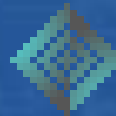


Essential Reproductive Management Considerations



CLIFF LAMB

FACTORS AFFECTING FERTILITY

- **Body weight**
- **Age**
- **Genetics**
- **Nutritional management**
- **Reproductive management**
- **Rate of gain**
- **Plane of nutrition**
- **Body composition**
- **Animal handling**



Time course of early bovine embryo development

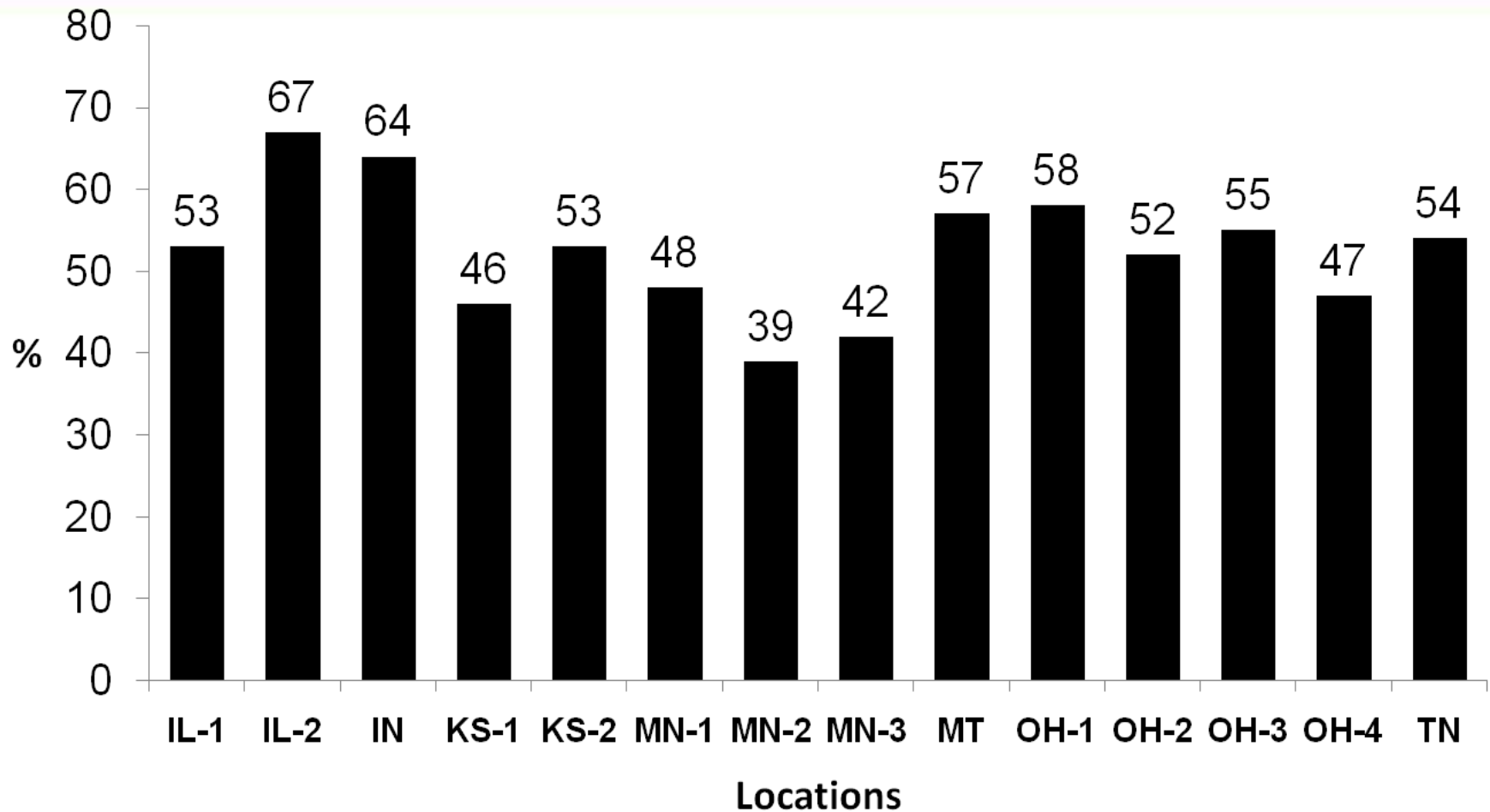
Event	Day	% Pregnant
Estrus	0	
Ovulation and fertilization	1	95-100
First cell division	2	
8-cell stage	3	
Migration to uterus	5-6	
Blastocyst	7-8	75-80
Hatching	9-11	
Maternal recognition of pregnancy	15-17	70-80
Attachment to the uterus	19	
Placentation	25	65-75
Definitive attachment of the embryo to the uterus	42	
Birth	285	55-70

Data adapted from (Shea, 1981; Flechon and Renard, 1978; Peters, 1996; Telford et al., 1990)

FACTORS AFFECTING EMBRYONIC/FETAL MORTALITY

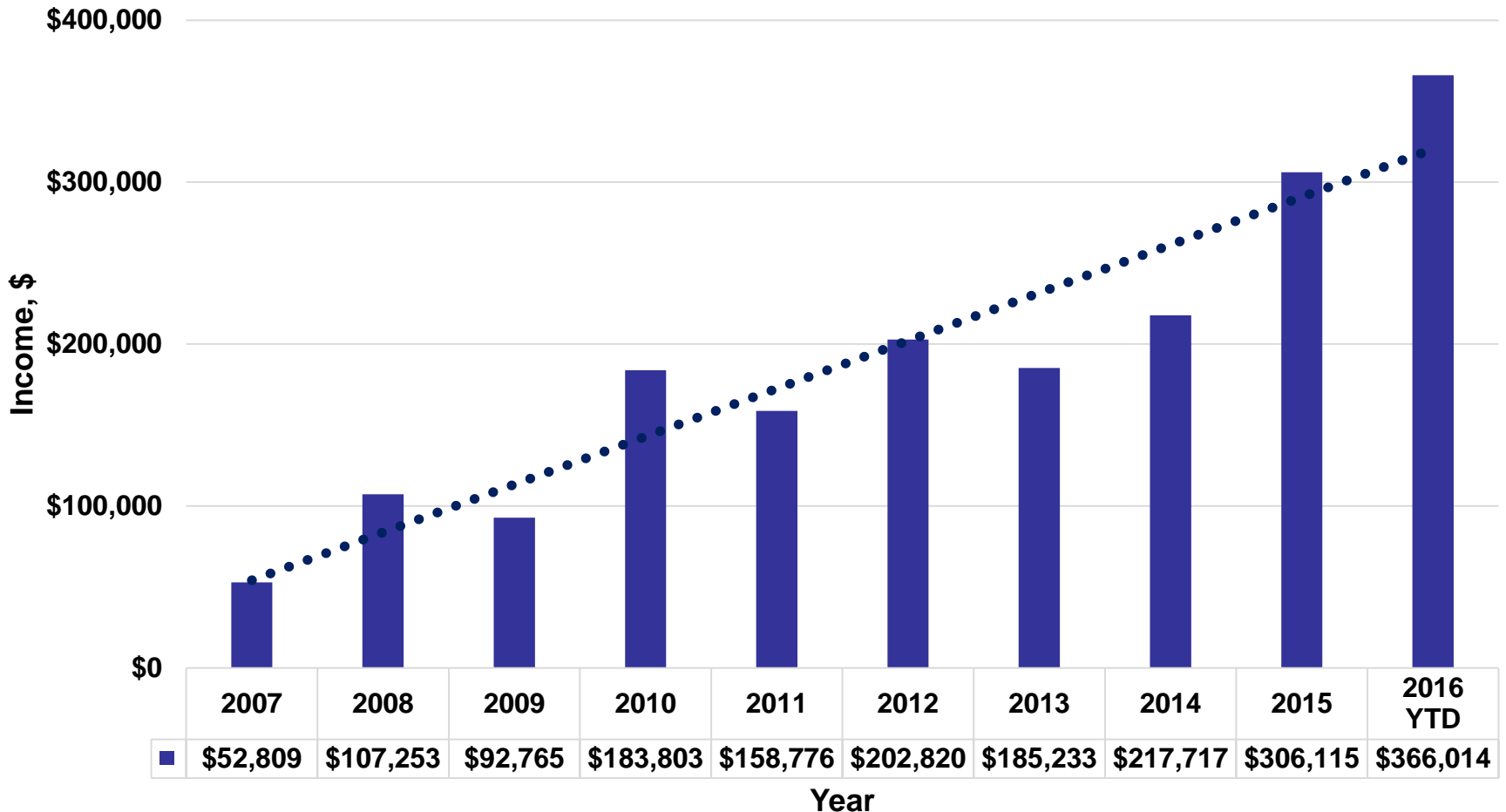
- **Genetic factors**
- **Heat stress**
- **Asynchrony between the embryo and the maternal environment**
- **Effect of the sire**
- **Nutrition**
- **Temperament/handling stress**
- **Shipping stress**

