Developing a Cow Herd that Fits Your Ranch Environment

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What is the Environment?

- Forage availability
  - Oklahoma = 3 acres per AU to 25 acres per AU
- Forage nutritive value
  - Native tallgrass prairie in Oklahoma:
  - Protein = 2 - 16% of forage DM vs cattle requirements of 7 - 14%
  - Energy = TDN 48 - 75% of forage DM
  - Persistent macro and micro mineral imbalances

What is the Environment?

- Climate
  - Temperature
  - Humidity
  - Rain, mud
  - Ice
  - Snow
  - Sun and access to shade
  - Wind and access to break or shelter
- Parasites
  - Internal
  - External
- Disease challenges
- Distance to water (or between clumps of grass)
- Water quality
- Rock vs sand as influence feet and teeth

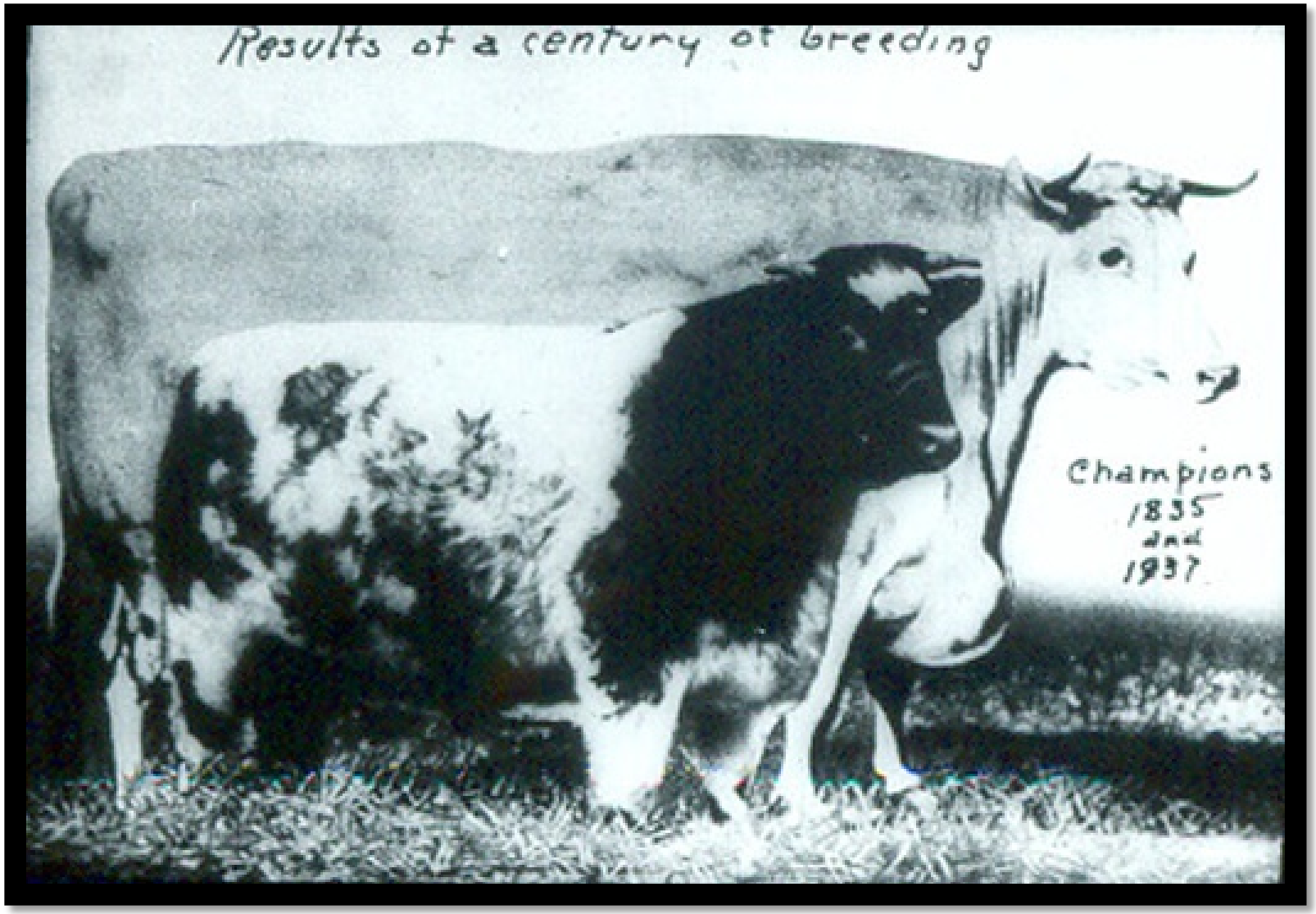
What is the Environment?

- Management
  - Animal handling
  - Grazing management
  - Inputs
    - Low input: survival of the fittest
    - Moderate input: expend time, effort and $ to remove ***some*** of the environmental impediments
    - High input: expend time, effort and $ to remove ***most*** of the environmental impediments

What is a good "match"?

- A cow that can
  - Wean a healthy calf every 365 days for 12 consecutive years
  - Problem free - requires no extra-curricular handling or medical treatment (including the owner)
  - Low cost - requires little supplemental feed in your grazing and management system
  - Utilize your country – travel and forage where the grass, "weeds" and brush haven't been grazed or browsed
  - Get too fat in the good years and thrive in the bad years (make you think you need more cows)
  - Produce steer calves with the capacity to gain on grass, convert in the 5's, gain 4 lb per day, never need treated, produce a large, high quality carcass…calves that have the capacity to build your reputation (hopefully a good one)

