Breeding to Beef Bulls: Costs and Benefits

Colten Green

National Account Manager

Genex Cooperative, Inc.

Modesto, CA

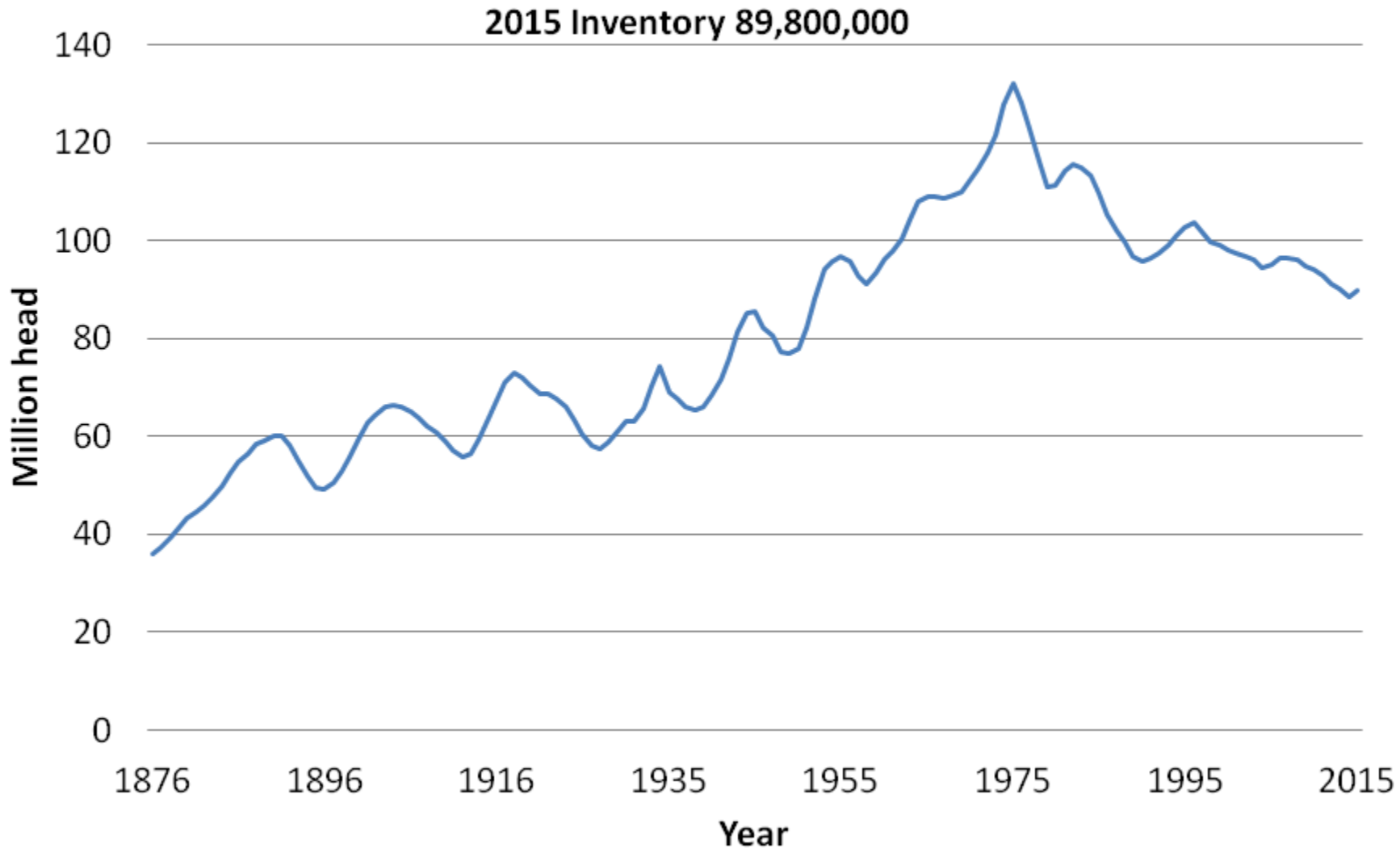
Missouri native

Source: mom (Camden county 7/1/15)

California resident

Source: www.nbcbews.com

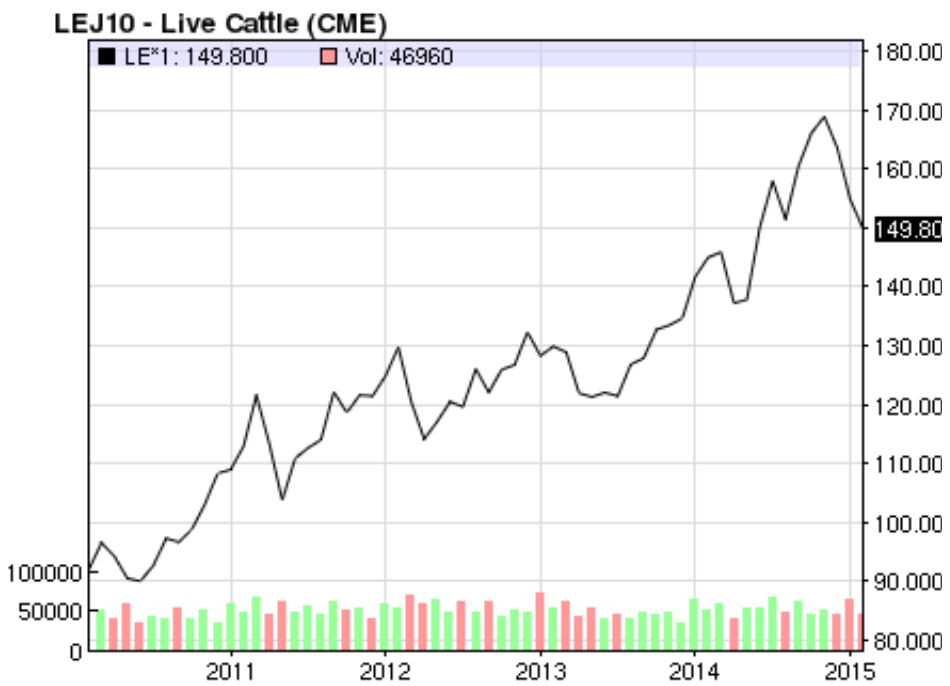
January 1 U.S. Cattle Inventory
1876-2015