LOCATION/HERD EFFECTS



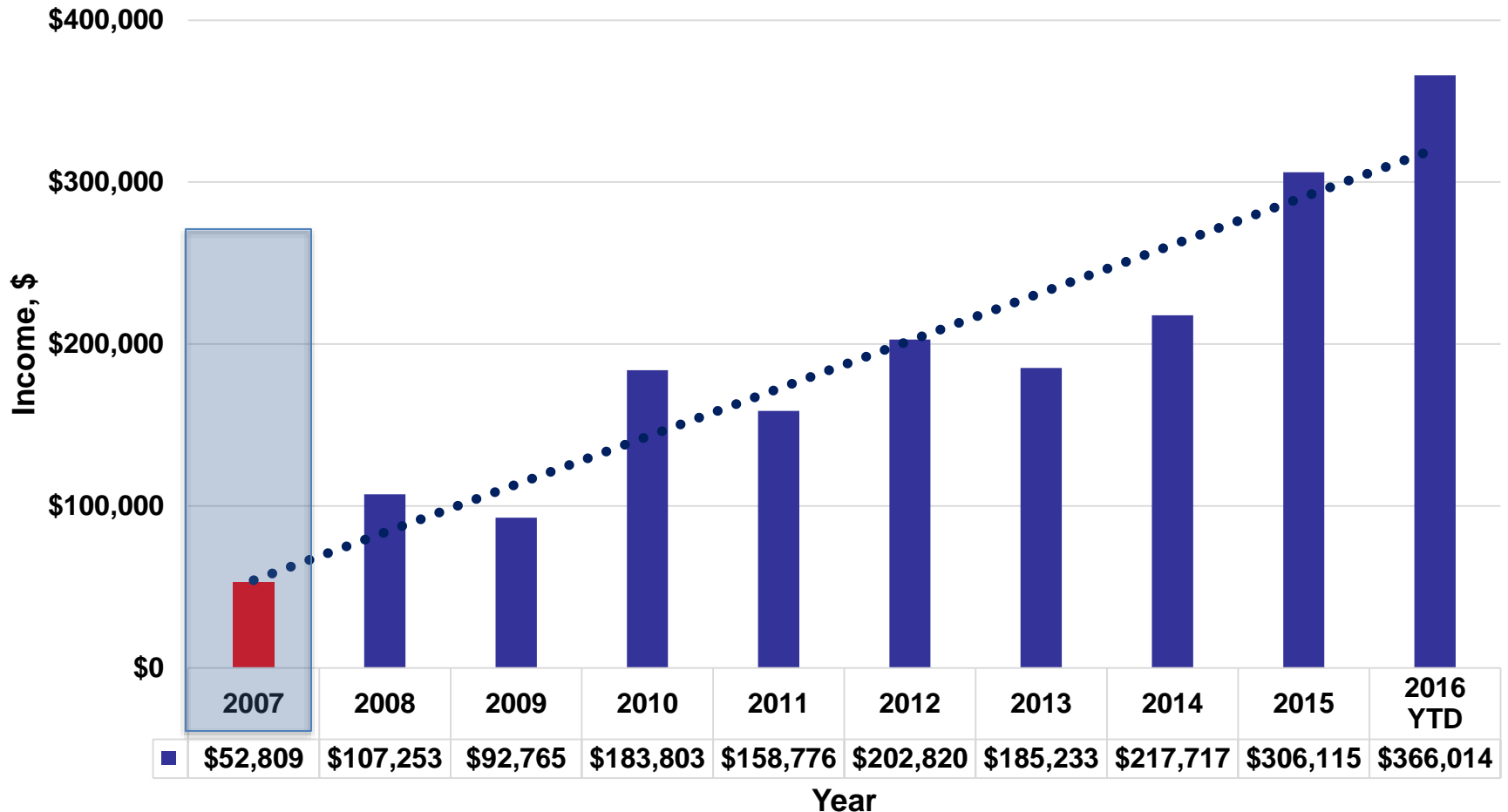
Changes Income from Cattle Sales

Total income from cattle



Changes Income from Cattle Sales

Total income from cattle



WHAT WERE THE NEGATIVE FACTORS AFFECTING THE PRODUCTIVITY OF THE OPERATION?

- **Long breeding season**
 - **Extra labor during the calving season**
 - **No uniformity in the calf crop**
 - **Decreased value of the calves at market**
- **Use of natural service sires**
 - **No proven sires**
 - **Increased dystocia**
 - **Differing calf types among sire groups**
 - **Cost of maintaining and managing bulls**
 - **Risk of bull becoming sterile**
- **Cow and calf management**
 - **Differing vaccination, weaning, and/or branding dates**

