Northwest Florida Beef Conference

Key Concepts for Commercial Beef Cow Herd Sustainability

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4 Key Concepts for Cow Herd Sustainability

Derived from observing and working with several commercial herds from 1973 to 2010

Not “all-inclusive” list; Not included: Cow Herd Health, Genetics, Pasture Management, many more

Key Concept 1

Develop and maintain a defined calving season

Influence of Breeding Season Length on Cost of Production

SPA data from 397 herds (Texas, Oklahoma, New Mexico, Parker, et al. 2005)

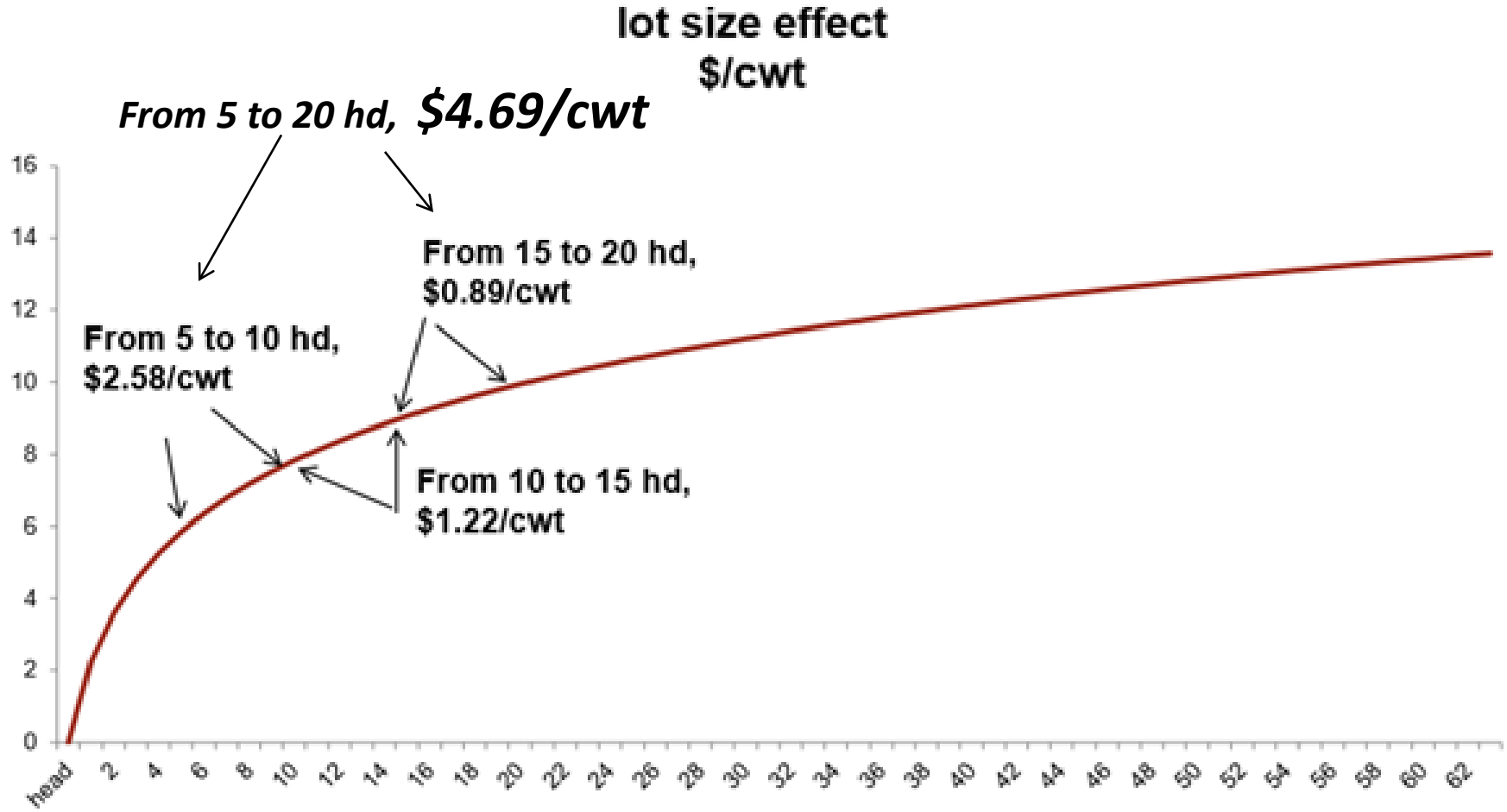
For each 1 day increase in breeding season ---- cost of each cwt of calf weaned increased by $0.047