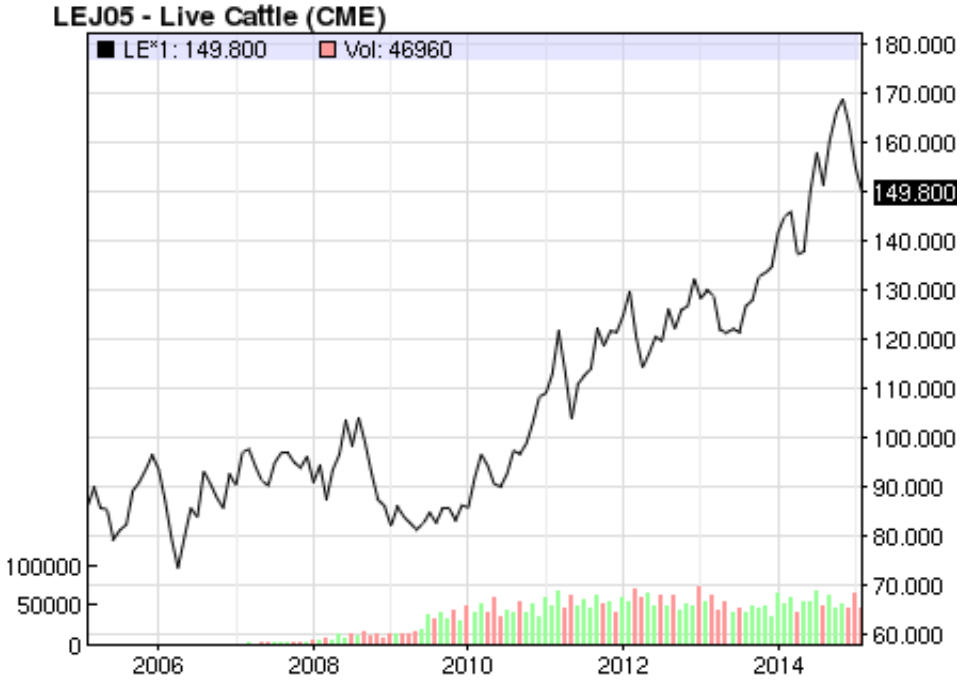


Genex

USDA-NASS
1-30-2015

Live cattle prices

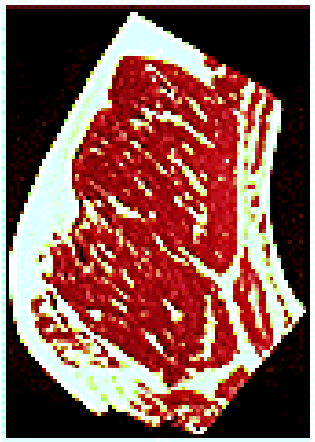




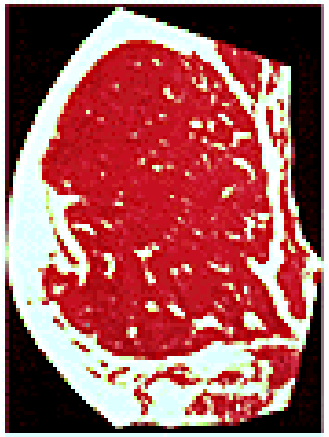
Source: www.nasdaq.com

Carcass comparison (NBQA 2011)

	Bos indicus (n=159)
USDA Yield Grad	2.4[b]
USDA Quality G	689[b]
HCW, lbs	739.0[c]
Marbling Score[2]	424[c]



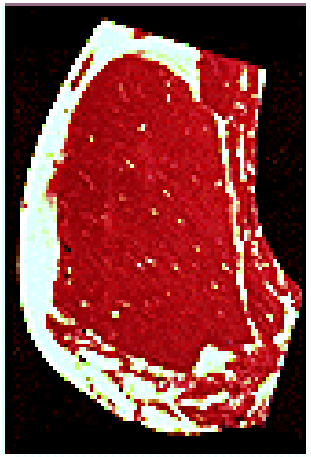
Moderately Abundant



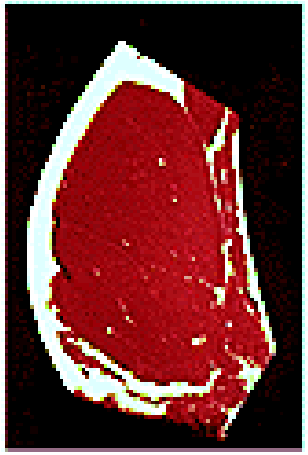
Slightly Abundant

Moderate

Modest



Small



Slight

[1]400 = Commercia

[2]300 = Slight, 500

[abc] Different at P<0

nt

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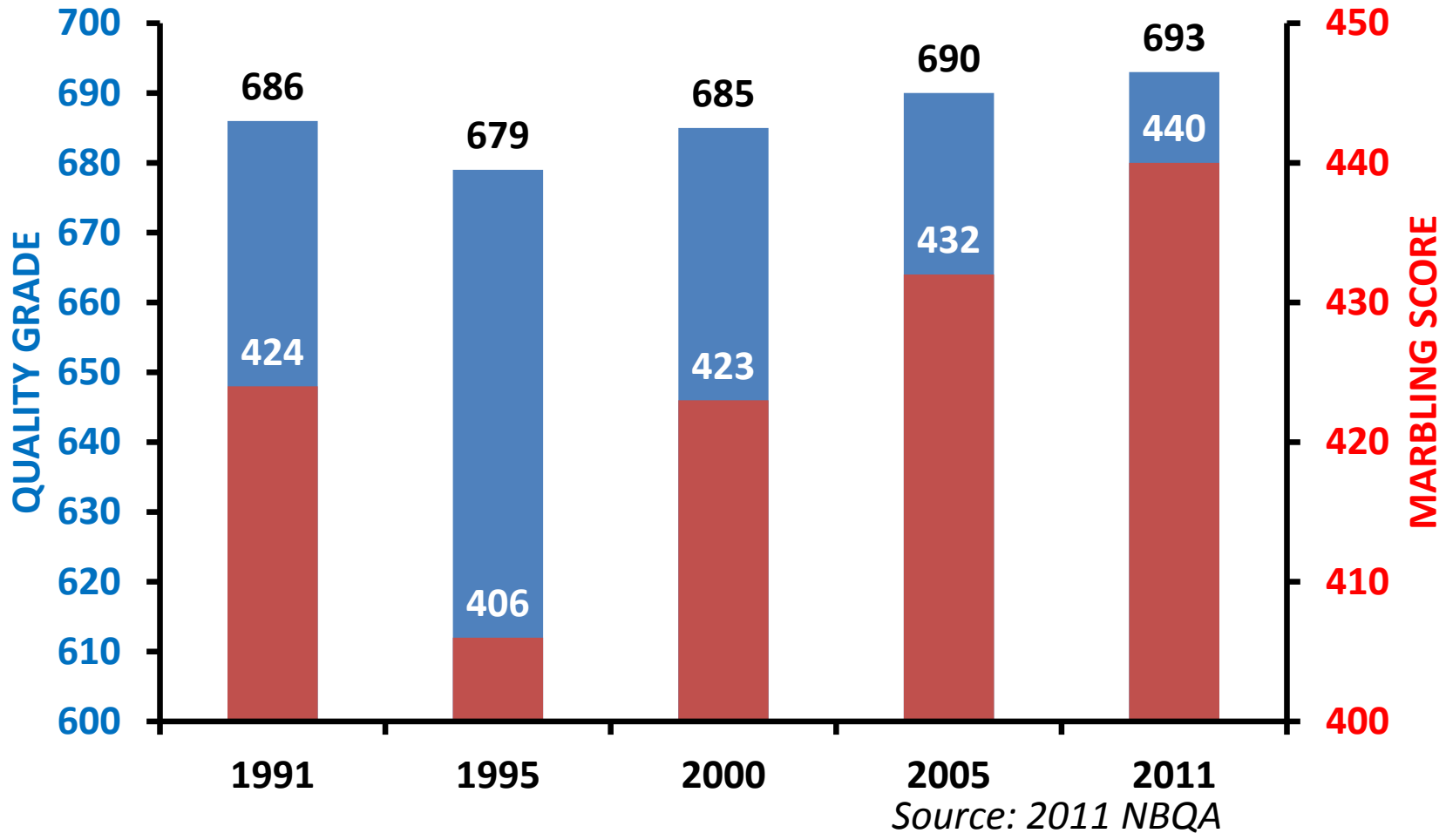
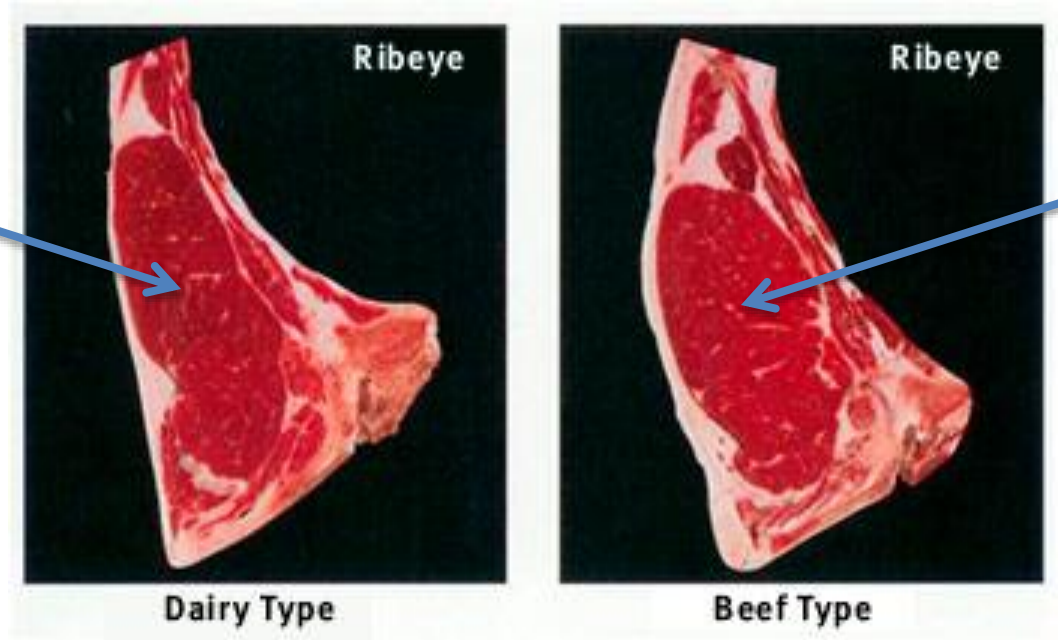
Demand for quality & marbling