UF-NFREC CASE STUDY

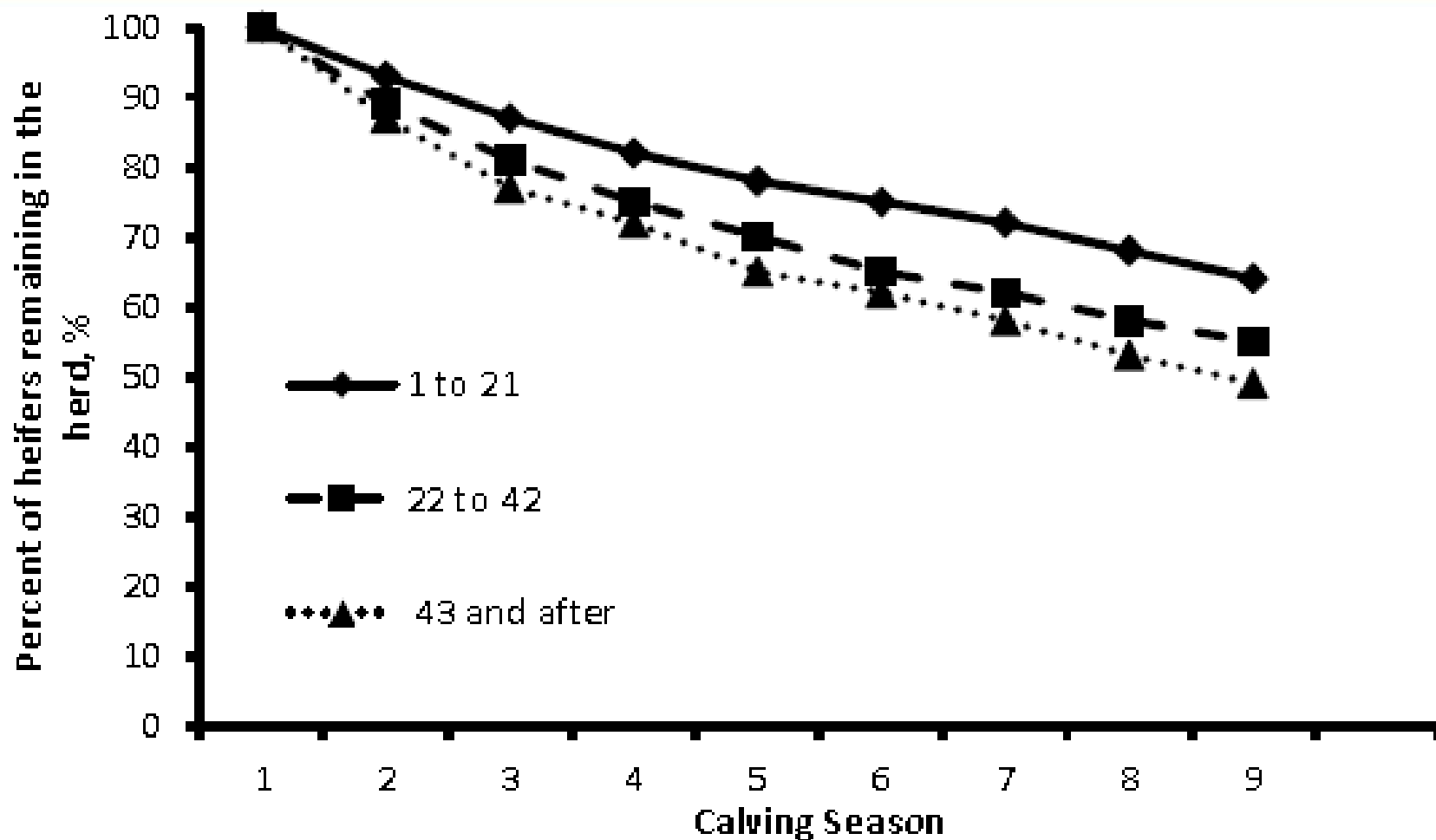


**Pregnancy has 4 times
greater economic impact
than any other production
trait!**

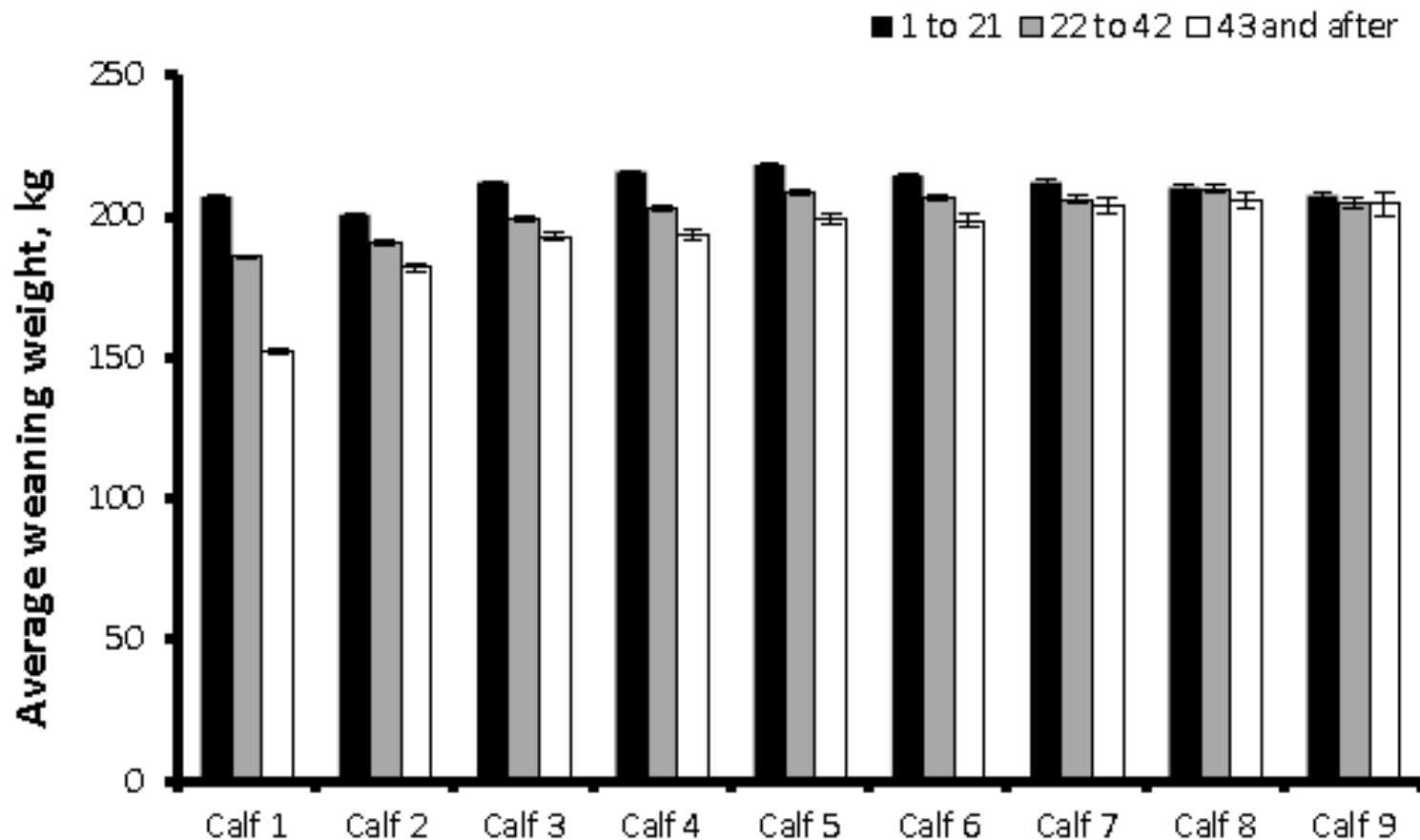
MY EXPECTATIONS FOR EVERY FEMALE IN THE HERD

- **Must calve by 24 months of age**
- **Cow must have a calf every 365 days**
- **Cow must calve without assistance**
- **Cow must provide sufficient resources for the calf to reach it's genetic potential**
- **Calf must be genetically capable to perform**
- **Cows must maintain their body condition score for my conditions**
- **Must not be crazy (disposition)**