Reducing breeding season from year round to 60 days is associated with **$14.33/cwt less cost**

Defined breeding season

- ✓ Allows feeding efficiency
  - Dry pregnant cows
  - Lactating cows
- ✓ Health programs more precise
- ✓ More quickly find and diagnose problems
- ✓ Allows for marketing of larger lot size of calves.

Effect of Lot Size on Sale Price: 2010-2013 Sale Data



Key Concept 2

Calving and Breeding Season Match the Environment

Body Condition at Calving

Determines number of days from calving to return to heat cycles

Determines how many opportunities she has to get pregnant in 60 day breeding season

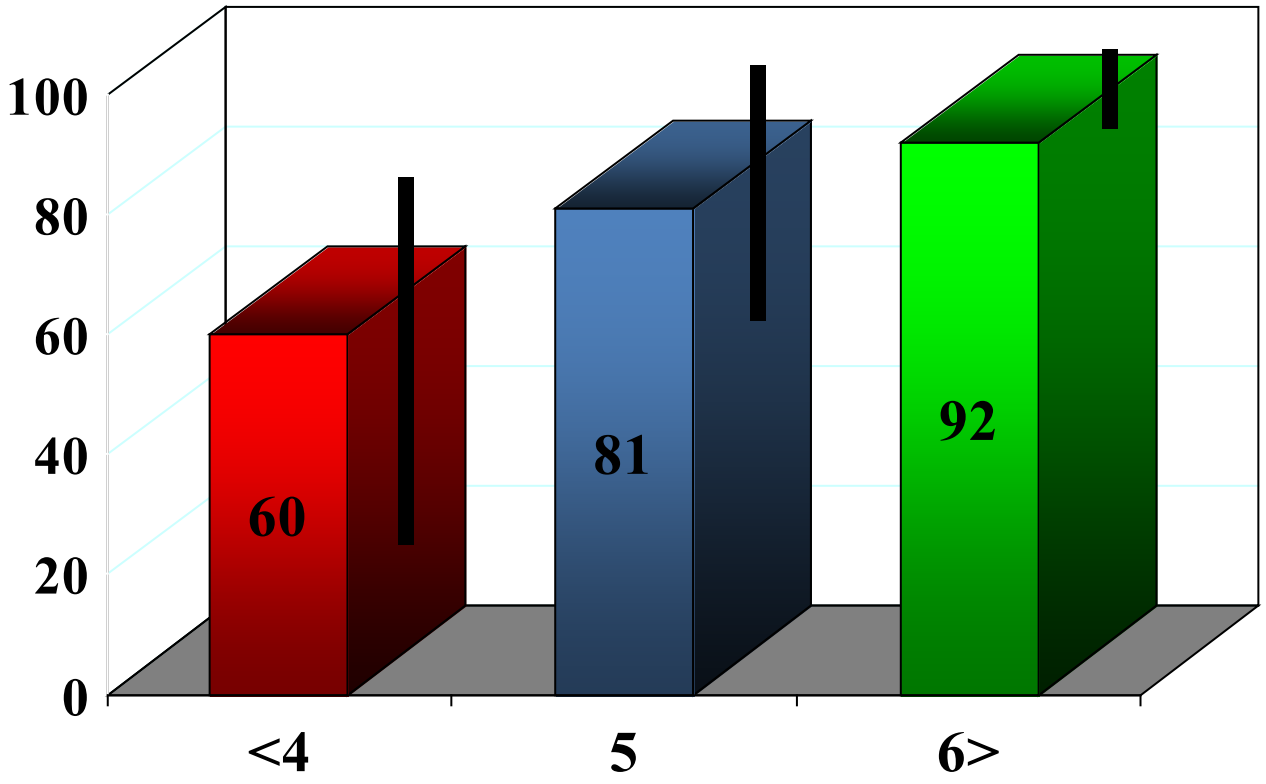
Therefore pregnancy % during the breeding season.

