

Improving Value in Calves

2023 Stockmanship & Stewardship

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Premium or not a discount?

Market Report

ROSWELL LIVESTOCK AUCTION SALES, INC.

SALE DATE: MONDAY, MAY 8, 2023

1240 head of cattle sold on Monday, on an uneven market, with excellent buyer attendance. This is the top of the market and prices range down from this according to quality, quantity, condition and fill. Compared to the last week:



“Value-Added”

- To What?
- Important to establish a baseline and know where your operation is at before considering “Value-Added”.
 - Your efforts might be better served on “traditional management” which adds value!

First Question

- How do you market your calves and how much time do you have to put into marketing?
 - Niche marketing requires time and commitment especially to get started.



“Management Value-Added”

- Mixed undesirable breeds
- Horned
- Bulls
- Fresh-weaned
- High stress
- Likely the biggest bang for your buck is cleaning these up

“Uniform Program”

- Sale barn commission and fees
- Varies but often somewhere around 3% + fees
- Is a discount for operations large enough to fill a truck otherwise
- Example: 80 steers means you need to run about 200 cows to sell on the ranch. Yearly = sale barn

“Quality Program”



Large



No. 1



Medium



No. 2



Small



No. 3

“Quality Program”

- Assume selling 550 lb steers
- Price break of \$18 between L1 and M2
- Difference is about \$100/calf
- If a bull breeds 25 cows, then a good bull can yield \$2500 premium in a single year
- *Highly variable

Shrink

- “Pencil Shrink”: Shrink is pre-agreed upon prior to sale and shipment of cattle.
- Sale-barn shrink: actual shrink experienced by calves at sale-barn.

Shrink

- 100 calves averaging 550 lbs = 55000 lbs
- 3% pencil shrink = -1,650 lbs
- 9% actual shrink = -4,950 lbs
- 1,650 lbs X \$2.50 = -\$4,125
- 4,950 lbs X \$2.50 = -\$12,375
- Over \$82/calf difference

“Healthy Program”

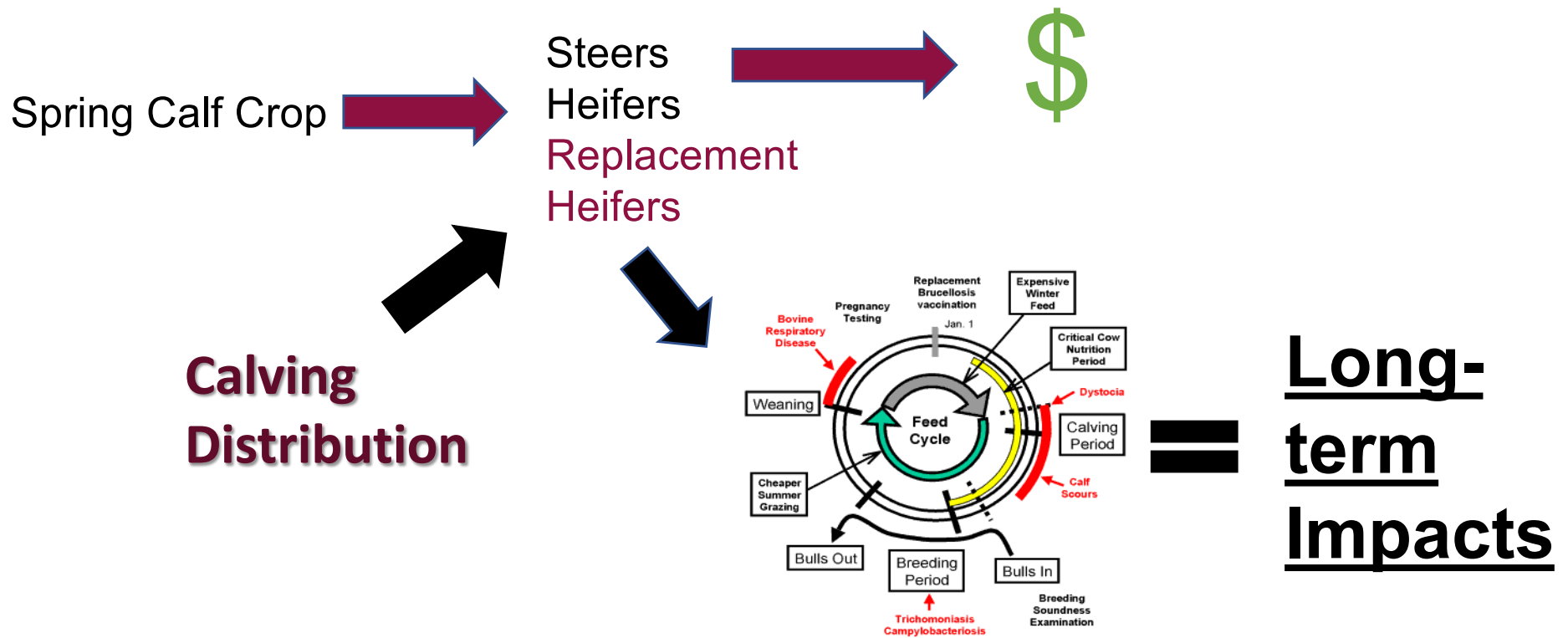
- Bovine respiratory disease
- Remains the largest challenge facing the beef industry.
- Cost is \$500 million+ annually
- Fresh weaned, naïve calves are the most susceptible.

