
Minimizing Pregnancy Loss

Navajo Sustainable Ag Project

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Why Don't Cows Breed Back Or Stay Bred?

- Disease
 - Brucellosis
 - BVD
 - Lepto
 - Vibrio
 - Trich
- Poison plants
 - Locoweed
 - Lupine
 - Pine needles
- Nutrition – Do your cow's requirements exceed available resources?
 - YES! - But how much and for how long??
 - Milk production
 - Cow size
 - Cow Age
 - Available resources
 - Supplementation
- Management and Measurement



Brucellosis (Bangs)

- Usually results in abortion at 5-7 months of pregnancy
- Birth – weak, unhealthy calves
- Widespread in the 1950's
- National eradication program
- Highly contagious
 - Infected cattle
 - Bison
 - Elk
- AZ, CO, NM and UT are all Brucellosis free
- Can be restrictions moving adult, unvaccinated females across state lines
- Vaccination
 - Non-pregnant females 4-12 months old
- Best Management Practice – vaccinate heifer calves kept for replacements



Bovine Viral Diarrhea (BVD)

- Highly contagious
- Acute, severe sickness
 - Bloody diarrhea
 - High fever
 - Severe respiratory symptoms – pneumonia
 - Often fatal
- Antibiotics ineffective
- Pregnant females
 - Abortion
 - Calf - may be persistently infected (PI)
 - Shed virus and infect other animals the remainder of it's life



BVD

- PI animals easily detected through blood or tissue samples
 - Sometimes appear normal but usually poor
 - Remove from the herd
- Results
 - Lower calving rate
 - Increased number of dry cows
 - Increased calf mortality
 - PI animals in the herd
 - Keep disease process going