INFLUENCE OF CALVING PERIOD ON REPRODUCTIVE LONGEVITY



INFLUENCE OF CALVING PERIOD ON WEANING WEIGHTS



UF-NFREC CASE STUDY

2006

Start breeding season



1

Remove bulls



120

2007

Start breeding season



1

Remove bulls



120

2008

AI heifers



1

AI cows



8

AI late calving cows



49

AI late, late calving cows



70

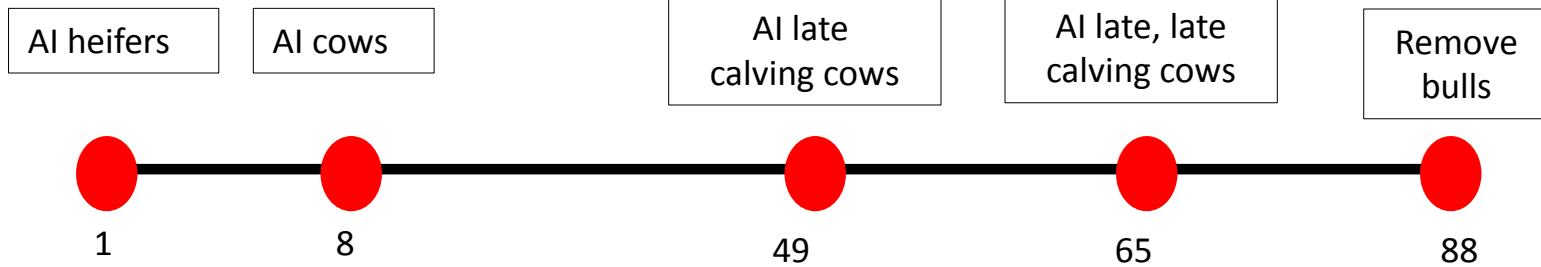
Remove bulls



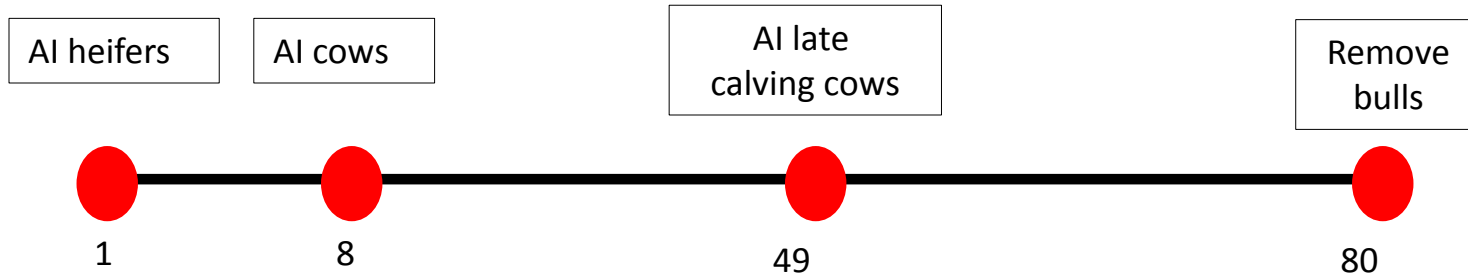
110

UF-NFREC CASE STUDY

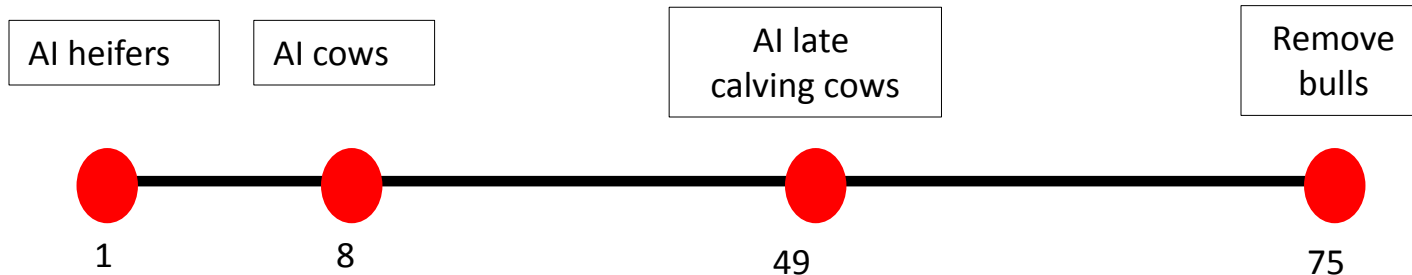
2009



2010



2011



UF-NFREC CASE STUDY

2012



2013



UF-NFREC CASE STUDY

Change in calf value:

Year	2006	2007	2008	2009	2010	2011	2012	2013
Mean calving day	79.2	80.9	59.2	56.2	53.7	47.2	39.5	38.7
Difference from 2006/2007	0	0	21.7	24.7	27.2	33.7	41.4	42.2
Per calf increase in value	0	0	\$87	\$99	\$109	\$135	\$166	\$169
Herd increase in value	0	0	\$19,100	\$29,700	\$32,700	\$40,500	\$49,800	\$50,700

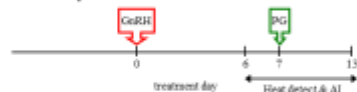
**We know how
to synchronize
cattle!**

ESTRUS SYNCHRONIZATION AND AI IN BEEF CATTLE

BEEF COW PROTOCOLS - 2014

HEAT DETECTION

Select Synch



Select Synch + CIDR®



PG 6-day CIDR®

Heat detect and AI days 0 to 3. Administer CIDR to non-responders and heat detect and AI days 9 to 12. Protocol may be used in heifers.



HEAT DETECT & TIME AI (TAI)

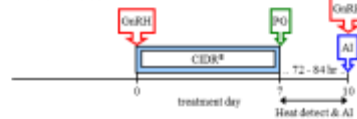
Select Synch & TAI

Heat detect and AI day 6 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



Select Synch + CIDR® & TAI

Heat detect and AI day 7 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



PG 6-day CIDR® & TAI

Heat detect & AI days 0 to 3. Administer CIDR to non-responders & heat detect and AI days 9 to 12. TAI non-responders 72 - 84 hr after CIDR removal with GnRH at AI. Protocol may be used in heifers.



FIXED-TIME AI (TAI)*

7-day CO-Synch + CIDR®

Perform TAI at 60 ± 6 hr after PG with GnRH at TAI.



5-day CO-Synch + CIDR®

Perform TAI at 72 ± 2 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.



FIXED-TIME AI (TAI)*

for *Bos Indicus* cows only

PG 5-day CO-Synch + CIDR®

Perform TAI at 66 ± 2 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.



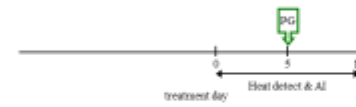
* The time listed for "Fixed-time AI" should be considered as the approximate average time of insemination. This should be based on the number of cows to inseminate, labor, and facilities.

GnRH Cytosolix®, Factrel®, Fertagyl®, OvaCyst®
PG estroPLAN®, Estramate®, In-Synch®, Lutalyse®, ProstaMate®

BEEF HEIFER PROTOCOLS - 2014

HEAT DETECTION

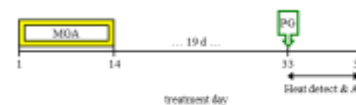
1 Shot PG



7-day CIDR®-PG



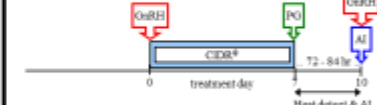
MGA®-PG



HEAT DETECT & TIME AI (TAI)

Select Synch + CIDR® & TAI

Heat detect and AI day 7 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



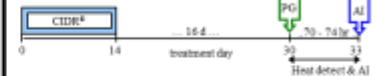
MGA®-PG & TAI

Heat detect and AI day 33 to 36 and TAI all non-responders 72 - 84 hrs after PG with GnRH at TAI.



