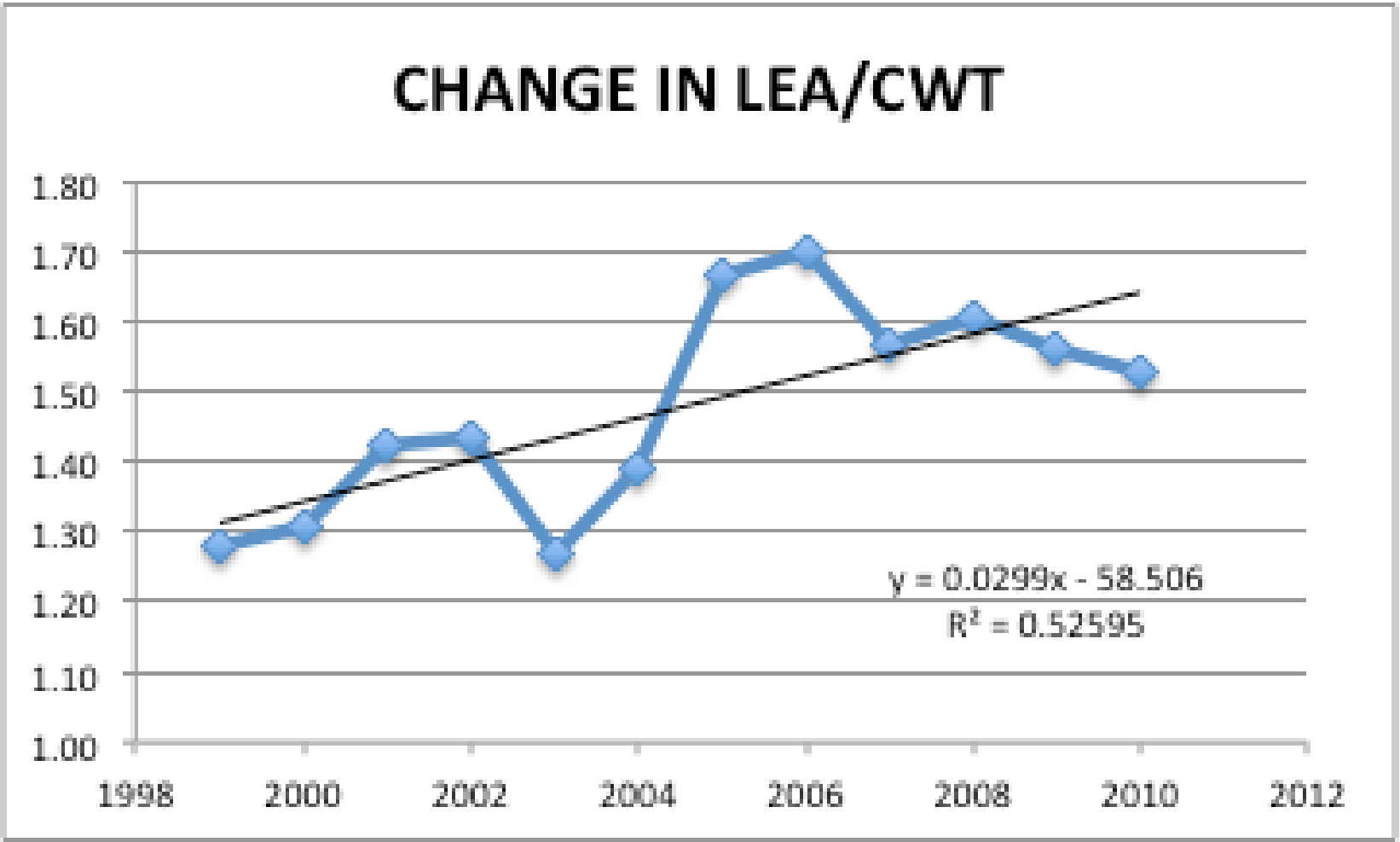
Ram weights – up and down



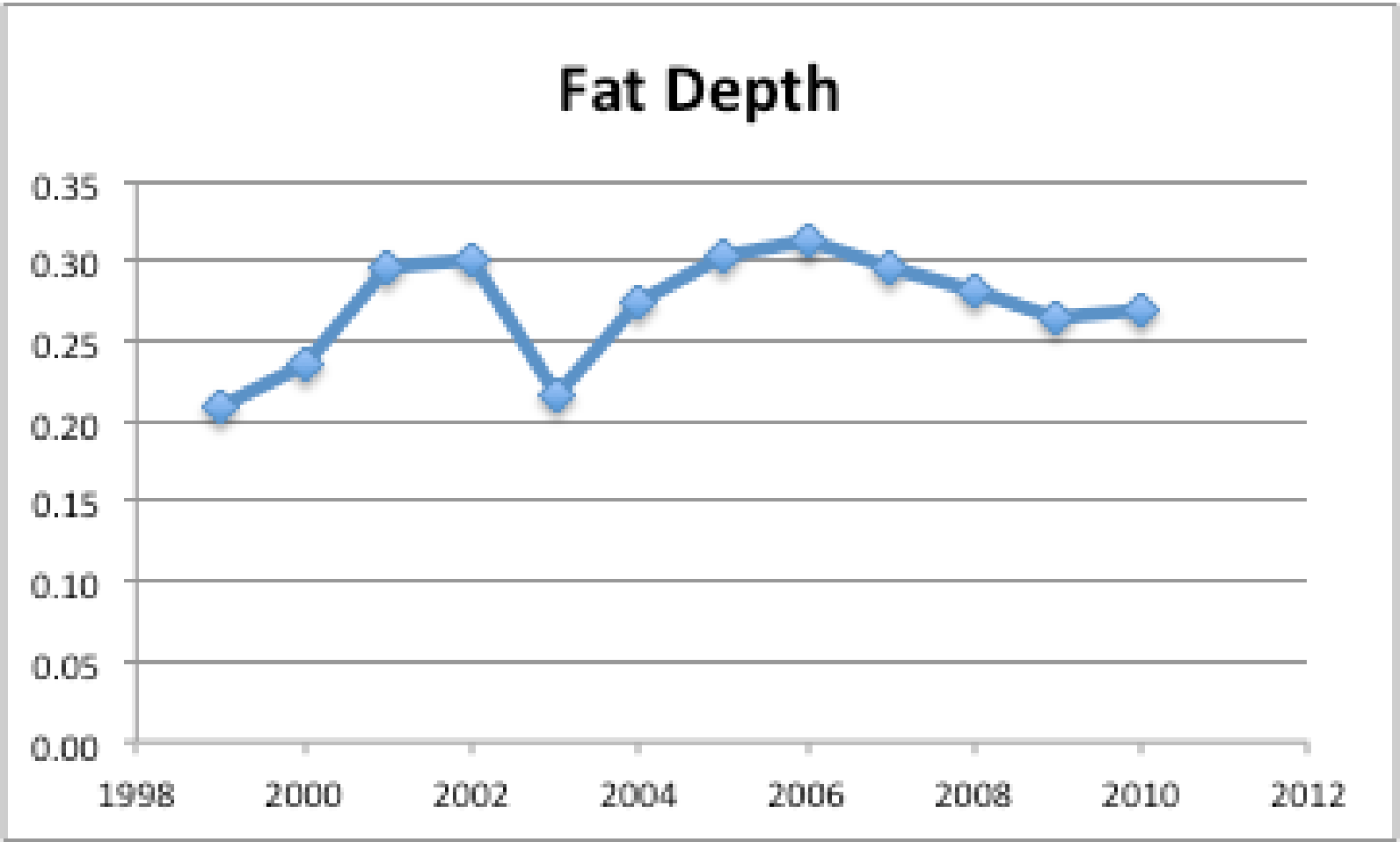