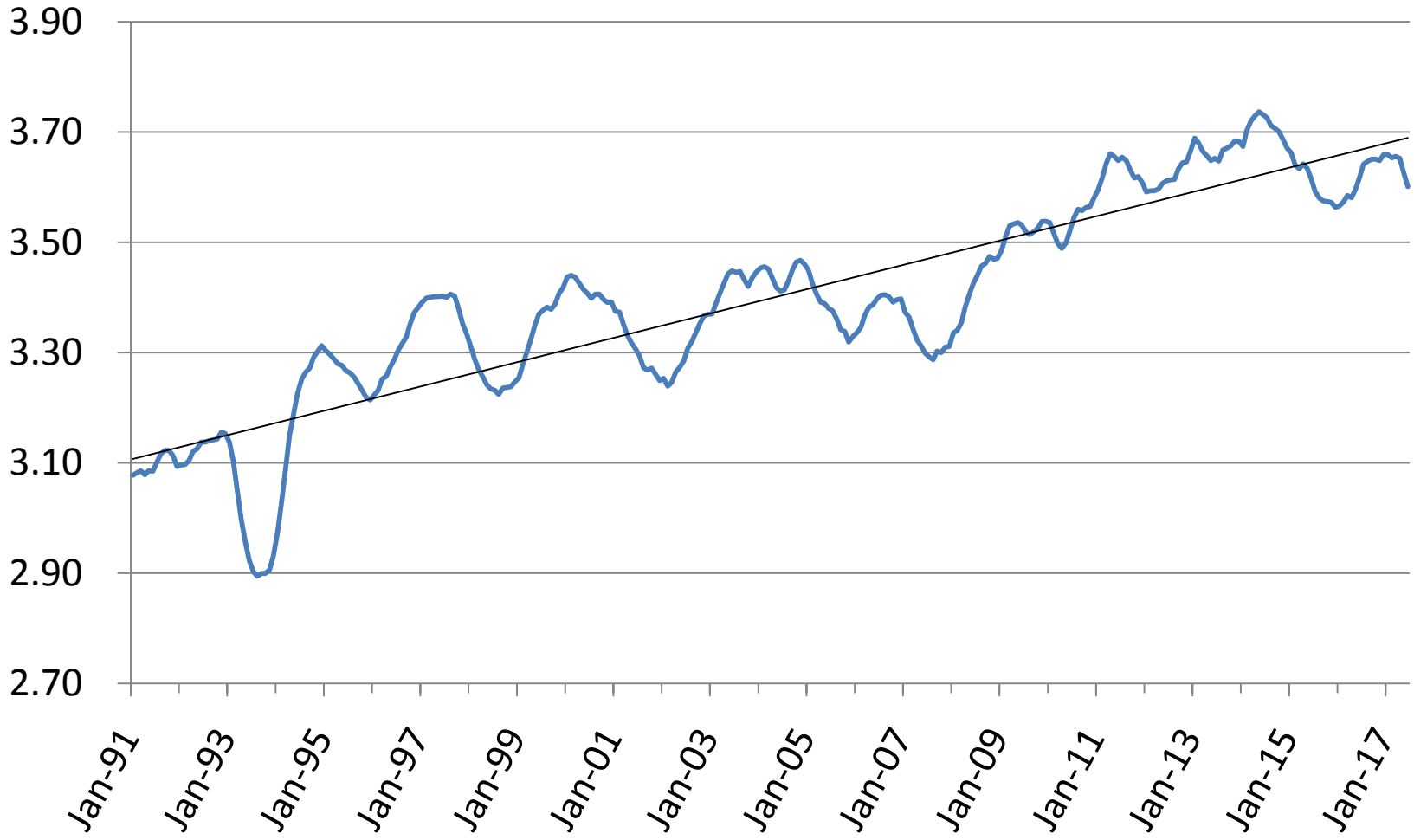
Cattle are Changing More Rapidly Today



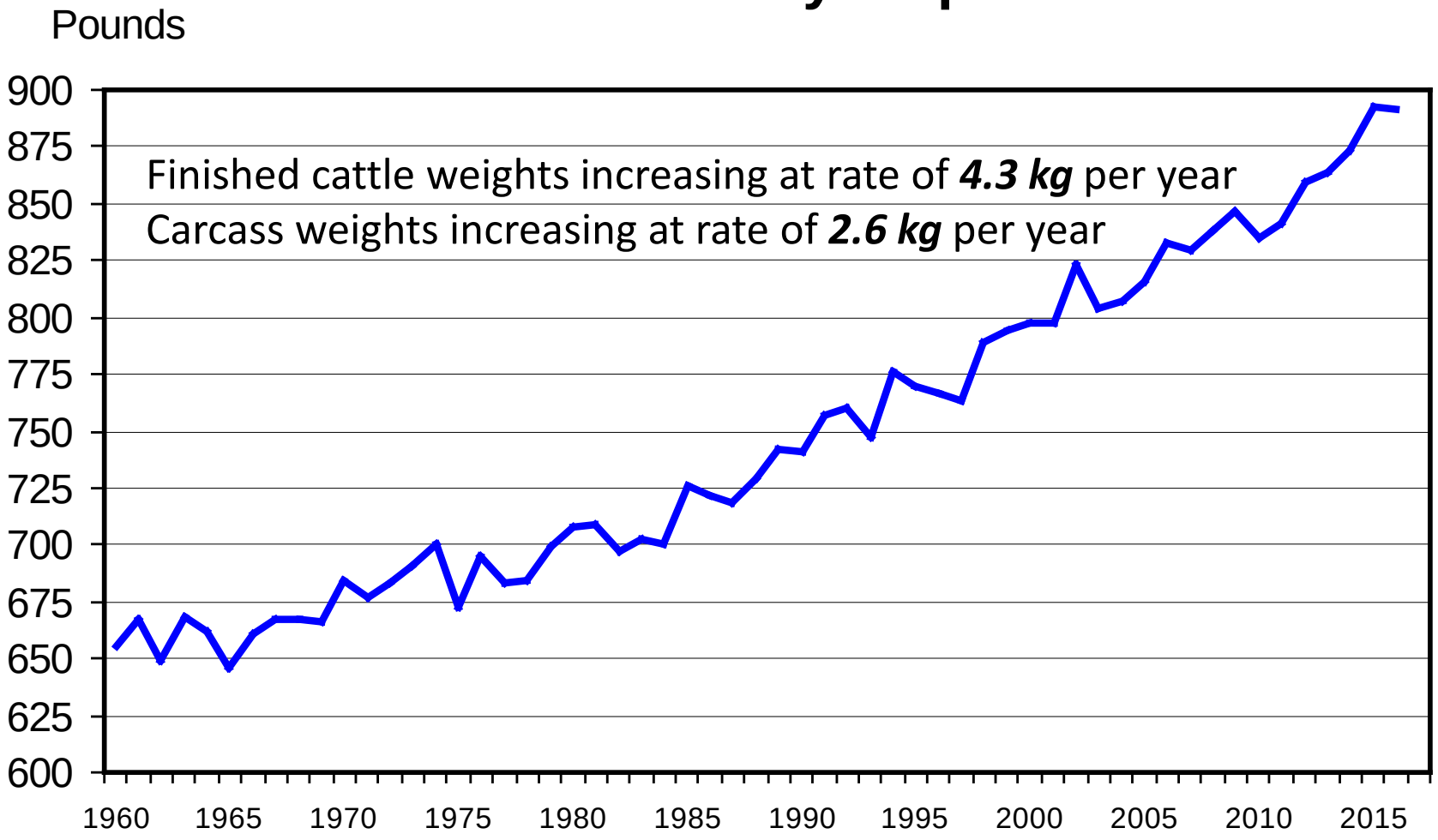
Post-weaning Perspective

Today cattle have tremendous capacity for post-weaning growth and carcass weight

Finishing Phase (Feedlot) Performance is Increasing

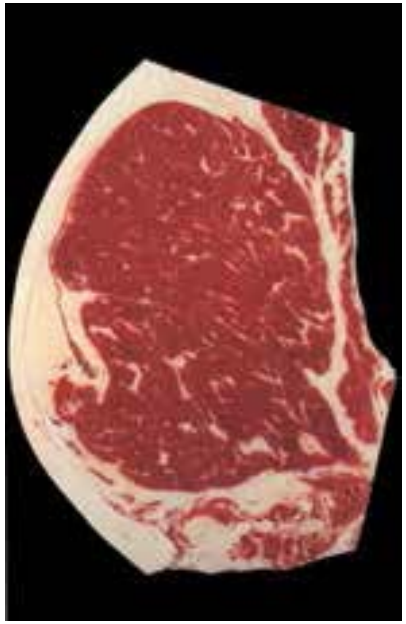


Steer Carcass Weight