BCS=4

BCS=5

BCS=6

Body Condition Score at Calving and Pregnancy Rate



Body Condition of Cows and Heifers at Calving

Breeding season MUST occur when heat stress is minimal

- ✓ Cattle do not thermo-regulate as well as humans at warmer temps
- ✓ 1.6 degree F increase in core body temperature can adversely affect pregnancy rates

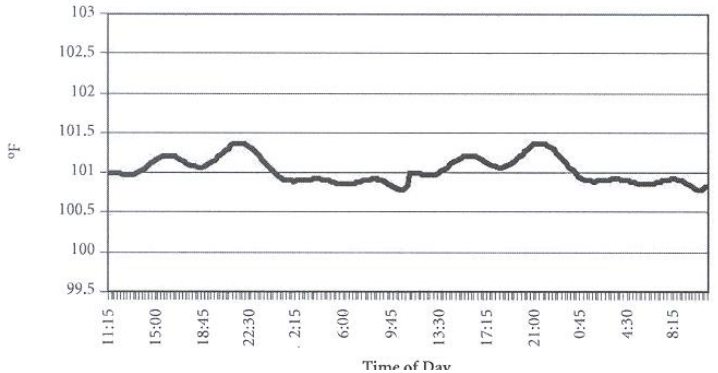
Christenson, 1980 Reviewed Literature up to 1979

"High temperatures and humidity had the most effect...
Pregnancy and calving rates from 10 to 25% common in cows bred in July through September."

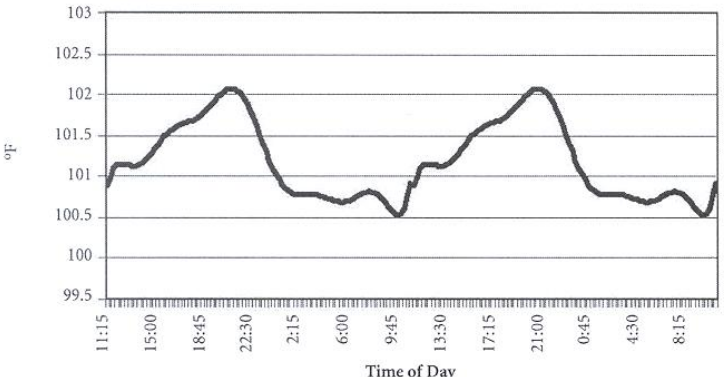
"High temperatures reduced conception rate, lengthened the postpartum interval...and reduced duration of estrus"

48 hour Body Temperature Changes in Beef Cows at Different Summer Temperatures

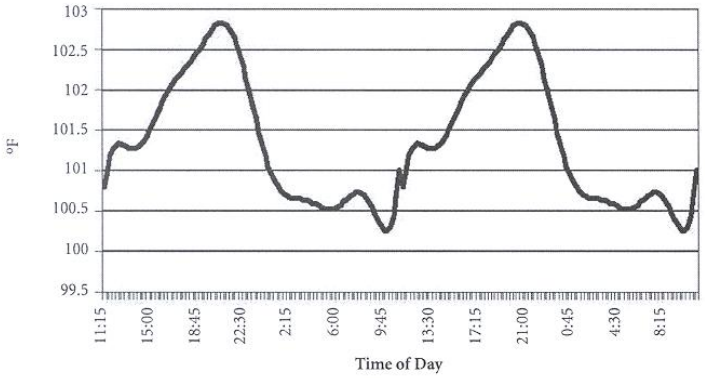
Univ. of Nebr. Beef Report 2008



Hi 70° F
Lo 50-60° F



Hi 80° F
Lo 60° F



Hi 90° F
Lo 60's° F

Figure 3. Cow body temperature (°F) within time of day over 48-hour period when 90°F is the maximum daily temperature.