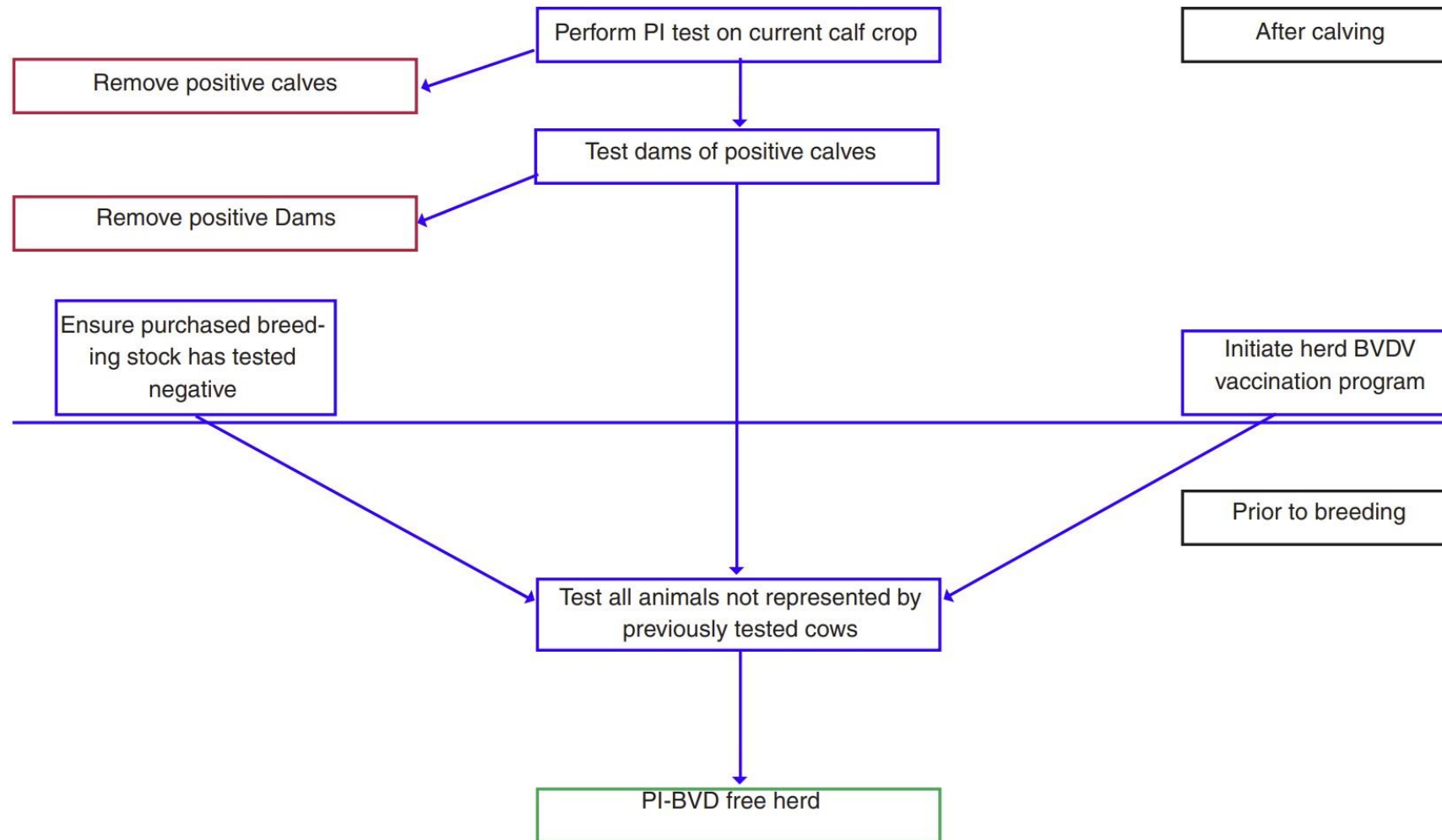


BVD – Best Management Practices

- IF BVD is present
 - Test calves for PI and remove
 - Likely need to test over a two-year period or ongoing if exposure cant be controlled
- Ongoing vaccination program – **Follow advice of local Vet**
 - Vaccinate all calves with modified live vaccine at 3-6 months of age
 - Re-vaccinate replacement heifers with modified live vaccine prior to breeding
 - Annual cow vaccinations – killed vaccine
- Know vaccination program of purchased replacements
- If possible, test before purchase/transporting



Possible BVDV Testing Snenario



Leptospirosis (Lepto) and Vibriosis (Vibrio)

- Venereal disease
 - Transferred bull to cow and vice versa
 - Cow usually develops immunity but can be reinfected in the future
- Abortion – primary indicator
 - Open cows
 - Dry cows
- Control program
 - Vaccination
 - Defined breeding season
 - Cull older bulls – more susceptible



Trichomoniasis (Trich)

- Protozoa that lives in the reproductive tract of infected cows and bulls
- Venereal transmission
 - Bulls become infected by breeding infected cows – vice versa
- Cows can develop short-term immunity and eventually rebreed
 - Can be reinfected the next year
- Open cows
 - Early embryonic death
- Dry cows
 - Late term abortions
- Extended calving season



Trich – Management

- Virgin bulls will be clean
- Older bulls can be chronically infected
 - Use younger bulls
 - No vaccine for bulls
- 80% to 90% of cows bred by infected bull become infected
- Cull open cows
- Cow can be vaccinated
 - Breaking cycle is best
 - Remove bulls – defined breeding season
- Avoid year-round breeding
- Testing – Consult with your Vet
 - Mandatory testing – Utah
 - Test every bull every year
 - Positive bulls – slaughter within 14 days
 - Negative bulls - retest



Trich lives in the folds and sheath of the penis

Poison Plants

- Locoweed
 - Abortions
 - Birth defects
 - Anestrous
 - Bull infertility
 - Affect nursing calves
 - Death
- Poisonous in all stages of growth
- Not usually a problem if good additional forage is available



White locoweed



Woolly locoweed

Poison Plants

- Lupine
 - Birth defects
 - Loss of calves at birth
 - Does not usually cause abortions
 - Death
- Lush early growth more toxic
- Dry seed pods very toxic
- Usually higher elevation



Poison Plants

- Ponderosa Pine Needles
 - Abortion
 - Weak calves at birth
 - Retained placenta
- Usually only grazed when no other forage is available
 - Severe winter weather
 - Drought



What can you do about toxic plants on range?