Federally Inspected



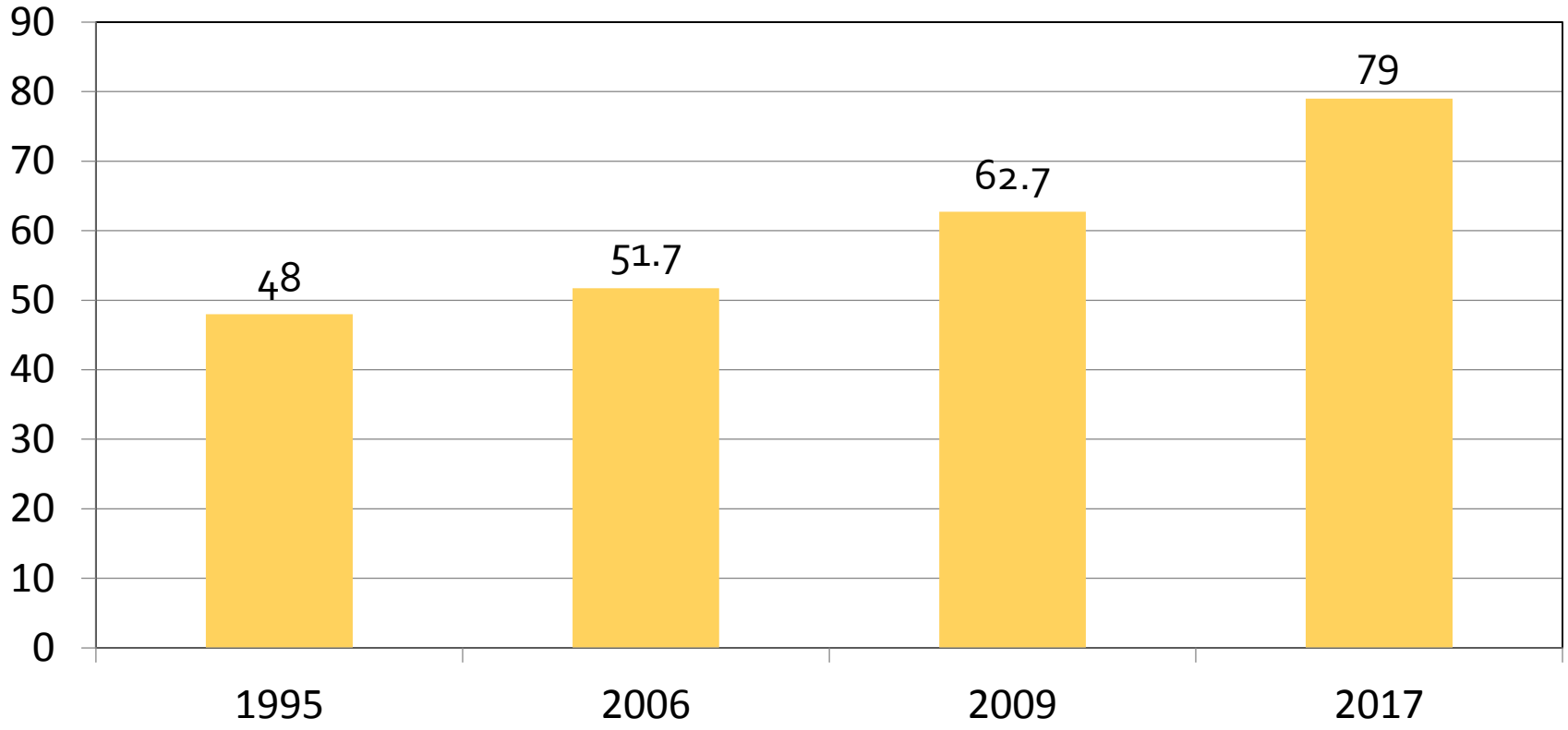
Post-Weaning Perspective

Cattle have tremendous capacity for marbling



Beef quality

% Cattle Grading USDA Choice and Above



Livestock Marketing Information Center, 2016

Cow/Calf Enterprise

Profitability and Performance Data

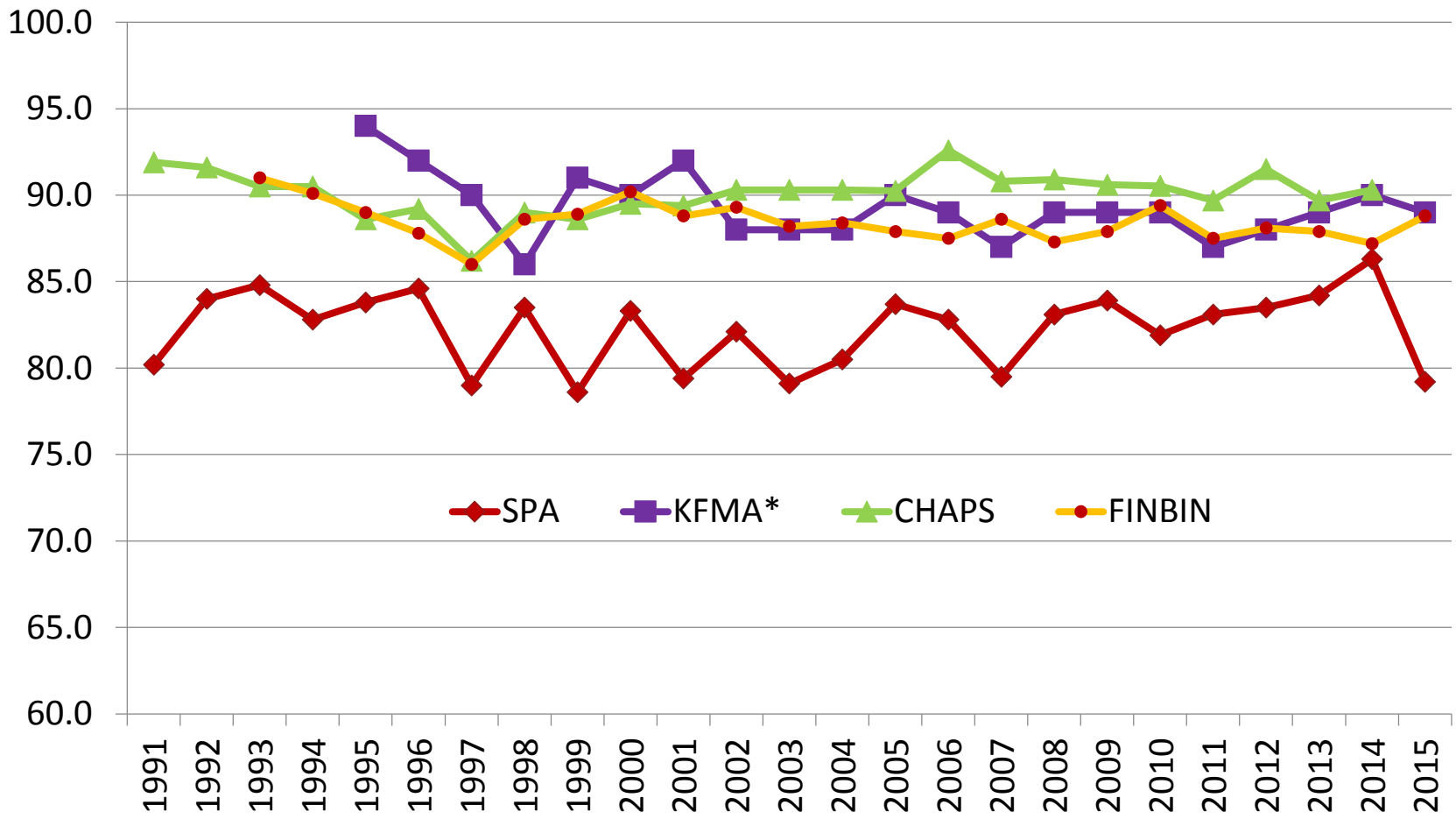