Body Temperature Fluctuation in Beef Cows on Pasture in Summer

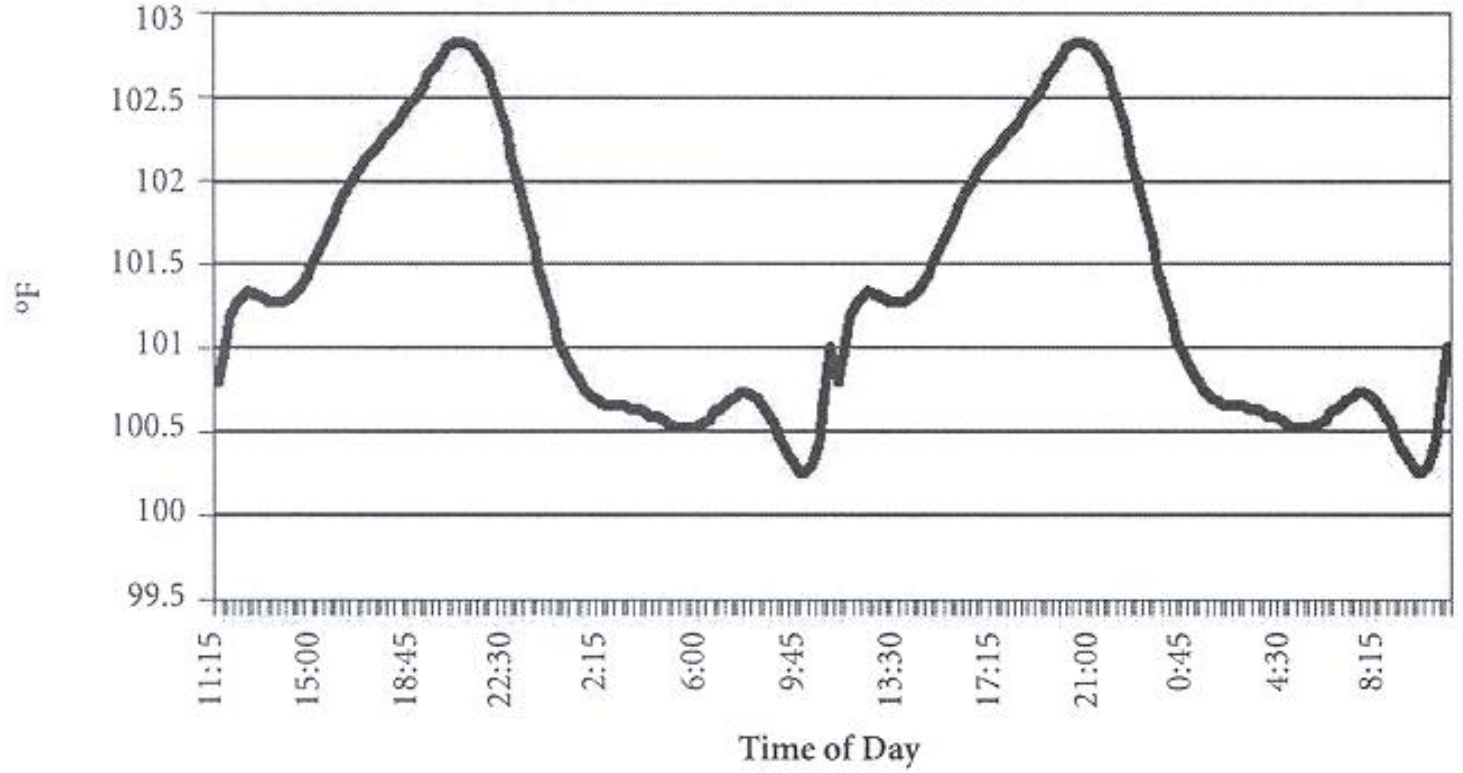
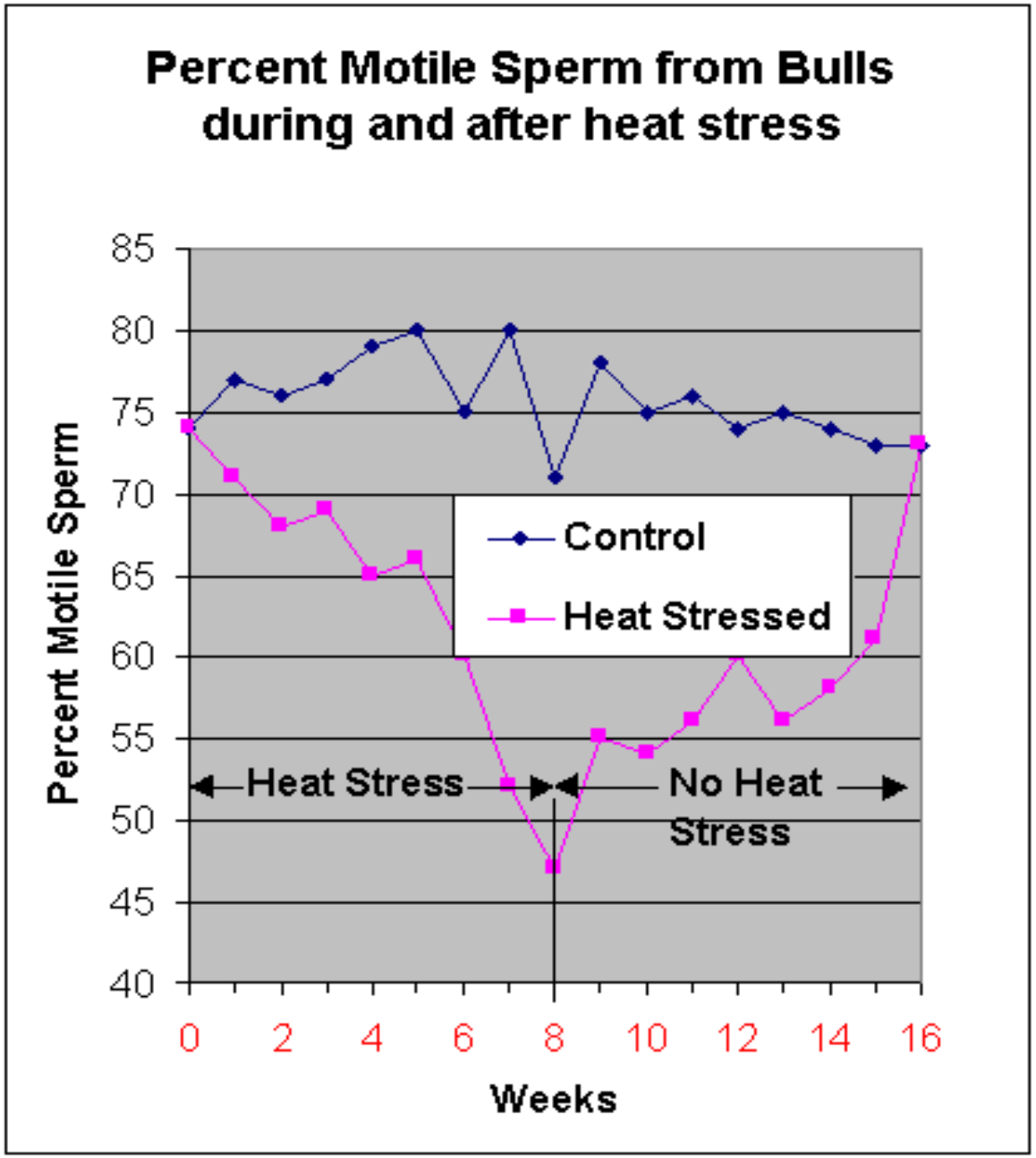


Figure 3. Cow body temperature (°F) within time of day over 48-hour period when 90°F is the maximum daily temperature.