Ram Loin Eye Area Trending Up



Ram LEA/CWT trending up



Ram Fat Depth Fairly Constant



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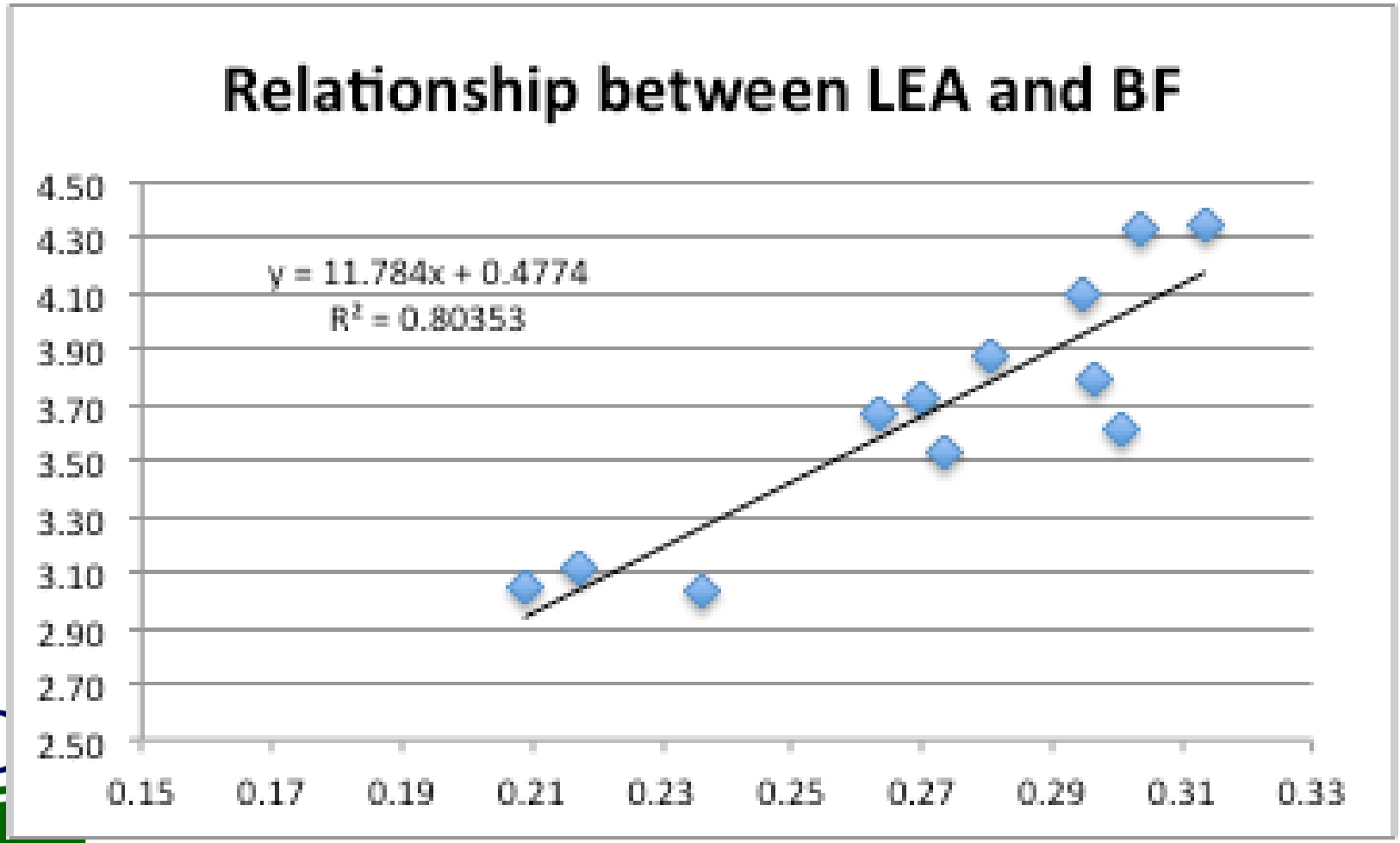
Ram Test Data, 1999 - 2010



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