Source: 2011 NBQA

So why don't we get premiums??

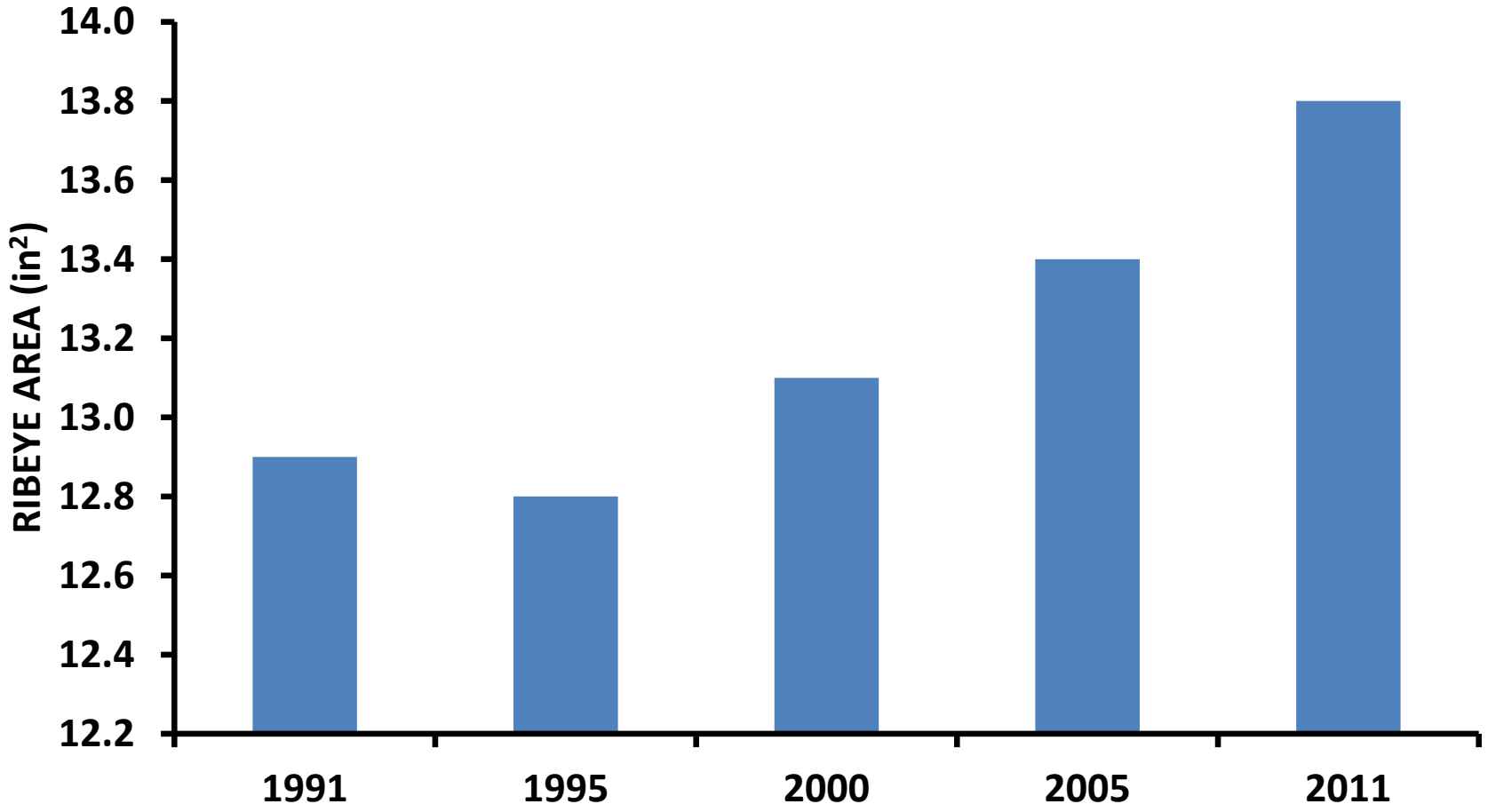
12.3 in^2



13.9 in^2

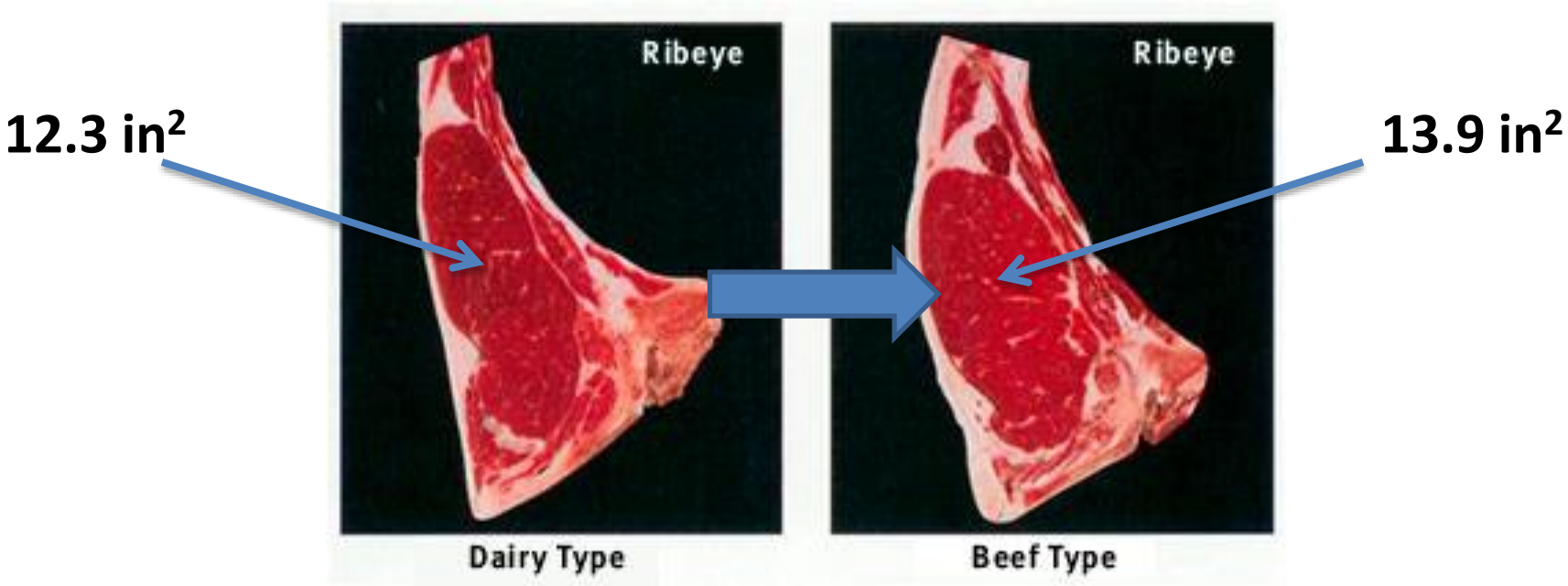
"dairy type carcasses were those in which the conformation and overall muscling were angular and thin in relation to carcass size" NBQA 2011

You can keep your *petite* filets



Source: 2011 NBQA

How to move from "Dairy Type" to "Beef Type"

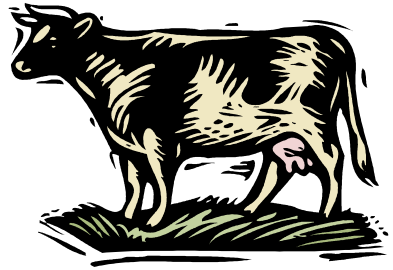


Option A: Use of β-Agonist (e.g. Zilmax© or Optaflexx©)