Effects of Heat on Conception in Beef Cows (Biggers, 1986, OSU)

	Control	Mod Stress	Severe Stress
Day Temp	71	97	98
Night Temp	71	91	91
Rel. Hum.	25	27	40
Rectal Temp	-------	+ 0.7	+1.6
Preg %	83	64	50
Conceptus wt. (g)	0.158	0.111	0.073


Percent Motile Sperm from Bulls during and after heat stress
Percent Motile Sperm
85
80
75
70
65
60
55
50
45
40
0
2
4
6
8
10
12
14
16
Weeks
Control
Heat Stressed
Heat Stress
No Heat Stress

Key Concepts 1 and 2

- ✓ **Well defined (60 day) calving season when cows are in BCS 5 or 6**
- ✓ **Breeding season in moderate temperatures that allow for optimum pregnancy rates**

Key Concept 3

Develop replacement heifers to fit the cow herd

Two differing strategies of heifer selection and development

1. Develop heifers slowly after weaning (target 50 to 55% of mature weight at breeding)

2. Develop heifers at 1.5 to 2 lbs/day after weaning (target of 60 to 65% of mature weight at breeding)

Strategy 1.
Expect 50% of heifers cycling early in breeding season; must keep and breed twice as many heifers as you need.

Selection pressure on reproduction by using short breeding season and preg checking

Non-pregnant heifers have been “unintended” stocker heifers. Sell immediately while young enough to go to feedlot.

Strategy 2.
Expect 90% of heifers cycling early in breeding season; must keep and breed about 10% more than you need

Selection pressure on other traits of your choosing, i.e. carcass traits

Non-pregnant heifers have been “unintended” stocker heifers. Sell immediately while young enough to go to feedlot.

Growing from breeding to calving is critical

2 year olds at calving :

