

Feed Efficiency & Fertility **– The Shorthorn Heifer Project –**

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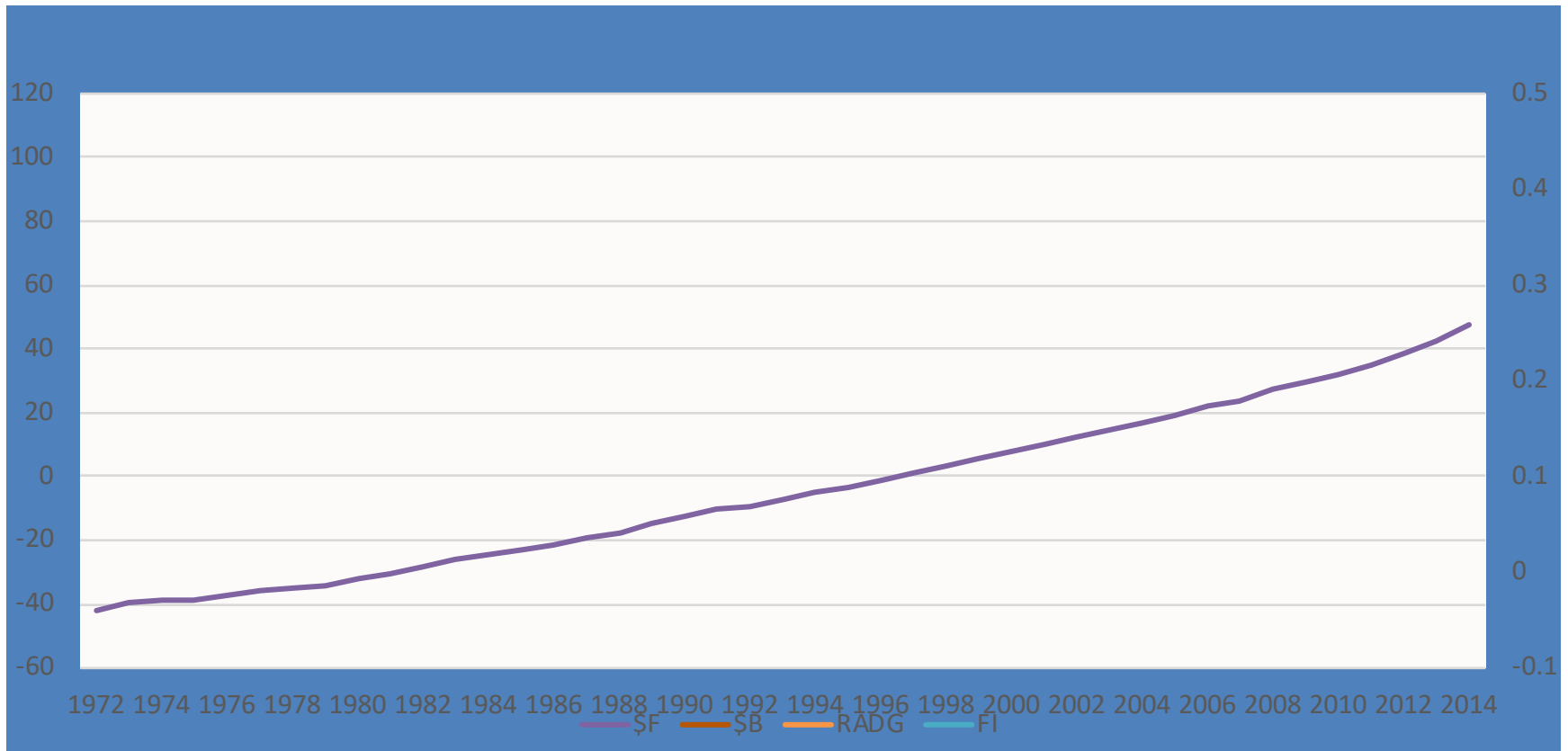
The idea.