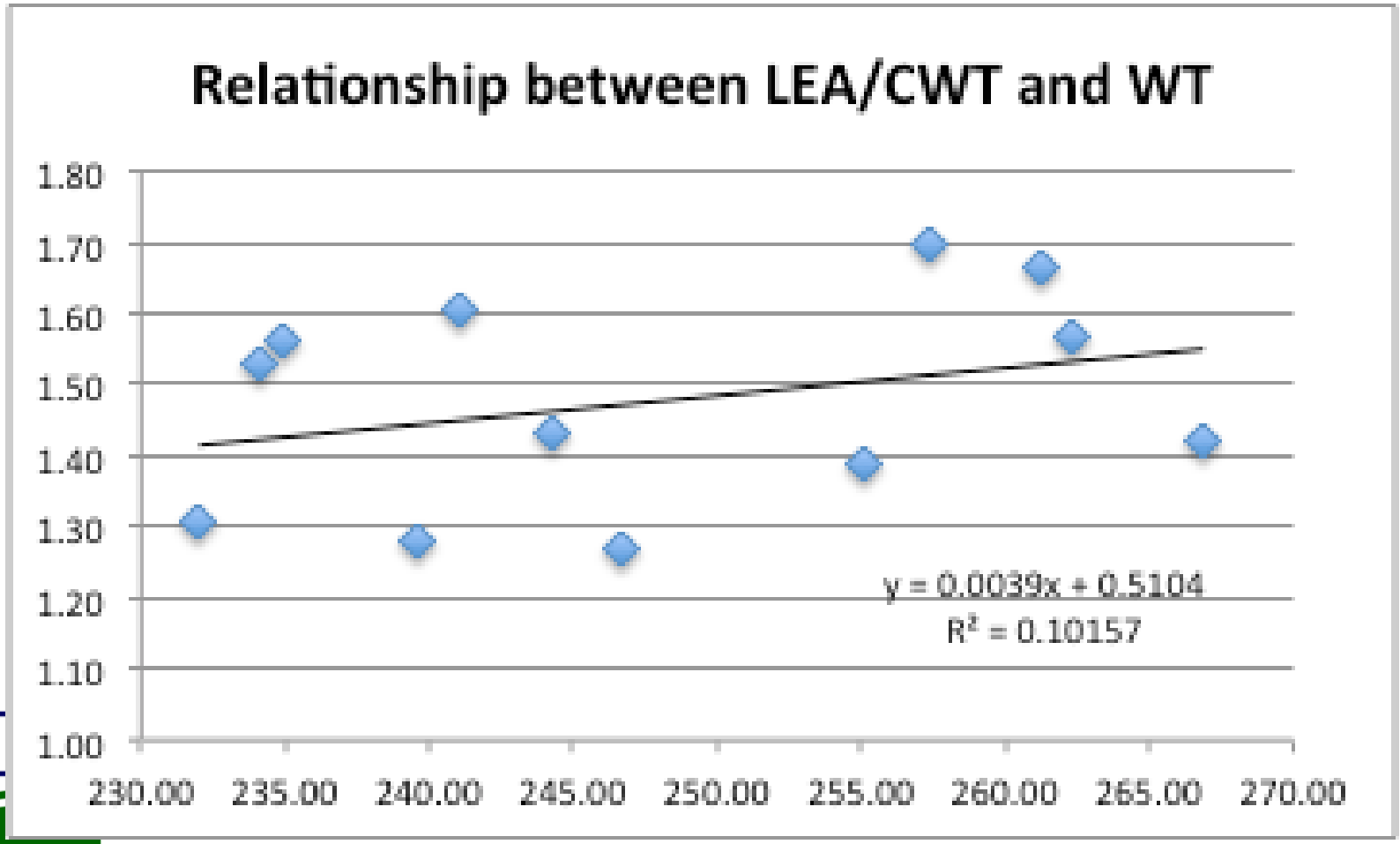
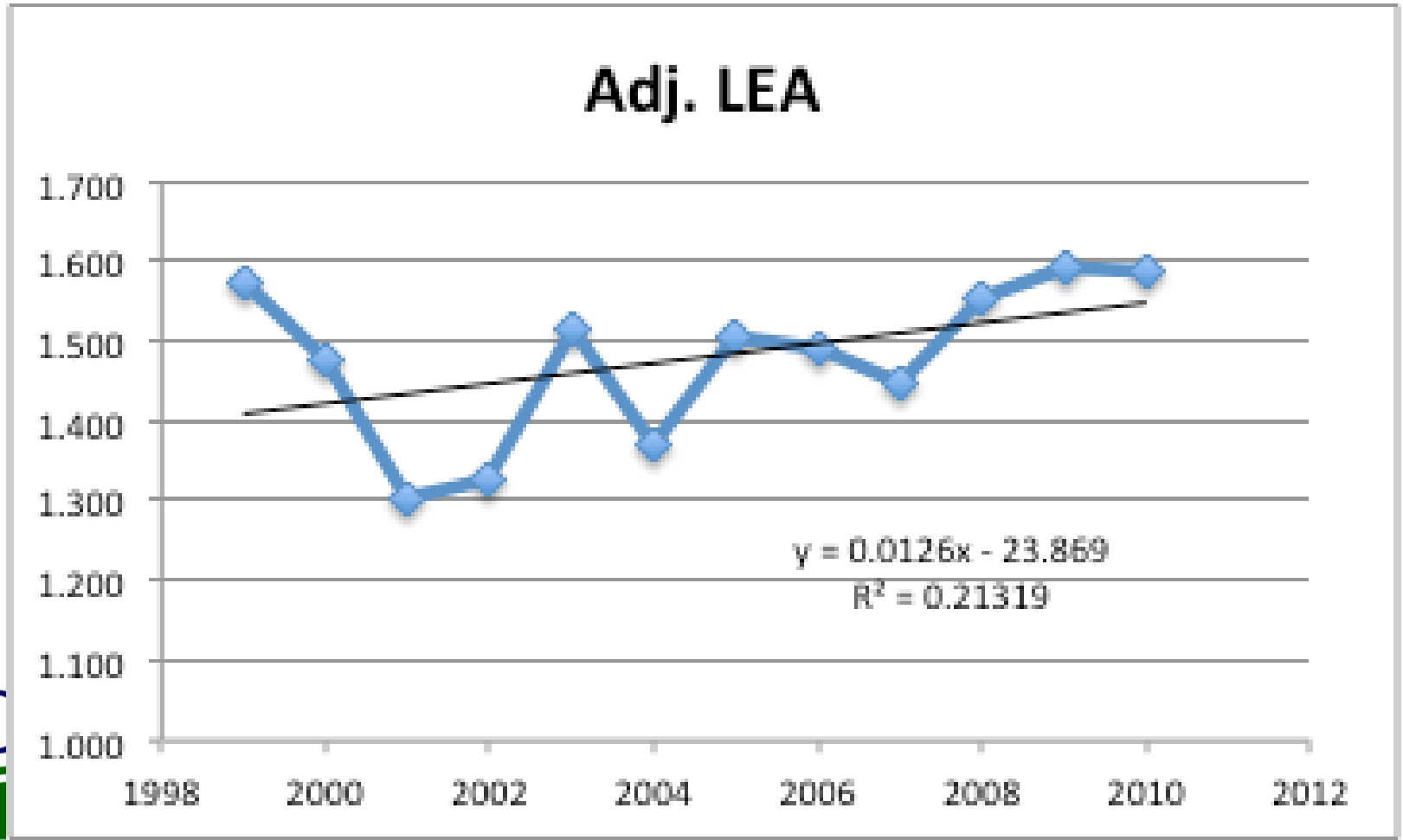


Ram Adjusted LEA Trending Up



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

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CSU Students on Spring Break??