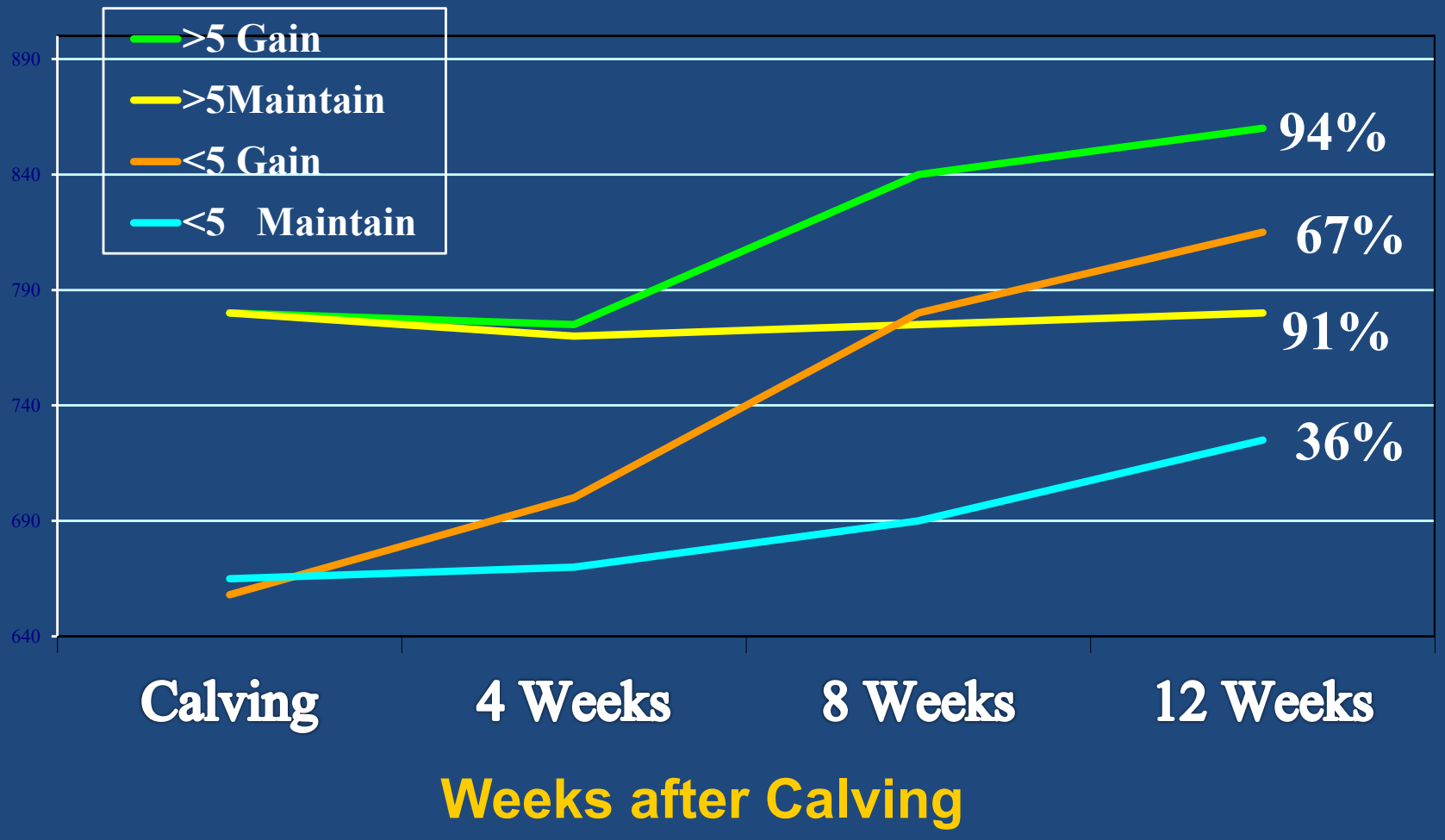
- ✓ Still growing
- ✓ Changing from baby to adult teeth
- ✓ Lactate and produce adequate colostrum
- ✓ Repair reproductive tract
- ✓ Return to estrus cycles and conceive in 85 days
- ✓ No increase in calving difficulty at BCS=6

2 year olds MUST be in adequate body condition (5.5 to 6) at calving

Predicted number of days from calving to first heat

Condition score at calving	Condition score change after calving to day 90						
	-1	-0.5	0	0.5	1	1.5	2
3	189	173	160	150	143	139	139
4	161	145	131	121	115	111	111
5	133	116	103	93	86	83	82
5.5	118	102	89	79	72	69	66