- Kansas: Kansas Farm Management Association (KFMA)

  Kevin Herbel
- North Dakota: Cow Herd Appraisal Performance Software (CHAPS)

  Dr. Kris Ringwall
- New Mexico, Oklahoma, Texas: Standardized Performance Analysis (SPA)

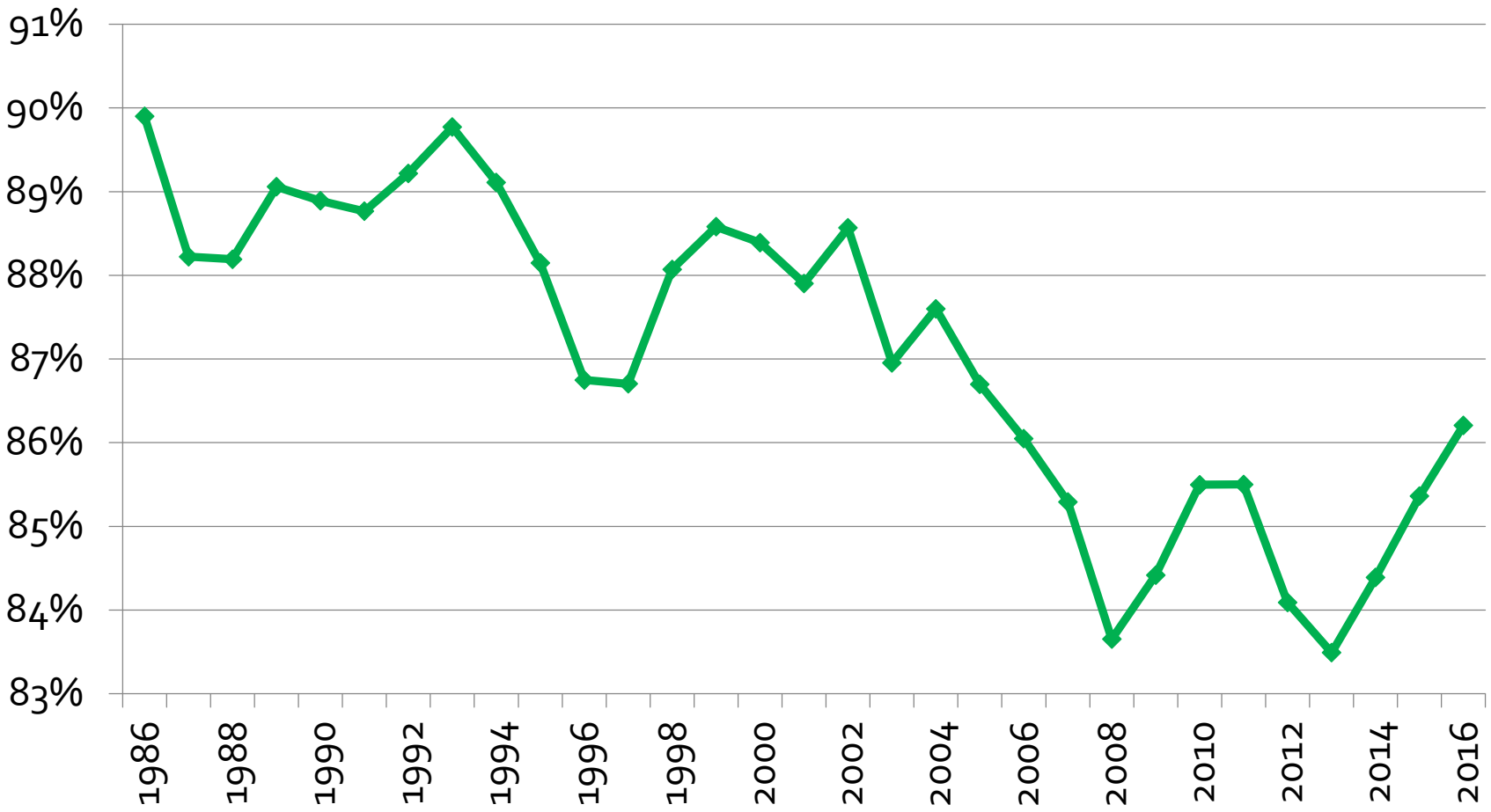
  Dr. Stan Bevers
- Upper Midwest (FINBIN), Center for Farm Financial Management, University of Minnesota