14-day CIDR®-PG & TAI

Heat detect and AI day 30 to 33 and TAI all non-responders 72 hrs after PG with GnRH at TAI.



FIXED-TIME AI (TAI)*

Short-term Protocols

7-day CO-Synch + CIDR®

Perform TAI at 54 ± 2 hr after PG with GnRH at TAI.



5-day CO-Synch + CIDR®

Perform TAI at 60 ± 4 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.



Long-term Protocols

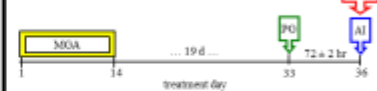
14-day CIDR®-PG

Perform TAI at 66 ± 2 hr after PG with GnRH at TAI.



MGA®-PG

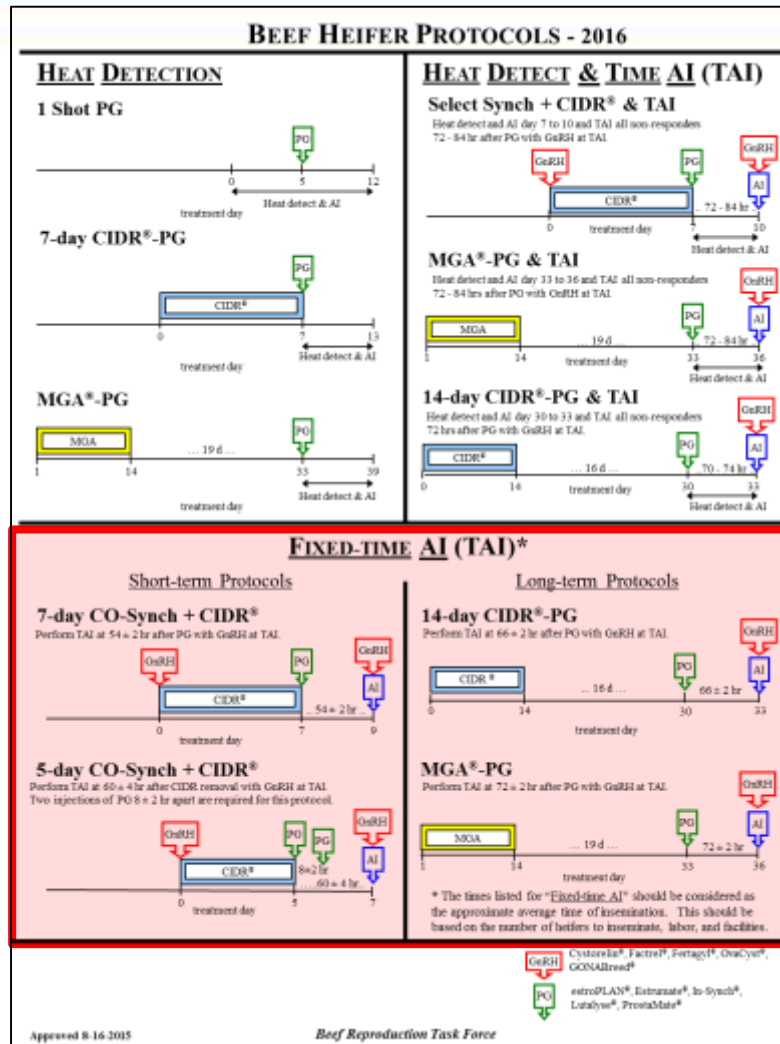
Perform TAI at 72 ± 2 hr after PG with GnRH at TAI.



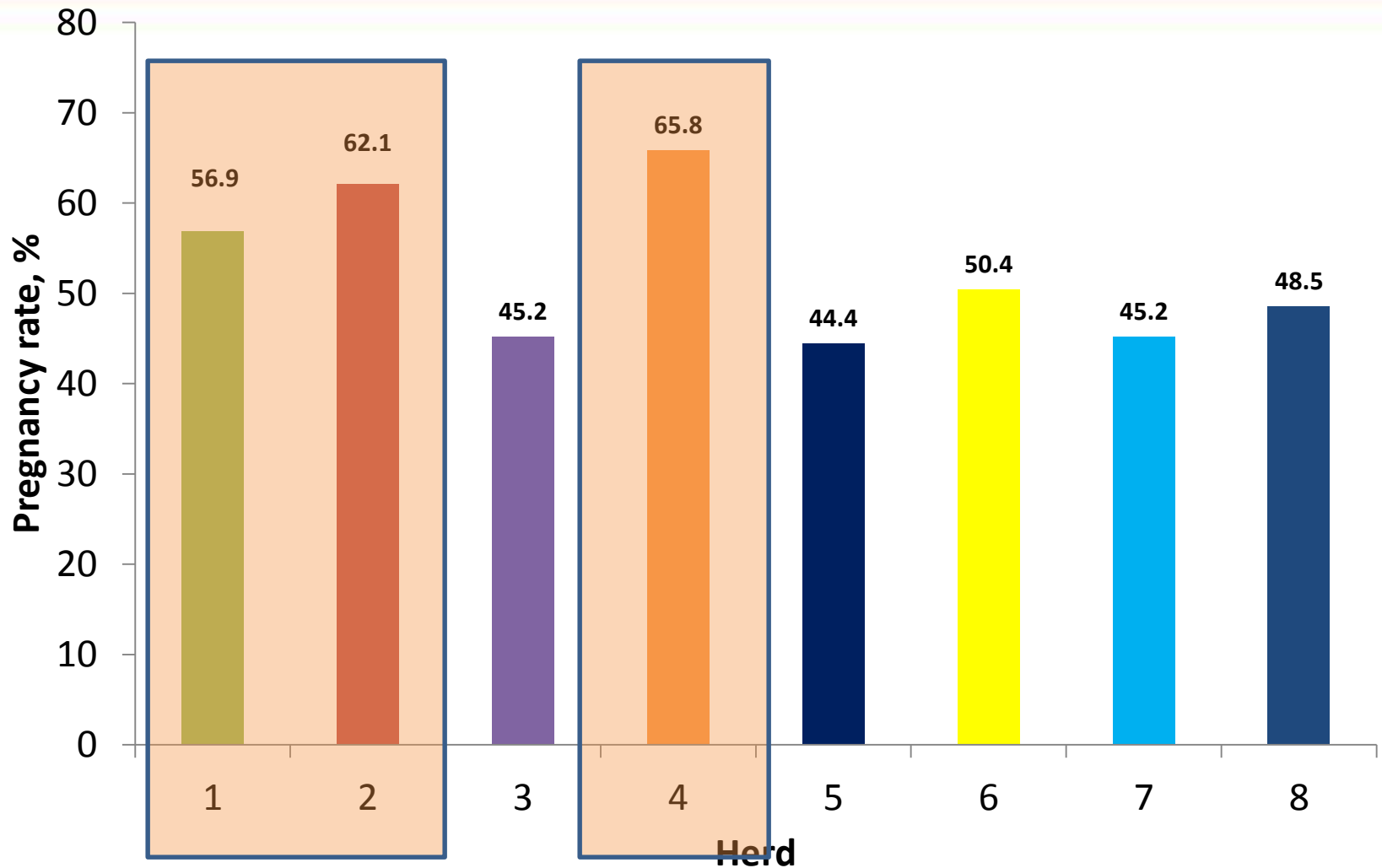
* The times listed for "Fixed-time AI" should be considered as the approximate average time of insemination. This should be based on the number of heifers to inseminate, labor, and facilities.