2017 ACES HIGH Sale Results

STEERS					
Weight	ACES	Value	Non-Value	ACES VS. Value	ACES VS Non-Value
400-449	\$ 194.76	\$187.66	\$ 177.16	\$ 7.10	\$ 17.60
450-499	\$ 186.23	\$177.70	\$ 167.81	\$ 8.53	\$ 18.42
500-549	\$ 172.55	\$157.31	\$ 158.64	\$ 15.24	\$ 13.92
550-599	\$ 168.21	\$153.88	\$ 142.39	\$ 14.33	\$ 25.82
600-649	\$ 147.29	\$140.69	\$ 143.15	\$ 6.59	\$ 4.14
650-699	\$ 147.66	\$141.95	\$ 129.71	\$ 5.71	\$ 17.95
700-749	\$ 144.50	\$130.14	\$ 129.69	\$ 14.36	\$ 14.81
750-799	\$ 141.53	\$ -	\$ 122.58		\$ 18.95



Beef Production Cycle

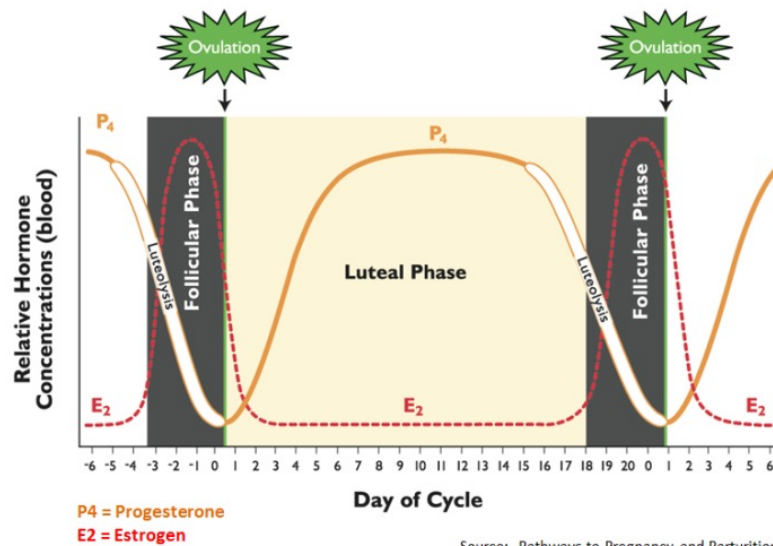


What is Calving Distribution?



- First assumption: you have a calving season.
- Second assumption: it is a well-defined calving season.
 - Today's talk: assume 3 month breeding/calving season.
- Calving distribution = the number of cows calving within a 21-day window during the calving season.
- Start of the 21-day window is:
 - When the third mature cow has calved *or*
 - 283-285 days after the start of breeding season.

Why 21 days and 283-285 days?