Weaning Rate in Commercial Cow/Calf Operations



Beef Calf Crop Percent

Estimated from USDA NASS Data



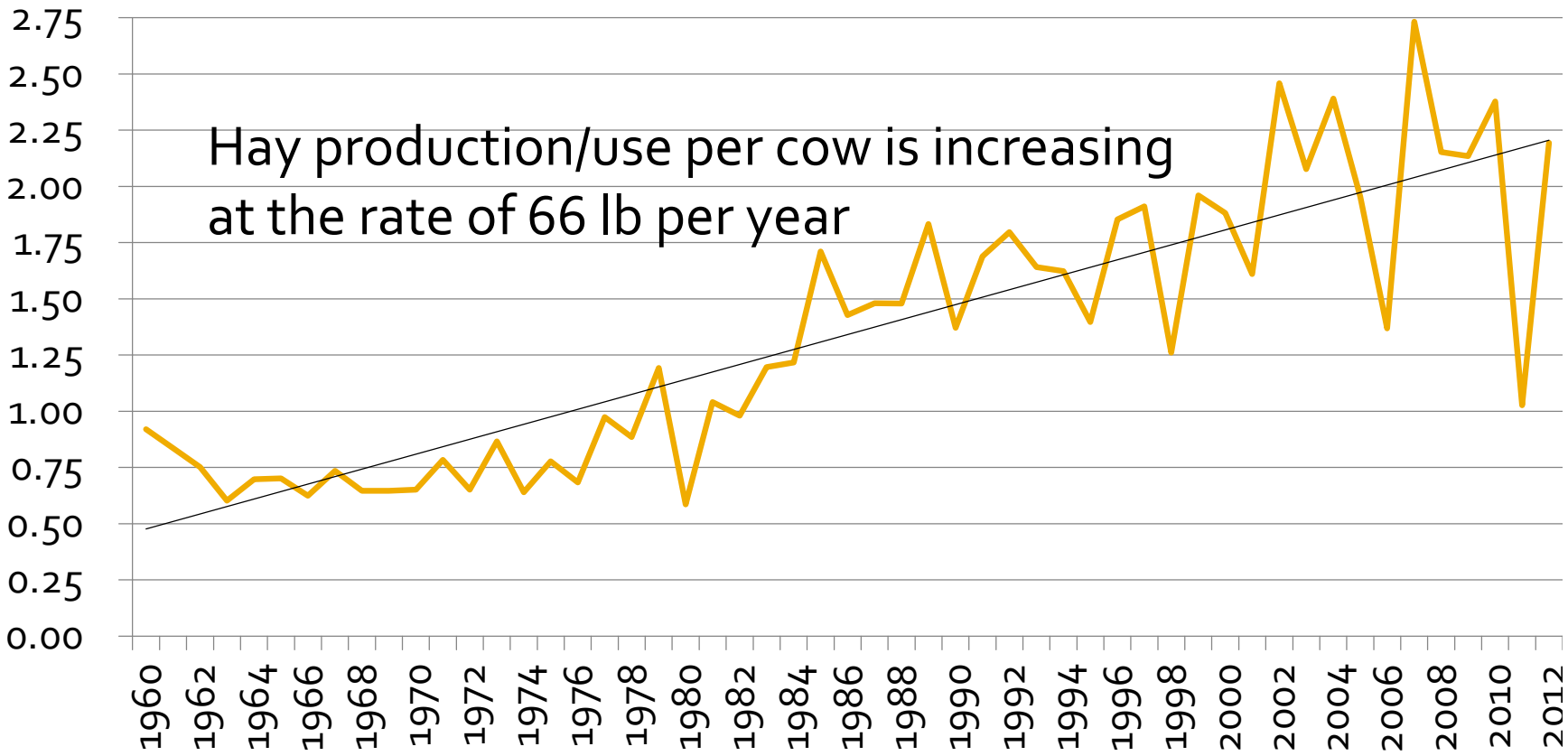
Source: Dr. Derrell Peel, Oklahoma State University