GnRH Cytosolix®, Factrel®, Fertagyl®, OvaCyst®
PG estroPLAN®, Estramate®, In-Synch®, Lutalyse®, ProstaMate®

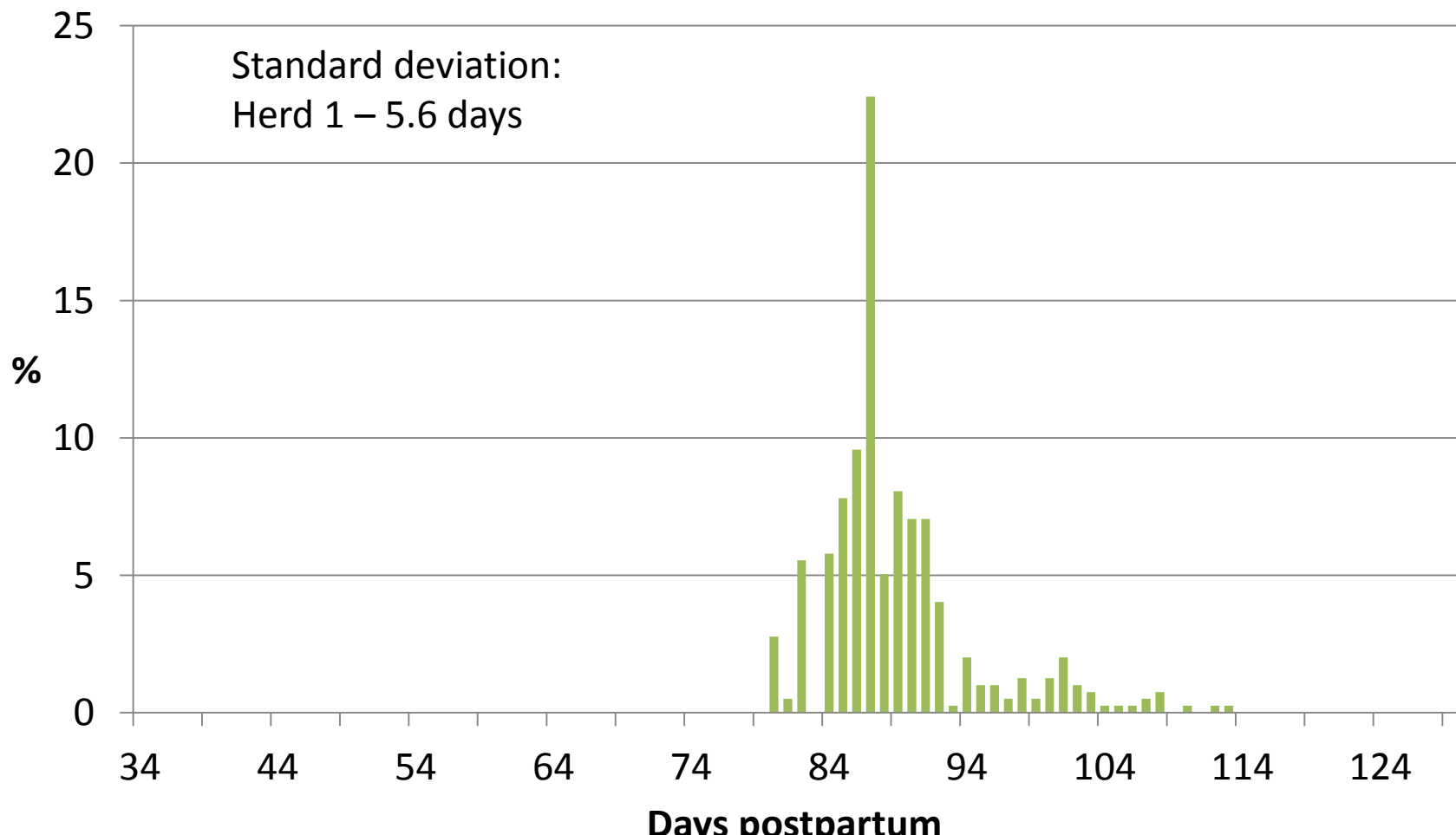
ESTROUS SYNCHRONIZATION AND AI IN BEEF CATTLE



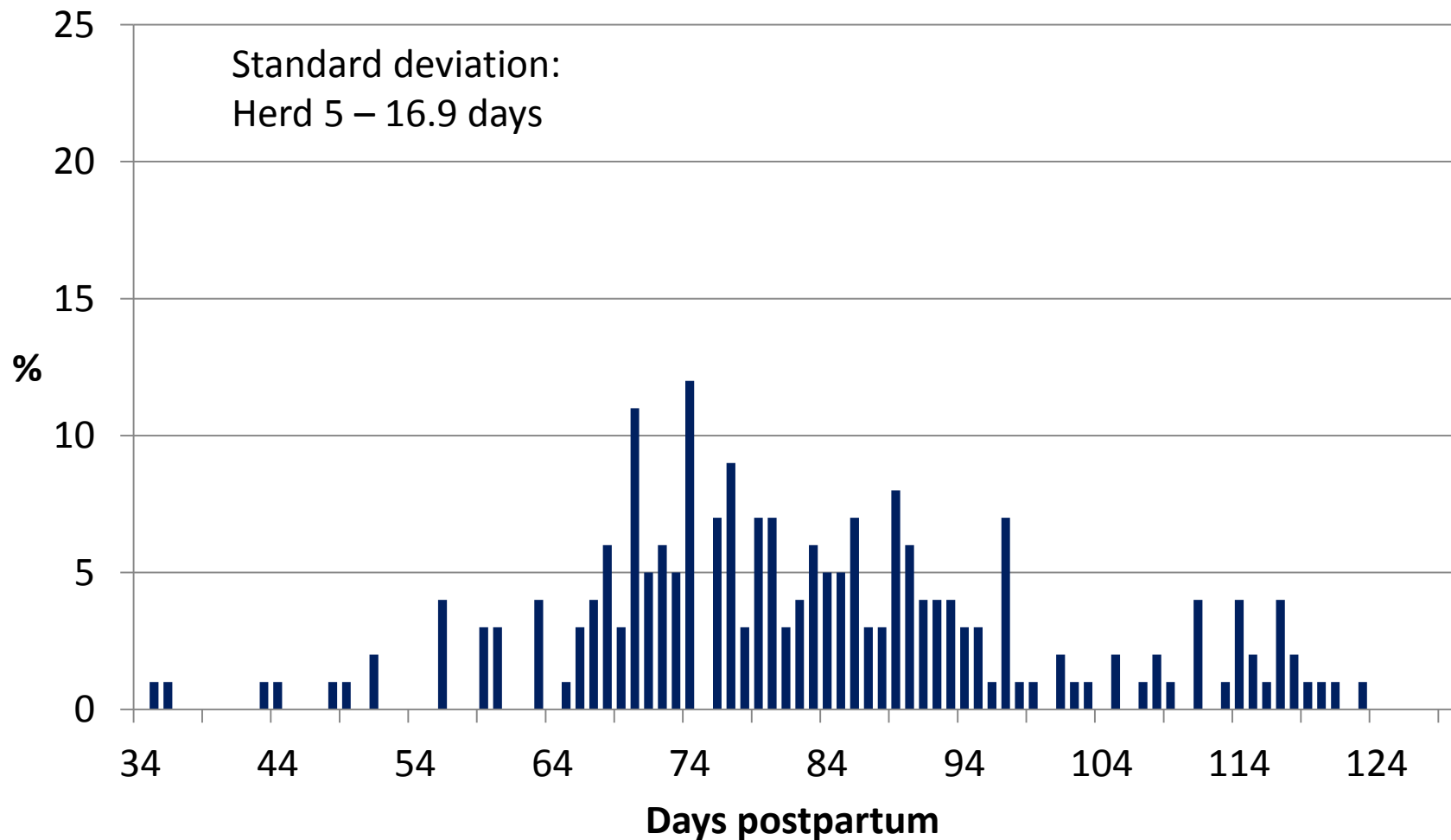
PREGNANCY RATES BY HERDS



DISTRIBUTION OF DAYS POSTPARTUM – HERD 1

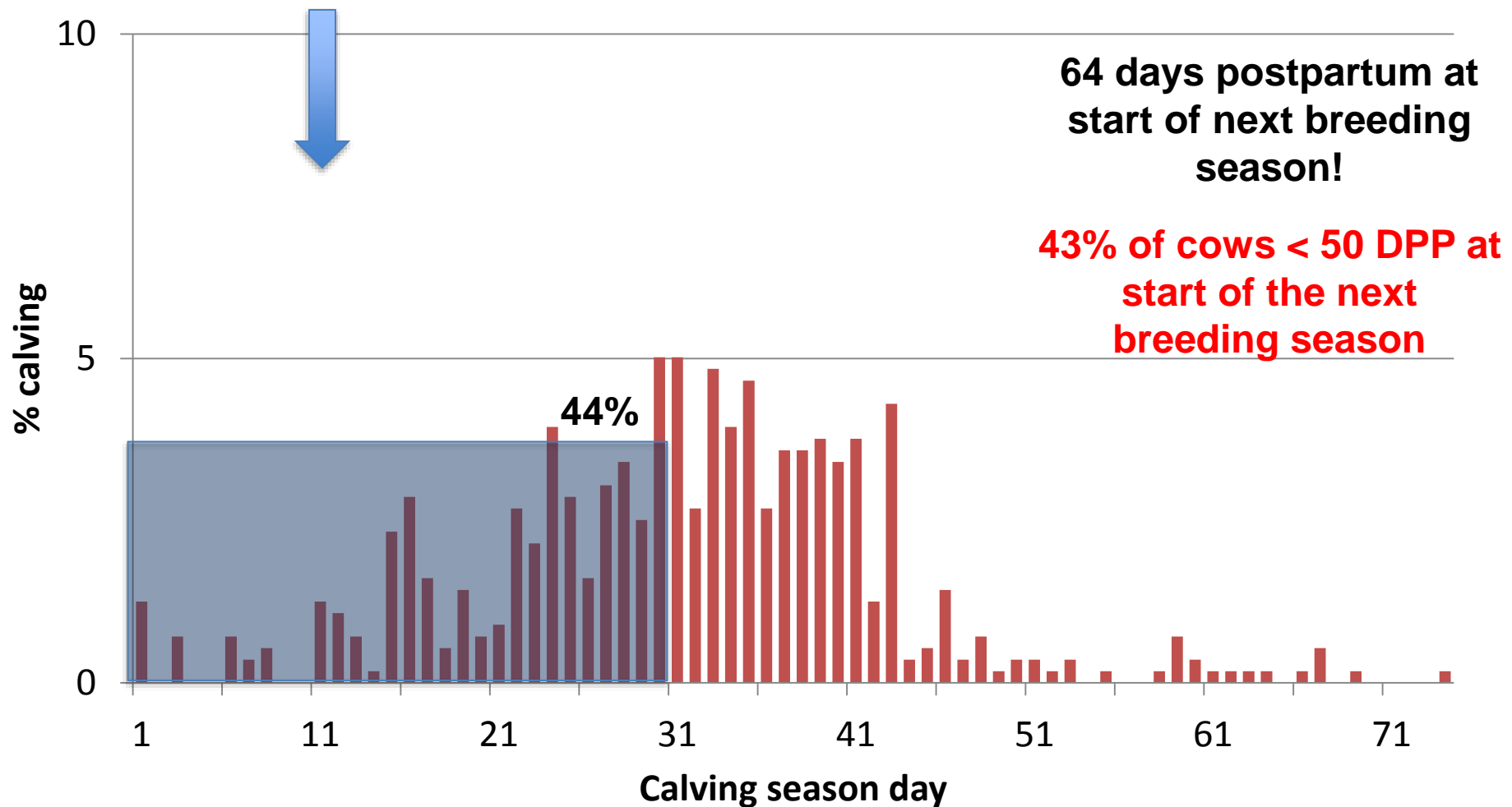


DISTRIBUTION OF DAYS POSTPARTUM – HERD 5



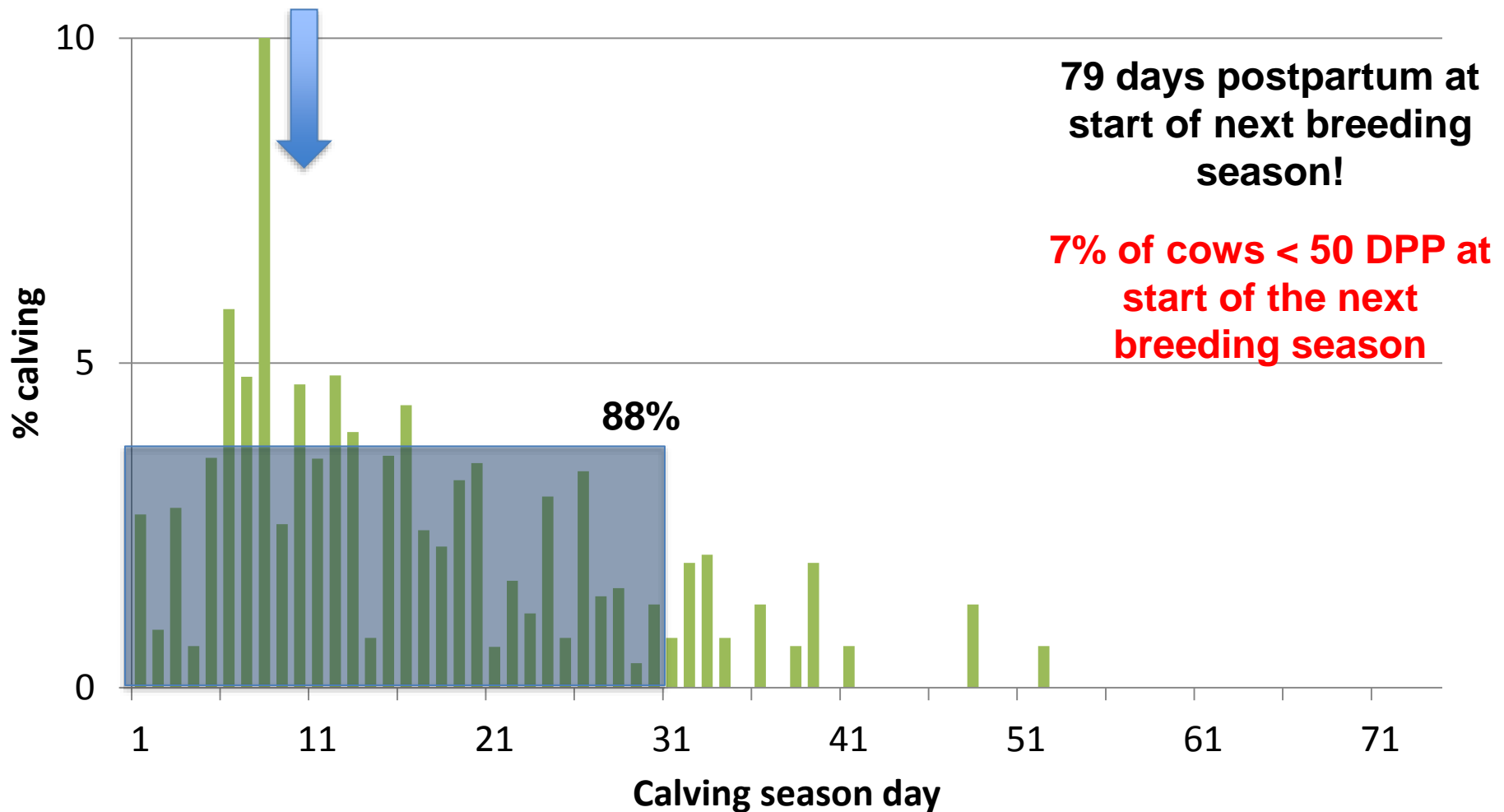
CALVING DISTRIBUTION AFTER EXPOSURE TO BULLS

Planned 1st day of calving season

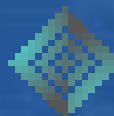


CALVING DISTRIBUTION AFTER EXPOSURE TO AI AND ES

Planned 1st day of calving season



Other Factors Influencing Reproductive Performance