Option B: Use of "terminal cross" sire

Terminal cross

Strengths:
- **Dressing %**
- **Ribeye Area**
- **ADG**
- **Homozygous Black & Polled**



Strengths:
- **Quality Grade**
- **Marbling**

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Profitpartner

Americans like branded food products

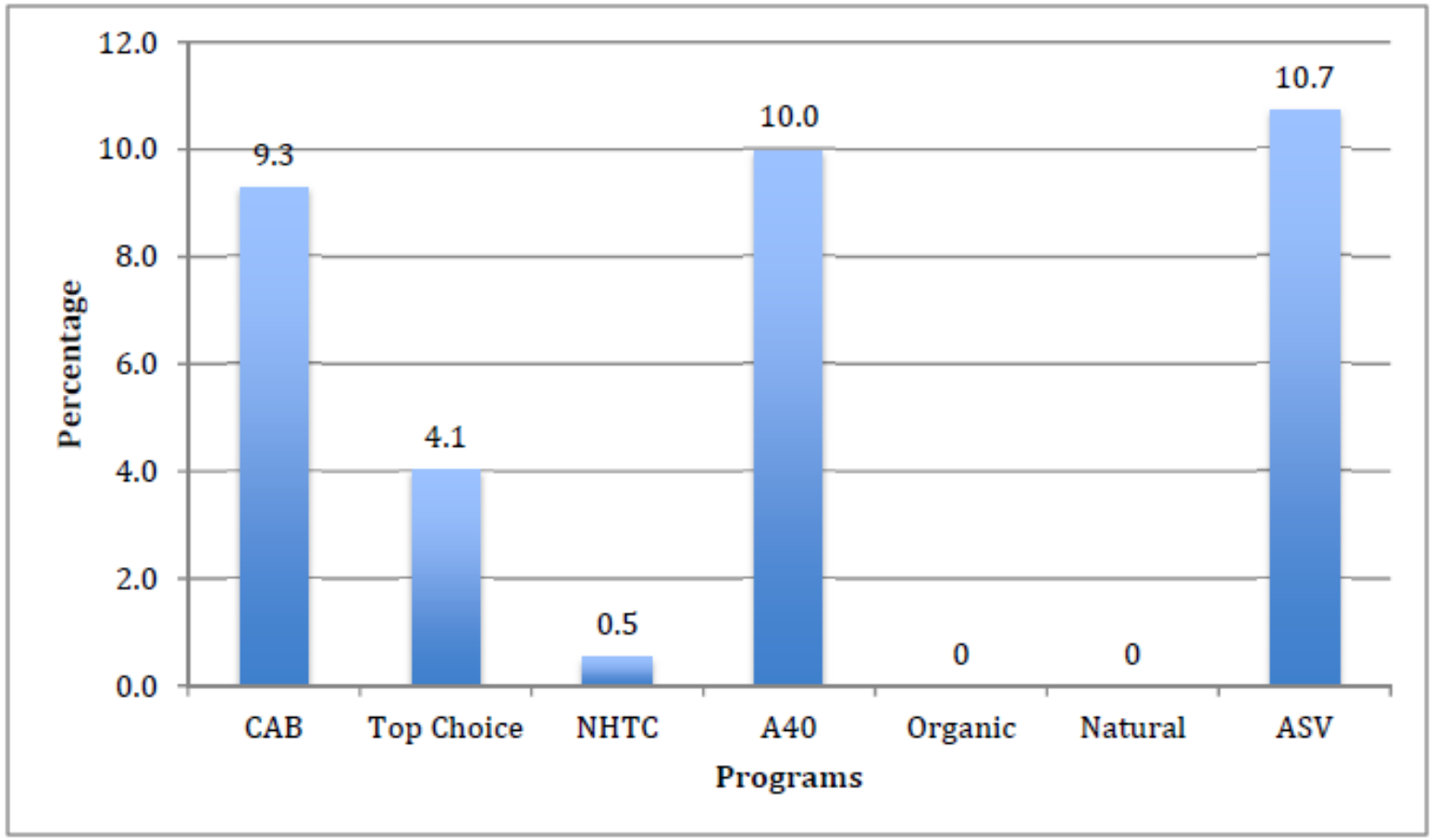


Figure 2-7. Frequency distribution of different certified and marketing programs from the National Beef Quality Audit-2011.