Reliance on Grazing vs Harvested Feed/Forage

Photo Courtesy of Oklahoma State University

Hay Production: Oklahoma

Tons Per Beef Cow



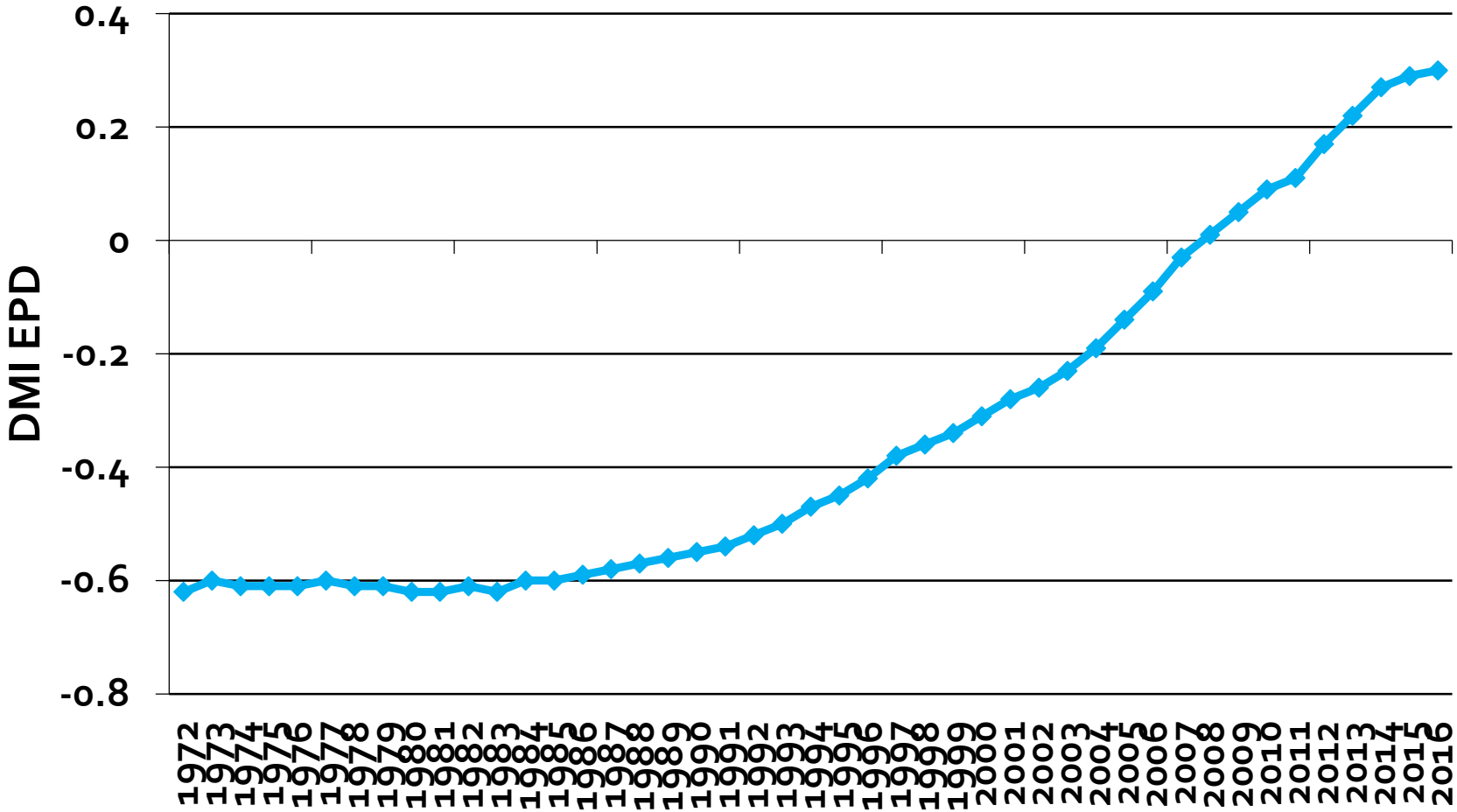
Summary

- When cattle producer's are provided effective science-based tools, THEY USE THEM
- We have a tendency to overdue things
- Dramatic improvement in ***post-weaning performance***, ***total beef produced per cow***, and ***carcass quality***
- In the meantime, commercial cow herd efficiency, particularly fertility have made no progress
  - Exceptions: dramatic improvement in frequency of dystocia
  - Some improvement in longevity in those breeds

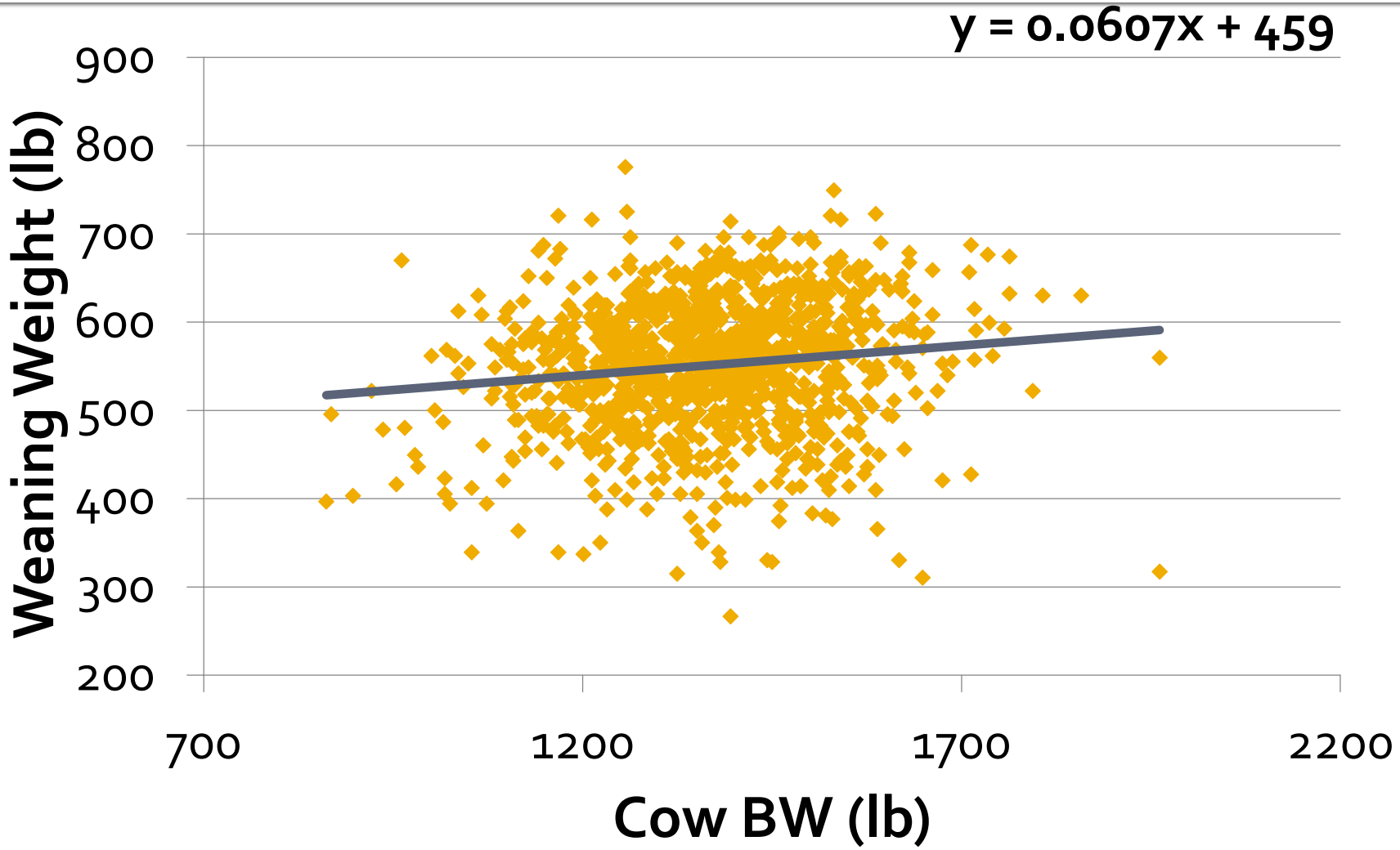
Opportunity

- Our current level of beef production can be sustained with
  - 20% lower feed inputs
  - 30% lower methane production
  - 17% lower N, P and K output
- Selection for feed intake and residual feed efficiency is now a reality
  - EPD's for feed intake and residual feed efficiency now available for Angus, Hereford, and Simmental