**Gestation
in cattle =
283-285
days**



Aggie Math: 3 month breeding season

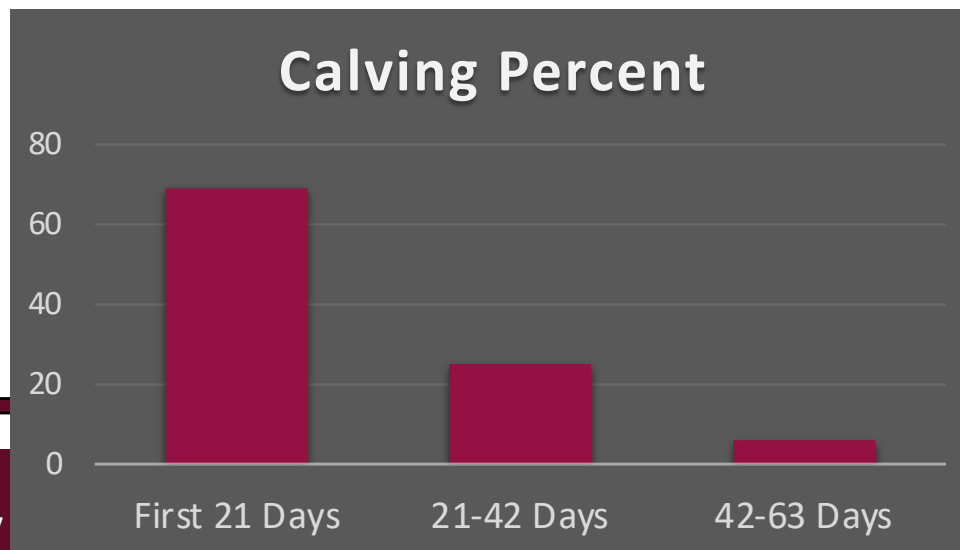


- 3 months: May (31 days), June (30 days), July (31 days) = 92 days
- If Bessie the cow breeds on first day and Lola the cow breeds on last day, Bessie's calf will be 92 days older.
 - 92 days x 2.25 lbs/day = 207 lbs
 - 205 day adjusted weaning weight
- Assume Lola ovulated May 1st, missed on May 1st, missed on May 22nd, missed on June 12th, missed on July 2nd, and conceived on July 23rd.
 - Required multiple services prior to conception

Aggie Math: 3 month breeding season



- Conceive on May 15th = Calve Feb. 21st
- Conceive on July 15th = Calve April 23rd
 - Days post partum: 70 days vs. 8 days
- General Benchmarks:



Within a calving season



- Cows that calve earlier will wean heavier calves.
 - Every 21 days = approximately 50 pounds.
 - Remember: a cow will only breed (and thus calve) at approximately 21-day intervals.
 - Your cost to run a cow that calves in the first 21 days is the same as a cow that calves in the last 21 days.
 - Uniform calf crop.



Calving Interval: Steer Performance



	Calving Period 1	Calving Period 2	Calving Period 3
Birth date, day of year	73	91	116
Calf birth BW, lbs	81.6	83.8	83.8
Calf WW, lbs (no difference in 205 d)	525	496	450
Final BW, lbs	1300	1279	1239
Hot Carcass Weight, lbs	818	805	778
Marbling Score	569	544	519
USDA choice or better %	79	78	65

Funston et al., 2015



Calving Interval: Weaning Weight



Weight difference at weaning:

	Calving Period 1	Calving Period 2	Calving Period 3
Lesmeister et al., 1973	.	-46	-71
NDSU data	.	-40	-88
Funston et al., 2012	.	-29	-75
Cushman et al., 2013	.	-46	-97