- ~70% of the expenses occurred in a cow-calf operation is feed.
- Collecting research data on feed efficiency in Shorthorns needs to increase.
- Maternal efficiency and feed efficiency don't perfectly align.
- What if we monitor feed efficiency and measures of heifer fertility at the same time?

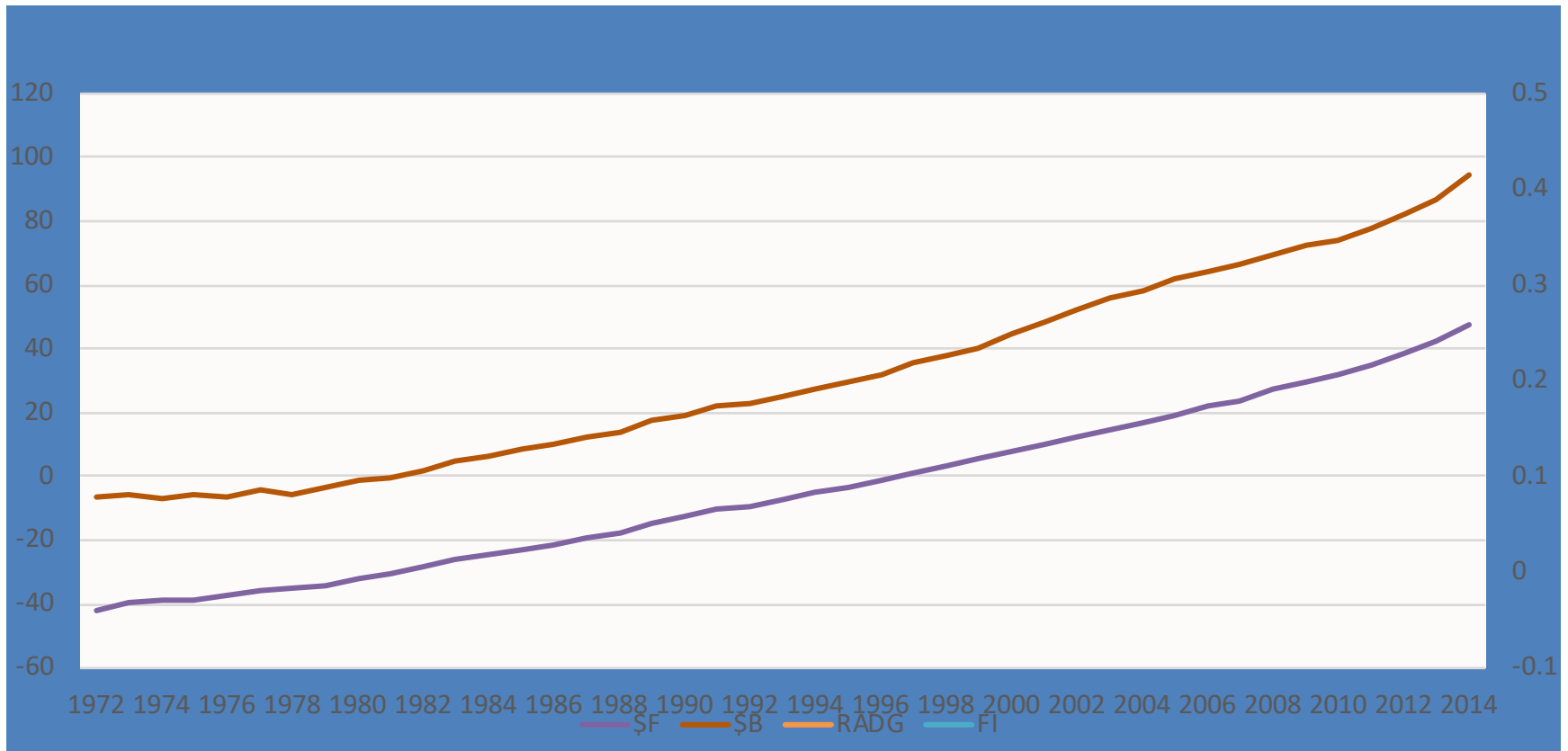
The questions.