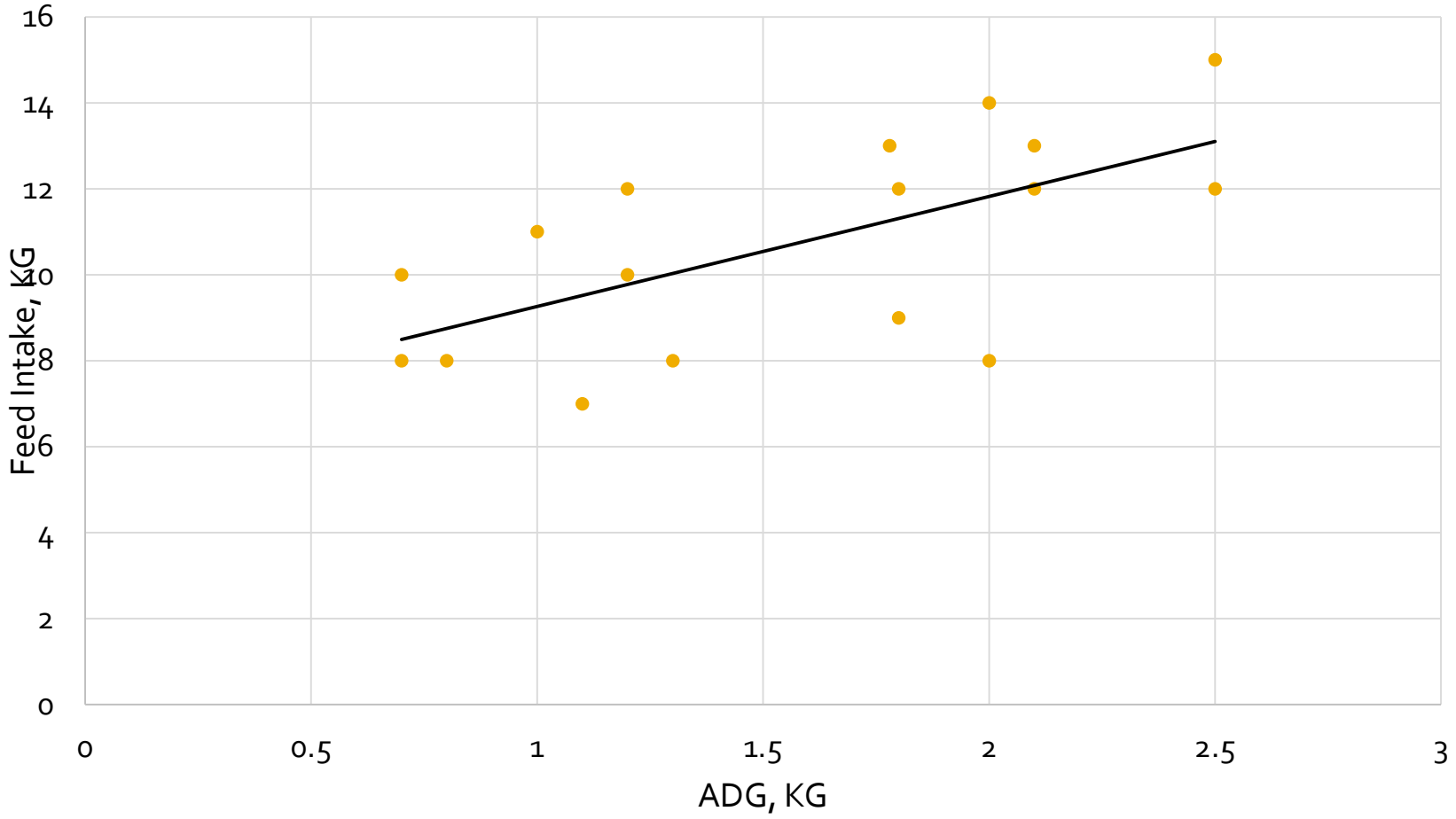
Dry Matter Intake
Angus



Calf WW vs Cow BW



Residual Feed Intake



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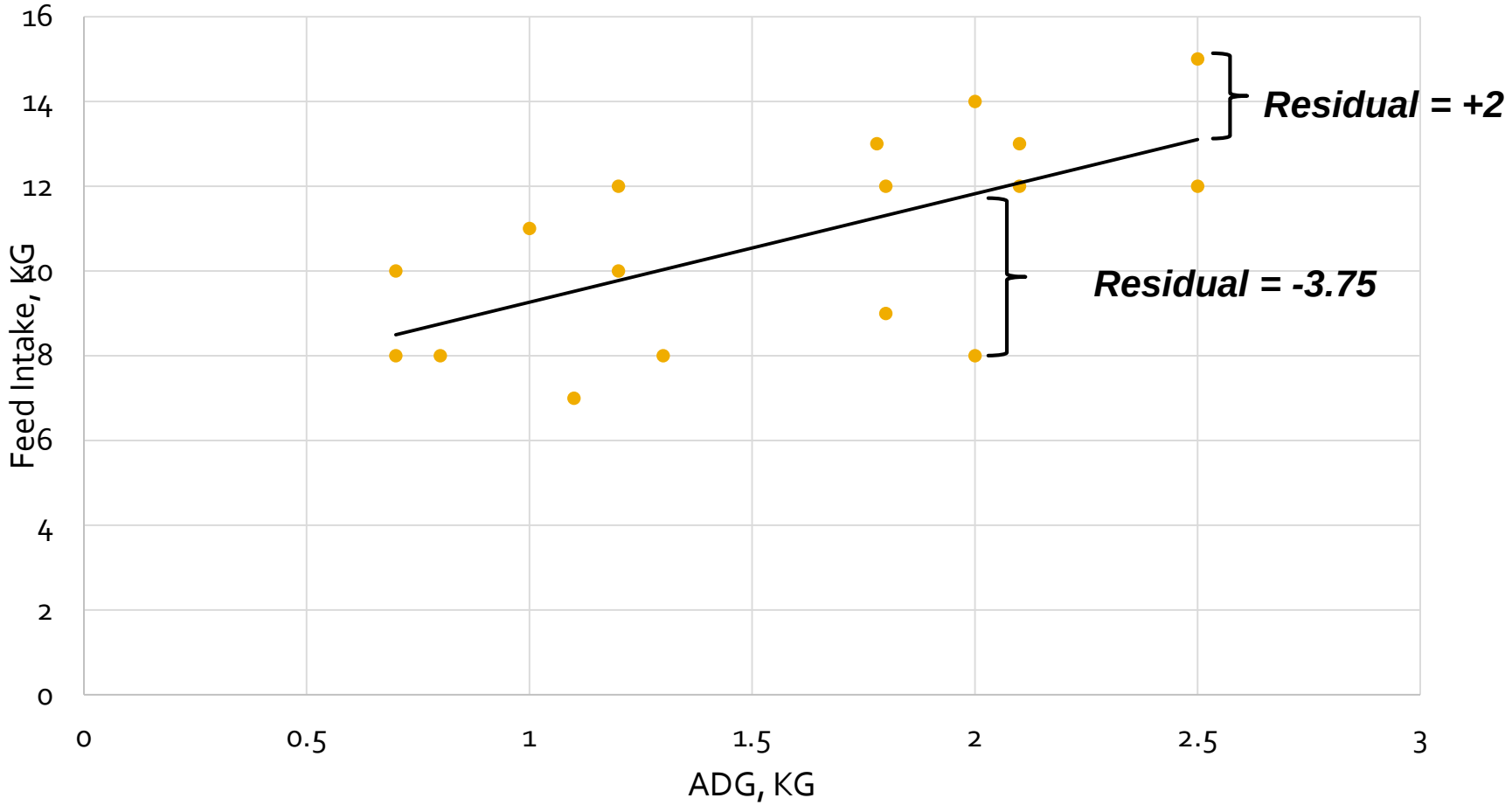