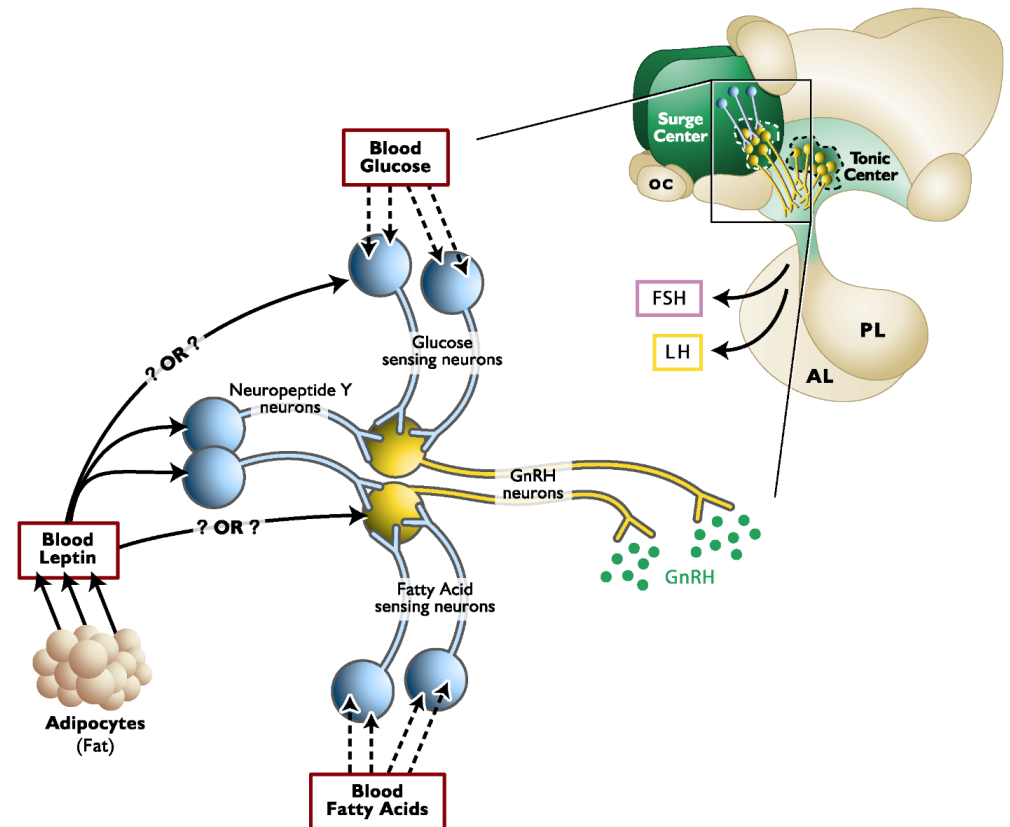
What about long-term impacts? Replacement Females



Calving Interval Impacts on Replacement Heifers: Puberty



- Puberty = age at which a female can support pregnancy without deleterious effects.



Calving Interval Impacts on Replacement Heifers: Puberty



- What target do we use when developing heifers?

BODY WEIGHT!!



Calving Interval Impacts on Replacement Heifers: Body Weight



- Scenario:

	Bessie's Heifer	Lola's Heifer
Birth Date	Feb. 7th	March 20th
Birth Weight	80 pounds	80 pounds
Days to weaning	240	198
2.0 pounds/day	560 lbs at wean	476 lbs at wean
Mature weight	1300 lbs	1300 lbs
Target weight (60%)	780 lbs	780 lbs
Days to breeding	210 days	210 days

Calving Interval Impacts on Replacement Heifers: Body Weight



- Scenario:

	Bessie's Heifer	Lola's Heifer
2.0 pounds/day	560 lbs at wean	476 lbs at wean
Mature weight	1300 lbs	1300 lbs
Target weight (60%)	780 lbs	780 lbs
Days to breeding	210 days	210 days
Pounds needed	220 pounds	304 pounds
Average per day	1.05 lbs/day	1.45 lbs/day

- Either increase ADG = \$ or heifers breed later.
 - Due to management considerations, it is usually the latter.



So, everything is a function of weight, right?



Calving Interval Impacts on Replacement Heifers



- University of Nebraska study: heifers

	Calving Period 1; 651	Calving Period 2; 304	Calving Period 3; 64
Birth date, day of year	77	93	113
Calf birth BW, lbs	79	82	84
Calf WW, lbs (no difference in 205 d)	483	470	434

Funston et al., 2015



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Calving Interval Impacts on Replacement Heifers



- Breeding season

	Calving Period 1; 651	Calving Period 2; 304	Calving Period 3; 64
Prebreeding BW, lbs	653	644	608
Cycling at breeding, %	70	58	39
Pregnancy rate, %	90	86	78

Note: Prebreeding BW and % mature BW (55% of 1200lbs = 660lbs)



Calving Interval Impacts on Replacement Heifers



- Calving season to weaning:

	Calving Period 1; 651	Calving Period 2; 304	Calving Period 3; 64
Precalving BW, lbs	946	948	922
First calf birth date, day of year	68	73	75
% calving in 1 st 21 days	81	69	65



Calving Interval Impacts on Replacement Heifers



- Weaning:

	Calving Period 1; 651	Calving Period 2; 304	Calving Period 3; 64
Cow weaning BW, lbs	924 (946)	930 (948)	930 (922)
Calf weaning BW, lbs	426	417	410
Pregnancy rate after first calf, %	93	90	84

Calving Interval Impacts on Replacement Heifers



- U.S. Meat Animal Research Center:

Pregnancy	Calving Period 1; 11,061	Calving Period 2; 4,372	Calving Period 3; 1,116
2 nd	93	88	84
3 rd	93	90	88
4 th	94	92	91
5 th	94	92	89
6 th	94	93	93



Calving Interval Impacts on Replacement Heifers

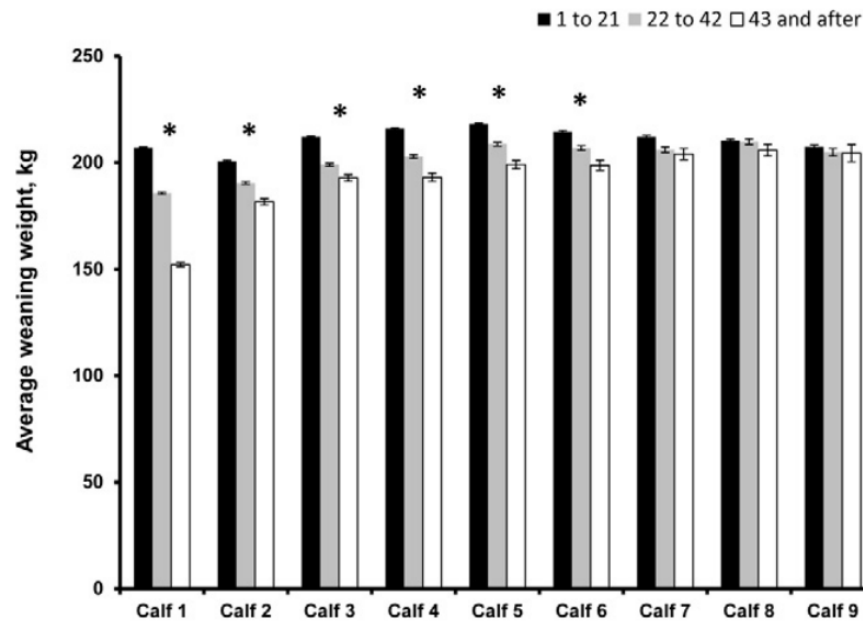


Figure 3. Calf weaning weights based on heifer calving period for the U.S. Meat Animal Research Center (USMARC) cows. Heifers that calved in the first 21 d of their first calving season weaned a heavier calf in each of their first 6 calving seasons (* $P < 0.05$).

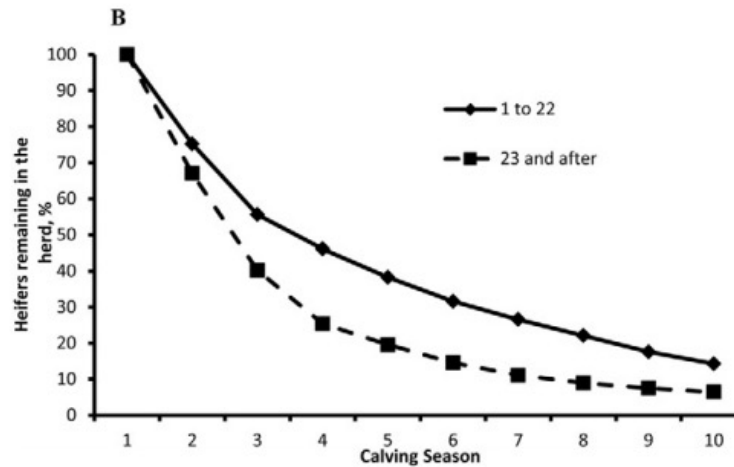
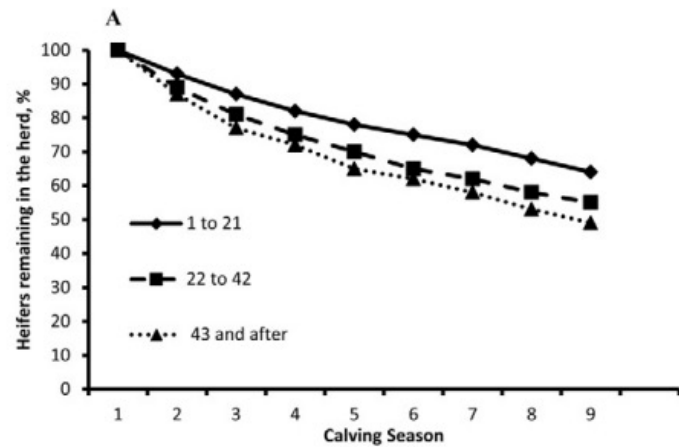
Cushman et al., 2013



Calving Interval: Retention

US MARC.