- Where do Shorthorn females “rank” in feed efficiency?
 - The half-blood steer data suggests...good.
- Do heifers that eat less cycle later?
- Any correlation to other traits like Milk?
 - Other research suggests No.
- Will selection for reduced intake lead to poorer fertility and maternal function?
 - The swine research suggests YES

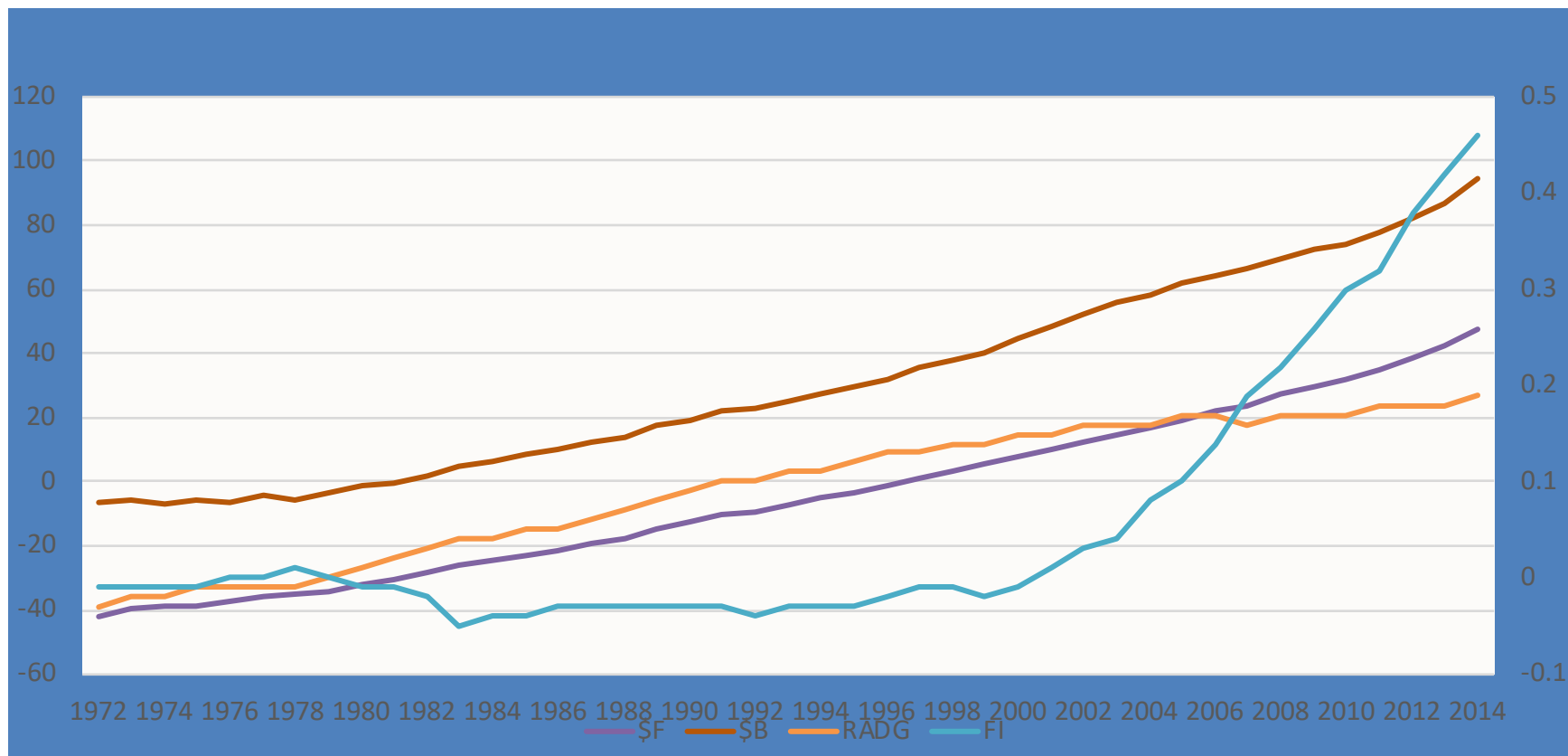
Breed Genetic Trends: \$F



Breed Genetic Trends: \$B



Breed Genetic Trends: F.I.