Heifer Condition At and After Calving and Pregnancy Rate



2 year olds MUST be in adequate body condition (5.5 to 6) at calving

If thin at calving, they can't catch up

Key Concept 4
“Market” your calves

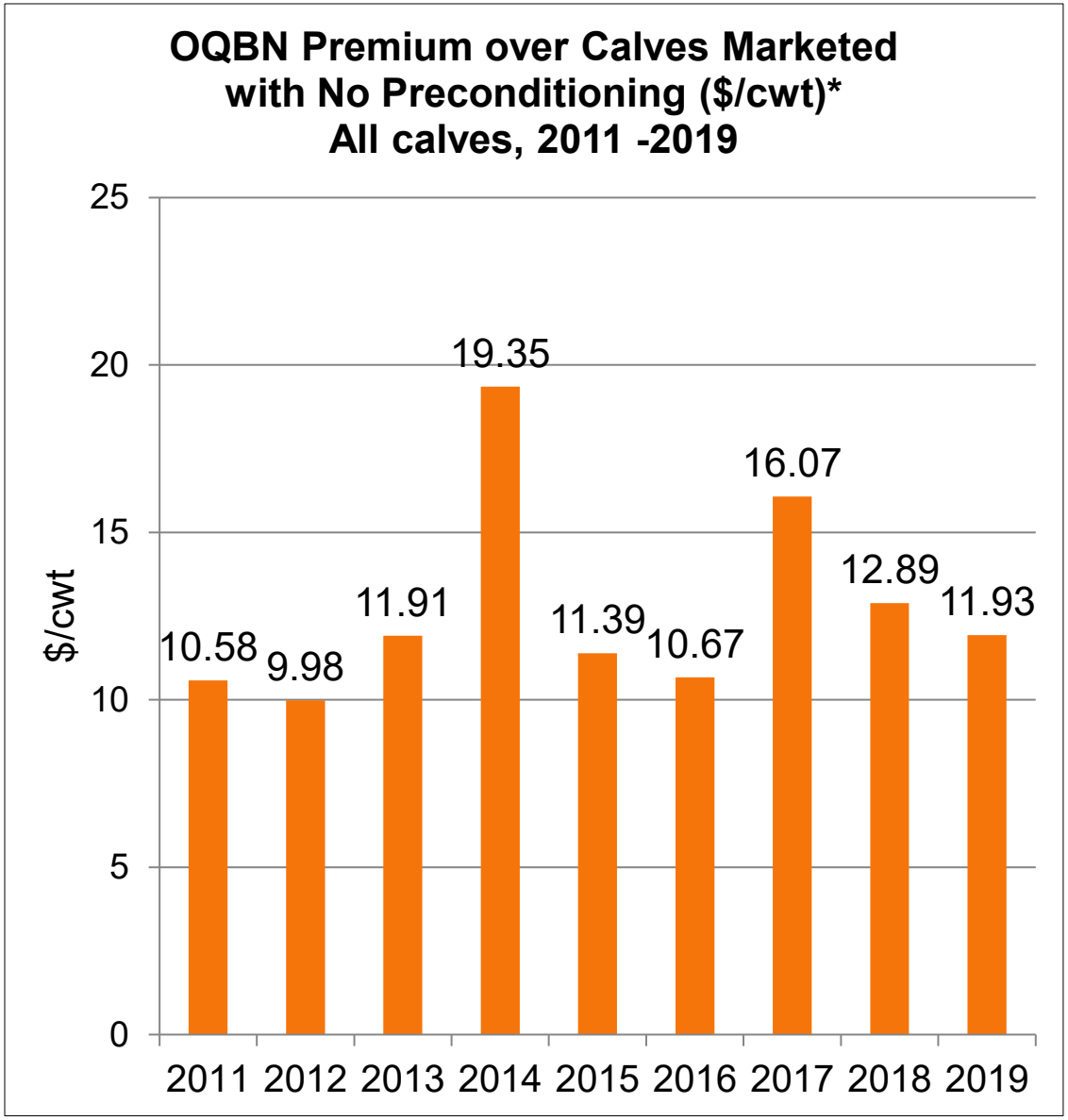
Don’t just “sell” calves, ***“market”*** calves

Find a value-added program that fits your calves

Weaned at least 45 days before marketing
Vaccinated according to protocol
Third party verification

Buyers are paying for reduced risk

Example is Oklahoma Quality Beef Network (OQBN)



Courtesy of Kellie Raper, Extension Livestock Marketing Specialist

You have genetically high quality calves

Calves are weaned, castrated, dehorned, vaccinated according to value-added program protocol.

TELL SOMEONE!!

Notify past buyers and potential new buyers of the sale date for your excellent calves

A post card with sale date, weaning date, vaccinations, expected sale weight

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- ✓ **Develop and maintain a defined calving season**
- ✓ **Calving and breeding season match the environment**
- ✓ **Develop replacement heifers to fit the cow herd**
- ✓ **“Market” your calves**