OPPORTUNITY HAS KNOCKED!!!

NOW WHAT ARE YOU GOING TO DO ABOUT IT???

Breeds to consider

Holstein

- Cross for general market
  - Limflex
  - Simangus
  - Angus (watch the REA)
- Cross for niche market
  - Wagyu
- Undesirable cross
  - *Bos indicus*

Jersey

- Cross for general market
  - Limousin
- Cross for niche market
  - Wagyu
- Other options
  - Simangus
  - Gelbvieh
- Undesirable cross
  - Angus
  - *Bos Indicus*

Calving ease concerns

Jersey Dairy

	Fresh	Dead	%DOA
L>1 – AN	338	6	1.8%
L>1 – GV	437	23	5.3%
L>1 – JE	2,050	63	3.1%
L=1 – AN	59	2	3.4%
L=1 – GV	169	12	7.1%
L=1 – JE	895	45	5.0%

Jersey Dairy

	Fresh	Dead	%DOA
L>1 – JE	3,629	82	2.3%
L>1 – LM	1,423	33	2.3%
L=1 – JE	2,023	102	5.0%
L=1 – LM	448	14	3.1%

Riverview data (JE x LM)

- 98.8% unassisted births & 3% DOA
- Birth weight of 79.6 lbs
- ADG from 0 to 157 days is 2.3 lbs
  - ~440 lbs at 5 months of age

	JExLM No Zilmax	Jersey No Zilmax	JExLM Zilmax	Jersey Zilmax
Start Wt	1,180	945	1,124	1,032
ADG	2.73	1.21	3.24	1.53
Harvest Wt	1,443	1,056	1,422	1,167
% Prime	8%	0%	0%	10%
% Choice	92%	88%	64%	70%
REA	13.87	11.37	15.74	12.36
Marbling	600	494	470	497

Trial conducted at UMN and slaughtered by Tyson Foods. Source: Wulfcattle.com

Calving ease concerns

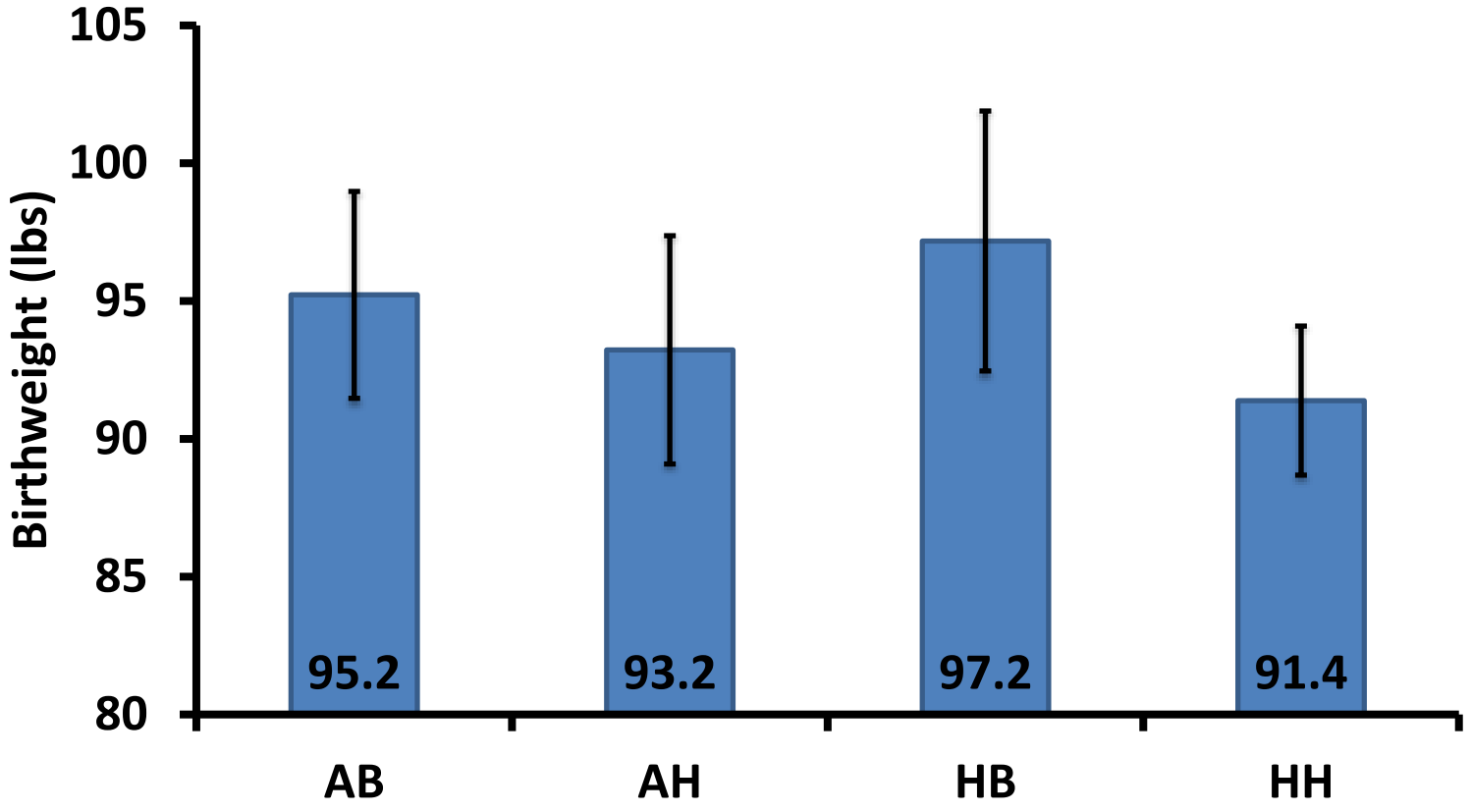
Holstein dairies (2 herds)

	Fresh	Dead	%DOA
L>1 HO	4,269	228	5.3%
L>1 AN	2,113	144	6.8%

Holstein dairies (4 herds)