Goals of the Project

1. Develop a baseline for feed efficiency in Shorthorn females at a year of age
2. Monitor fertility in virgin heifers from weaning to yearling
 1. Blood hormone levels
 2. Reproductive Tract Scores (RTS)
 3. Estrus cycles and visible signs of cycling
3. Collect meaningful data that allows breeders and the ASA Board a direction forward on feed efficiency selection.

The Timeline...

- ✓ Delivered Oct. 18
 - ✓ 571lbs.
- ✓ Target gain 2-2.5lbs.
- ✓ Bunk acclimation
- ✓ November 12th
 - ✓ Feed Efficiency Trial started (65%DM)
 - ✓ Intake: 20-25 lbs. as-fed
 - ✓ DMI: ~15lbs.
- ✓ February 18th, 2020— trial ends

The Process...

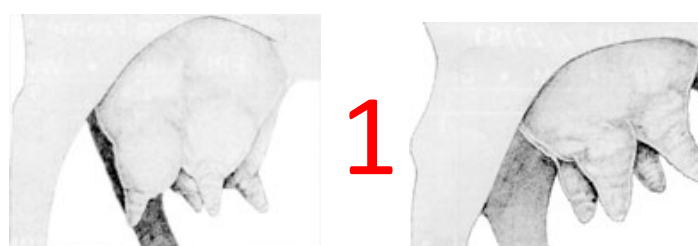
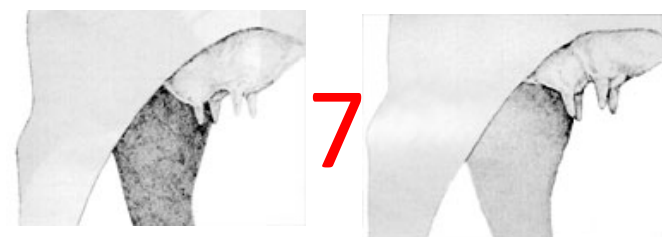
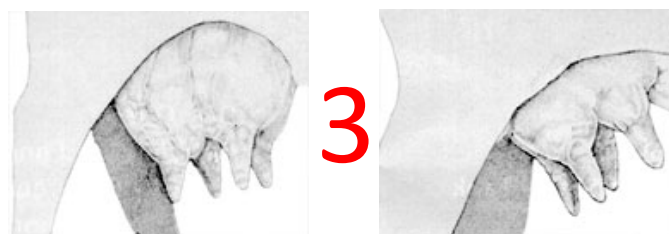
- ✓ Every 14 days (Doleman, DVM)
 - ✓ Empty Body Weight
 - ✓ Blood draw (progesterone)
 - ✓ RTS Score (beginning in December)
- ✓ At the beginning (Wall)
 - ✓ Carcass ultrasound
- ✓ In the middle (Dahlke)
 - ✓ Individual Feed Intake (FIMS)
- ✓ At the end (Lundy)
 - ✓ Yearling weight
 - ✓ Carcass Ultrasound (Rump Fat, 12th Rib Fat, REA, IMF)

Project Summary

- 7 pens of 6 head
 - Limited on facility availability
- We'll look for correlated traits.
 - Progesterone vs. DMI
 - Feed Efficiency vs. Milk EPD, etc.
- Publish what we find...even if its nothing.
- Opportunity for additional groups at Iowa State University
- ~\$450/hd

What's Next?

Udder Scoring



Beef Cattle are in last place!

Day 43

Day 57

Day 71

Day 85

1957
Chicken
Genetics



2001
Chicken
Genetics



Multi –trait, dollar indexes worked in chickens!