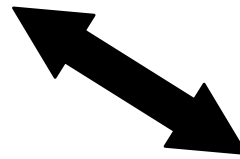


CLIFF LAMB

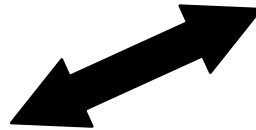
**Estrous cyclicity responses
of heifers of distinct body
conditions to energy
restriction and repletion**



BCS 3



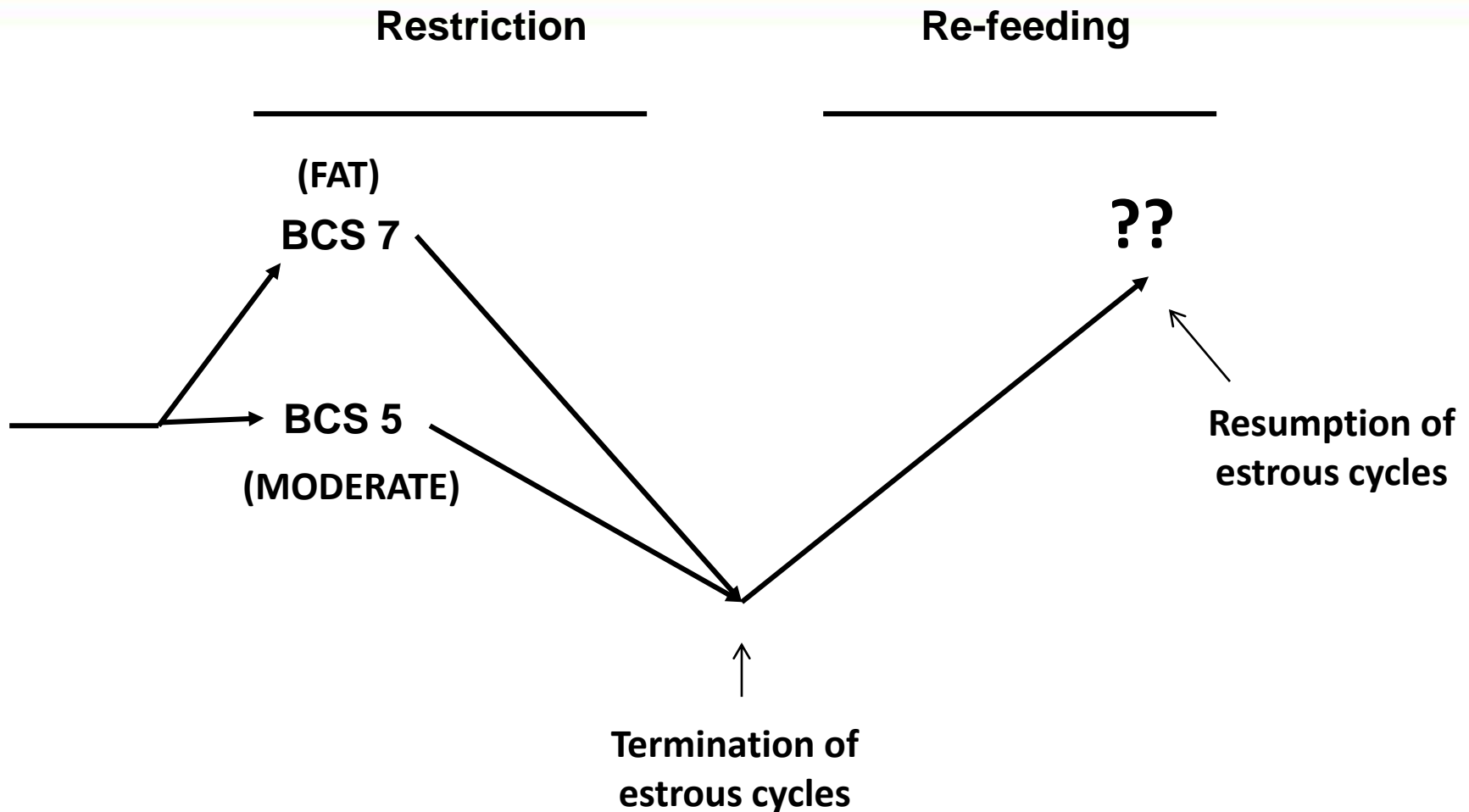
BCS 5



BCS 7



IMPACT OF CHANGE IN BCS ON REPRODUCTION IN HEIFERS



CHANGE IN BW, BCS AND DAYS TO ANESTRUS DURING FEED RESTRICTION

Item	Treatments	
	MODERATE	FAT
Initial BW, kg	937 ^a	1,136 ^b
Initial BCS	5.0 ^a	7.1 ^b
BW at anestrus, kg	781	838
BCS at anestrus	3.1	3.3
Days to anestrus	66.5 ^a	155.9 ^b

CHANGE IN BW, BCS AND DAYS TO 1ST ESTROUS CYCLE AFTER INITIATION OF FEED REPLETION

Item	Treatments	
	MODERATE	FAT
BW at anestrus, kg	781	838
BCS at anestrus	3.1	3.3
BW at 1 st estrous cycle, kg	1,003 ^a	1,131 ^b
BCS at 1 st estrous cycle	5.2 ^a	6.0 ^b
Days to 1 st estrous cycle	67.7	78.9

Summary

- **Body weight**
- **Nutritional management**
- **Reproductive management**
- **Plane of nutrition**
- **Body composition**
- **Animal handling**

A photograph of two brown cows in a green field under large trees with Spanish moss. The scene is peaceful and rural. The cows are the central focus, one looking towards the camera and the other grazing. The trees are large and have thick trunks, with Spanish moss hanging from their branches. The background is a soft, hazy landscape.

THANK YOU!

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