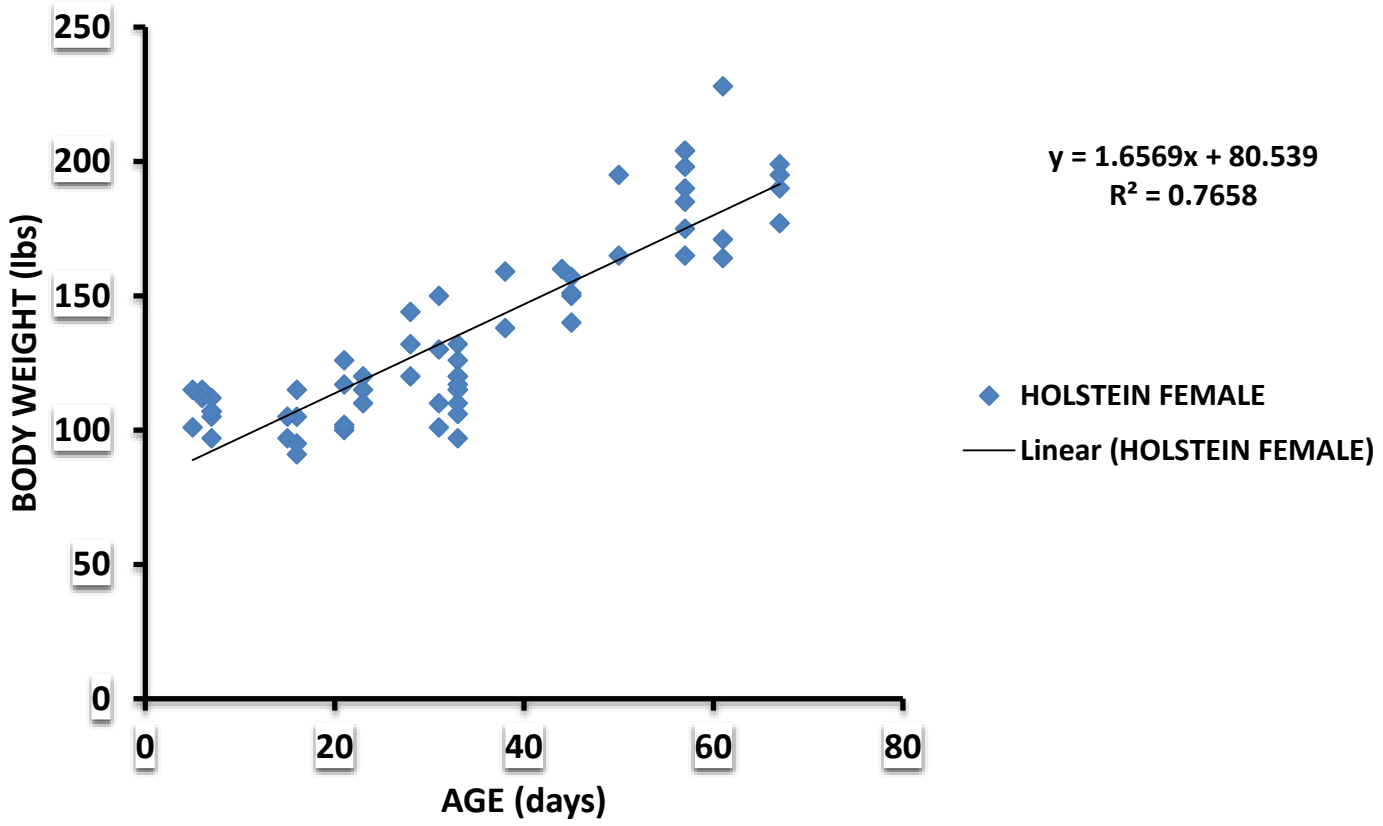
	Fresh	Dead	%DOA
L>1 HO	2,240	81	3.6%
L>1 LM	306	12	3.9%

Birthweight by breed & sex



Growth rate comparison

HO x HO heifers
Average Daily Gain = 1.66 lbs/day
Estimated weaning weight (70 days) = 197 lbs