Specialized Equipment

GrowSafe

Insentec

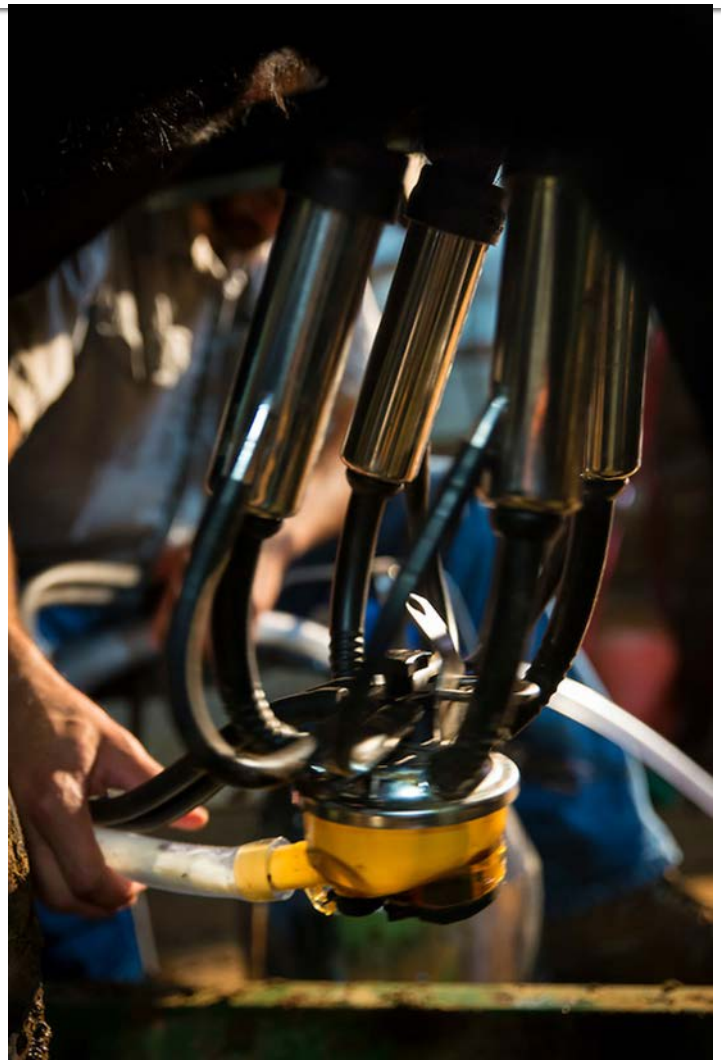
SmartFeed

How about the cow?


Photo Courtesy of Oklahoma State University

Milk Production

- One OSU cow herd, no intentional selection for higher milk EPD's
- 2015, 2016 milking machine after calf removal
- Peak yield (May) = 31 lb



Consider:

There is a limit of milk production that YOUR forage can support?

Sharing the Focus

- Requires long term commitment
  - ***Moderate*** size, growth and milk
  - Cull open cows
    - Be willing to challenge them
    - Resist the temptation to gradually modify the environment
  - Keep only early-born heifers
  - Keep only early-bred heifers
  - Buy (or keep) bulls out of cows that always calve early

Sharing the Focus

- Find source of seedstock that:
  - Puts **PRIORITY** on ERT's related to fertility and forage use efficiency
  - Culls open cows
  - Keeps only early-born heifers
  - Keeps only early-bred heifers
  - Puts environmental pressure on their cattle – weed out those that do not "match"
- Purchase bulls out of cows that are **challenged in an environment similar to yours**, have never missed a calf, and calve early

Opportunity

- Genetic tools will finally be available to make meaningful improvement in fertility
  - Longevity EPD's have helped in those breeds
  - Genomic discoveries developing now
  - Hereford, Red Angus, Angus working hard to roll out new fertility EPD's

SUSTAINED COW FERTILITY (SCF)

The Sustained Cow Fertility (SCF) results, reported in percentage units, are oriented such that larger breeding values reflect sires whose daughters calve annually for more years.

AHA Releases New Fertility Traits

The American Hereford Association (AHA) is in its 15th year of Whole Herd Reporting. Recently, this program allowed for the development of two new fertility traits, Heifer Calving Rate (HCR) and Sustained Cow Fertility (SCF), which have been released as a research analysis on the AHA website at *Hereford.org*.

These two traits will become part of the full fertility expected progeny differences (EPDs).

Heifer Calving Rate

The Heifer Calving Rate EPDs are produced from an animal model genetic evaluation for 293,313 animals encompassing a six-generation pedigree. Heifer calving records were analyzed as a categorical trait in which more than 98,000 records were used in the binary analysis as calved at first calving between 600-800 days was used as part of edits along with checks for contemporary group variation. Heifer calving rate for the dataset was 73%, under the criterion that the heifers calved by 800 days of age. The heritability for heifer calving rate is .15, which is consistent with the magnitude of estimates for lowly heritable reproductive traits but still allows for genetic progress.

SUSTAINED COW FERTILITY (SCF)

Both bulls have 200 plus daughters in production

One bull SCF = 170
One bull SCF = 57

Opportunity

- Explore post-weaning performance, carcass quality and production systems. ***You cannot rely on moderation of cow size as your only contribution…not for long.***
- Find your weaknesses…then go to work correcting and improving

Photo Courtesy of Oklahoma State University