Evaluated 16,549 Angus
and Angus cross Heifers

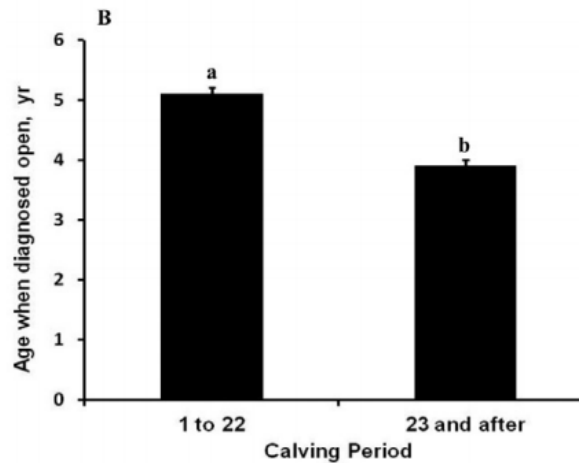
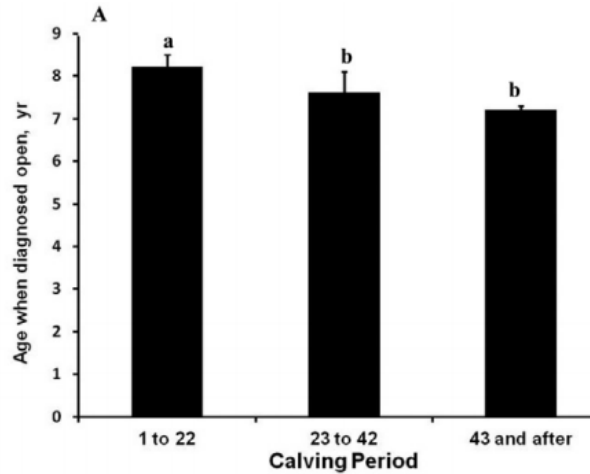


Commercial beef herds in SD.
2,195 heifers



Calving Interval: Age when first open

US MARC.
Evaluated 16,549 Angus
and Angus cross Heifers



Commercial beef herds in SD.
2,195 heifers



Impacts of Calving Interval: Summary



- Cows/heifers that calve in 1st 21 days wean a heavier calf.
 - Up to 90+ lbs heavier than those calving in last 1/3 of calving season.
 - Every time she misses, it costs you up to 50 pounds.
- Heifers born in the 1st 21 days:
 - Heavier and more likely to breed in the 1st 21 days.
 - More likely to remain in the herd longer.
 - Will wean 1-2 more calves in their lifetime.
 - Overall, will be more profitable.
- **Keeping heifers that were born after the first 21 days of the calving season is setting the stage for reduced profits over the next half decade or longer.**





How to alter calving distribution



Altering Calving Distribution: Some Input



- Utilize estrus synchronization in cows in conjunction with natural service.
- The concept:
 - Turn out bulls.
 - Run all cows in 4.5 days later and administer prostaglandin (Lutalyse® for example).
 - Larson and Funston (2009) demonstrated that this method increased the number of cows calving in the first 21 days by 12%.
 - NMSU Animal Science and Corona Range and Livestock Research Center.



Altering Calving Distribution: Low Input



- Lighter calves probably came from late breeding cows. Consider this in your culling decision or when selecting replacement heifers.
- Manage your breeding season (60 days can be sufficient; over 90 days is unnecessary).
- If possible, keep more replacement heifers than you need.
 - Develop heifers to 55% of mature weight.
- Expose heifers for a short (25-30 day) breeding season.
- Preg check 45 days* after breeding and sell all open heifers (still A maturity for beef market).



Cooperative Extension Service

Adapted from a series of articles and lectures from Mr. Burke Teichert along with published data.



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Questions?

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