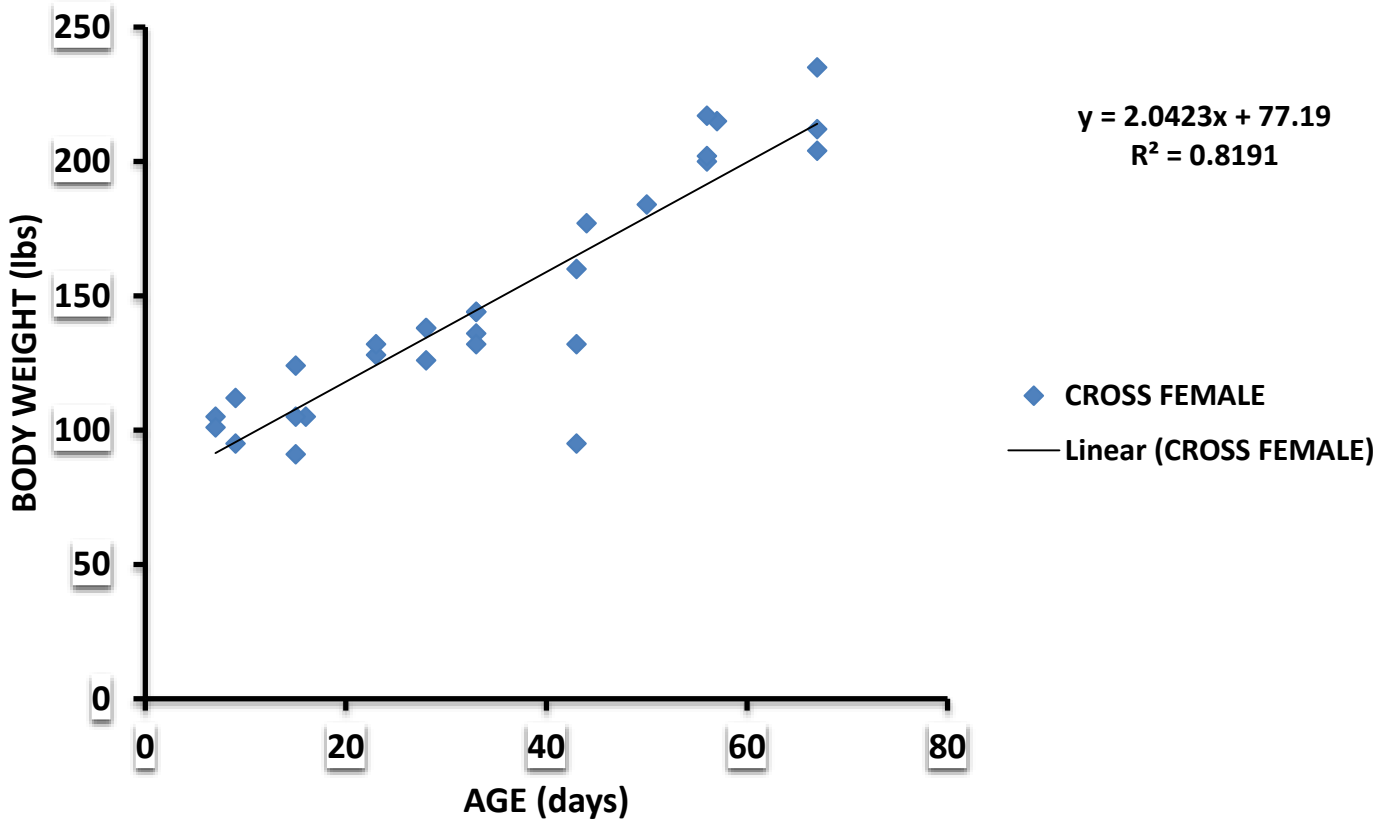


Growth rate comparison

HO x AN heifers

Average Daily Gain = 2.04 lbs/day

Estimated weaning weight (70 days) = 220 lbs

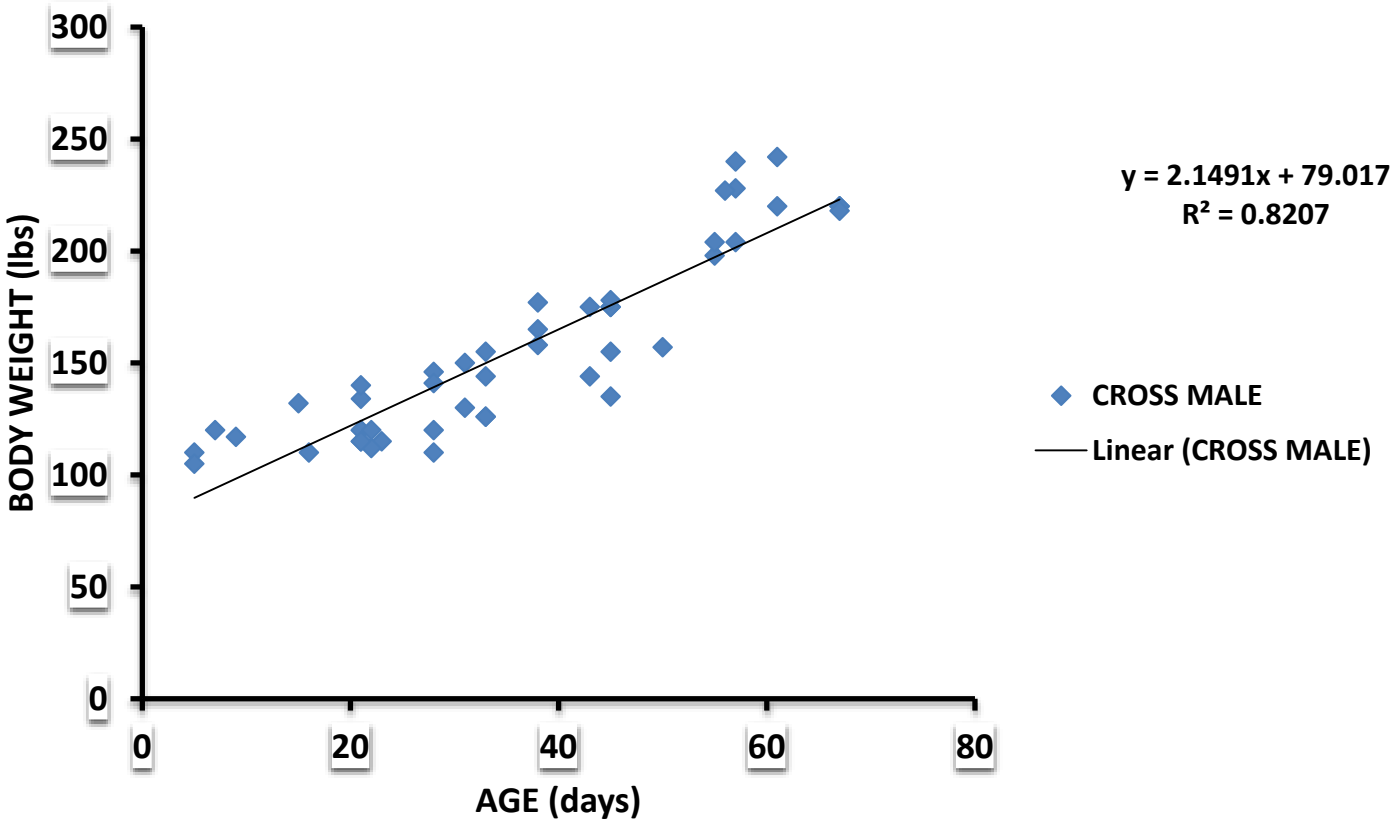


Growth rate comparison

HO x AN steers

Average Daily Gain = 2.15 lbs/day

Estimated weaning weight (70 days) = 230 lbs



Mortality comparison

	HO ENTER	AN ENTER	HO DEAD	AN DEAD
2013	1,505	1,313	2.66%	1.14%
2014	1,532	1,176	1.76%	2.30%
TOTAL	3,037	2,489	2.21%	1.69%

Post transition growth rates

- Truck weights for mixed gendered AxH calves
- ADG from 4 to 7 months was 2.57 lbs

Approx Age (days)	Approx Weight (lbs)
127	334
209	545

IS CROSSBREEDING TO BEEF JUST A FAD?

Replacements/freshening

- 100 Fresh

Replacements/freshening

- 100 Fresh
- 48% Female

Replacements/freshening

- 100 Fresh
- 48% Female
- 12% DOA

Replacements/freshening

- 100 Fresh
- 48% Female
- 12% DOA
- 15% HRL

36 replacements for every 100 fresh

Replacements/freshening

- 100 Fresh

Replacements/freshening

- 100 Fresh
- 56% Female

Replacements/freshening

- 100 Fresh
- 56% Female
- 8% DOA

Replacements/freshening

- 100 Fresh
- 56% Female
- 8% DOA
- 10% HRL

47 replacements for every 100 fresh

Replacements/freshening

- 100 Fresh
- 56% Female
- 8% DOA
- 10% HRL

47 replacements for every 100 fresh

Isn't 11 extra replacements good?

- 500 cow seasonal dairy
  - 185 Lact=1 & 315 Lact>1
- 500 fresh/year
  - 0.36 replacements/freshening * 500 fresh = 180 replacements/year
  - 0.47 replacements/freshening * 500 fresh = 235 replacements/year

Isn't 11 extra replacements good?

180 Replacements/Year

- Can maintain <40% of herd Lact=1 with good repro
- More milk/cow
- Higher % of livestock in milk
- Less animals on feed
- Less animal housing & labor

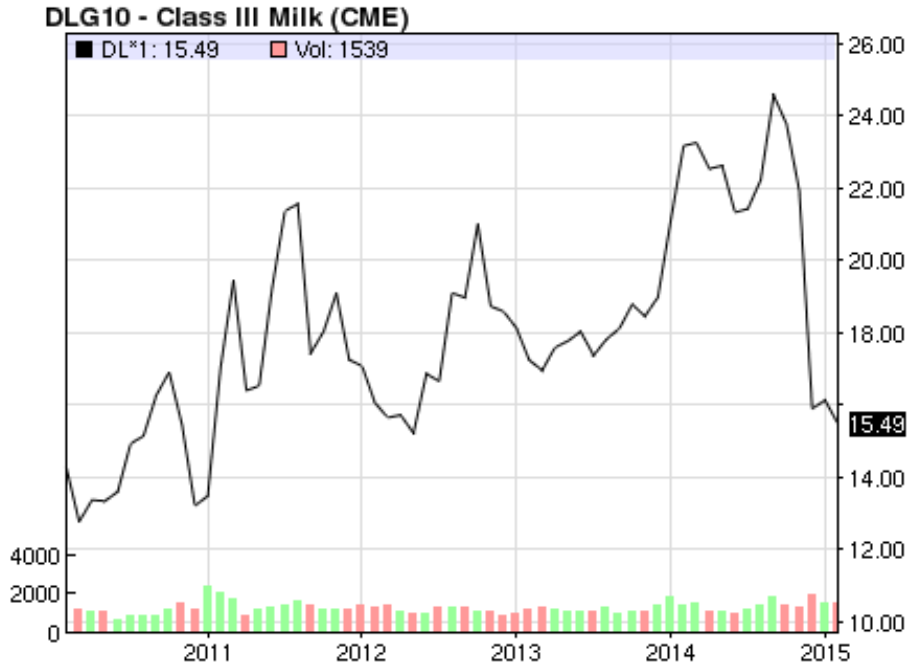
235 Replacements/Year

- Will exceed 45% of herd Lact=1 within 2 years
- Less milk/cow
- Lower % of livestock in milk
- More animals on feed
- More animal housing & labor

Development of inventory management plan is crucial!!!

•Proactive > Reactive

Perspective on heifer raising



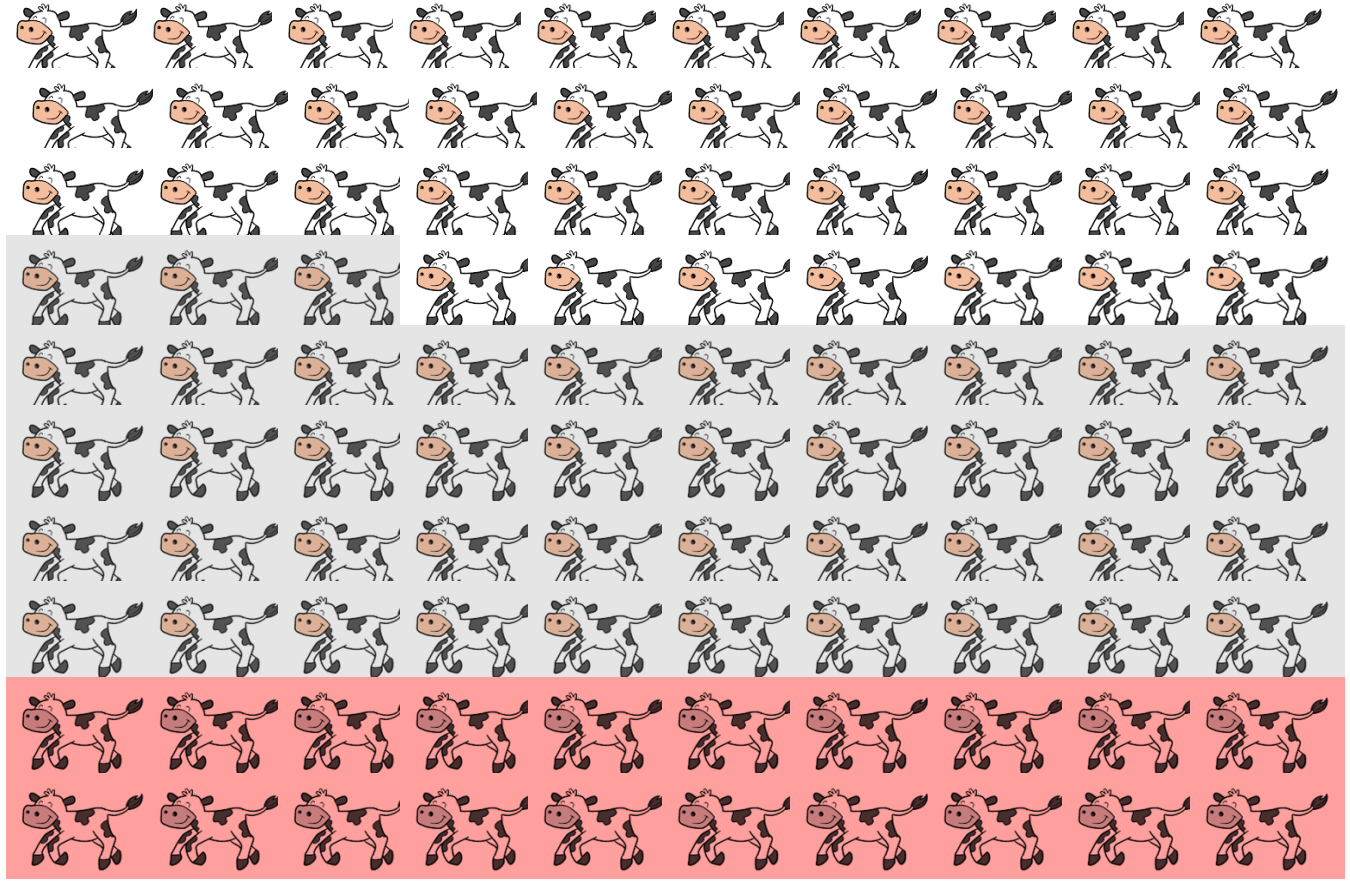
Source: www.nasdaq.com

January	Medium Holstein Springer	Heifer Calves	Sales Yard
2011	$1,000	$210	Norwood
2012	$1,100	$250	Springfield
2013	$850	$220	Springfield
2014	$1,125	$125	Springfield
2015	$1,750	$400	Norwood

Source: Progressive Dairyman

Inventory management

- 100 Fresh
- ***20% Beef***
- 56% Female
- 8% DOA
- 10% HRL



37 replacements for every 100 fresh

Calculating inventory needs

- Calculate replacements needed:

Herd Size * Target Cull Rate * Buffer

Example:

500 * 35% * 1.05 = 184 replacements/year

- Calculate number of breeding eligible cattle at start of breeding season
- Develop semen usage strategy

Semen usage strategy

Times Bred

- Calculations
  - Target of ~20% to beef
  - Conception of 44% on AI 1-3
  - $(1\text{-}0.44)^3 = 17.5\%$ OPEN
- Advantages
  - Easy to follow
  - Dairy heifers will come early in calving season
- Disadvantages
  - High % of pregnant to beef culls
  - Low %CR on beef semen

Targeted Group

- Calculations
  - Specify criteria
    - 305me, TBRD, XMAST, etc.
  - Designate target beef % for mating
- Advantages
  - More selective of dams
- Disadvantages
  - Heifers spread across calving season

Genetic advancement

- Impact selection intensity (i) and generation interval (GI) on sire side
- Sexed semen/beef semen allows impact on generation interval & should impact selection intensity

$$\Delta G = \frac{H^2 * i * \sigma_p}{GI}$$

Summary

- Dairy's opportunity to build long-term value for Dairy x Beef cross calves
  - Calving ease not a concern when monitored
- Incorporation of Beef into a semen usage plan aids inventory management & accelerates genetic progress

Questions

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