- Ensure adequate forage
- If the cow doesn't have good alternatives she will eat poisonous plants



Basic Nutrition



Basic Nutritional Needs

- Water
- Energy
- Protein
- Minerals
- Vitamins



Priority of Nutrient Use

1. Maintenance
2. Activity
3. Pregnancy maintenance
4. Lactation
5. Growth
6. Energy reserves
7. Estrous cycle
8. External fat



Water

- Most critical nutrient for performance
 - Easily taken for granted
 - 70% of animal's body weight
- Requirements
 - Unrestricted access
 - Feed intake drops with dropping water intake – No water...No feed
 - ~ 12 gallons per day for a mature animal (70° F)
 - Can double with higher temperatures (90° F)
- Quality
 - “Clean” – improves intake
 - Salinity, pH, sulfates, nitrates – decrease water intake hurt performance



Energy

- Plant cell walls/structural components
 - Grass and other plants
 - Fiber increases as plant matures
 - Lower protein
 - Decrease digestibility
 - Ruminants are uniquely adapted to utilize
- Non-structural – plant cell contents
 - Starch – grains
 - Sugars
- Energy requirements vary
 - Frame size
 - Body condition
 - Stage or production
 - Weather



Protein

- Usually first limiting nutrient in low quality forage diets
- Supplementation often required seasonally
 - Forage quality
 - State of production
- If deficient
 - Limits forage intake
 - Limits forage/energy digestion
 - Hurts overall productivity
- Rumen microbes can utilize nitrogen to make AA's (microbial protein)
 - Non-Protein Nitrogen (NPN) or urea
 - Best to feed in combination with natural protein sources

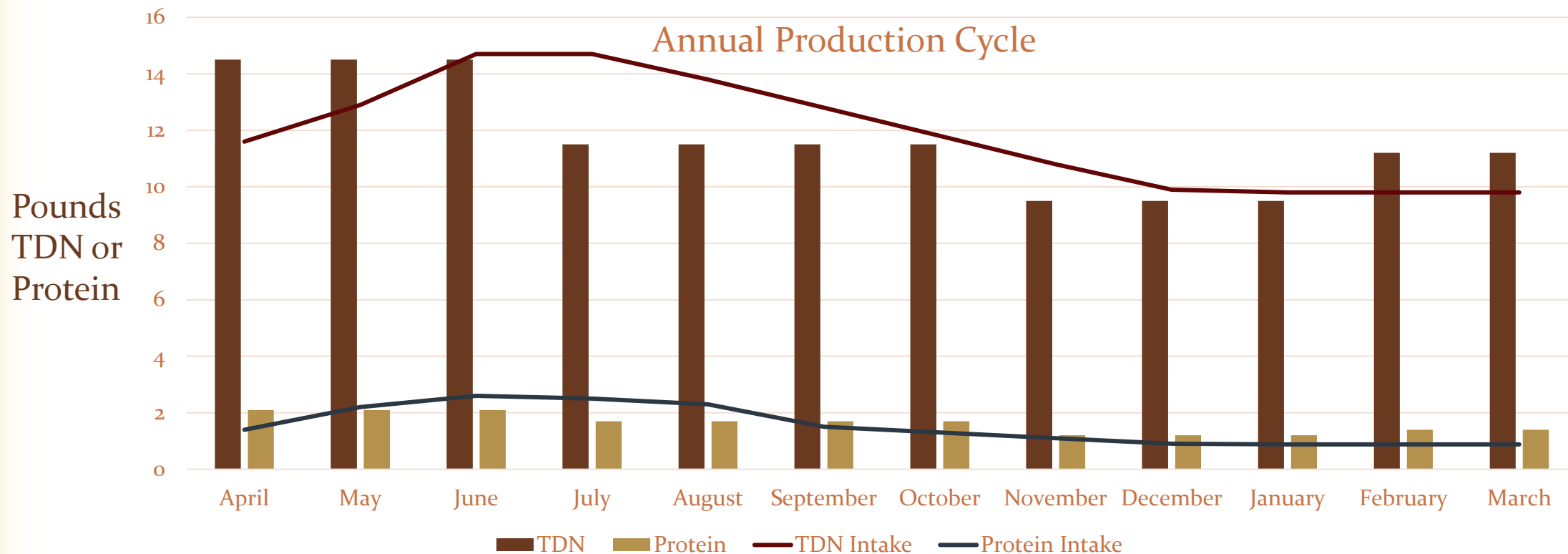


Vitamin and Mineral Supplementation

- Vitamins A, D and E
- Salt – only mineral cattle will seek out
- Phosphorous and Potassium – deficient in mature grass
- Sulfur – can be too high in water and feedstuffs
 - Interfere with absorption of key trace minerals (copper and zinc)
- Copper, zinc Iodine, selenium
 - Health, reproduction over all performance
- Need to supplement year-round
 - Blocks when grass quality is good
 - Loose mineral when grass quality is low



Spring Calving Cow Energy and Protein Balance



Assume 1,100 lb cow, calving on April 1 grazing native range year-round

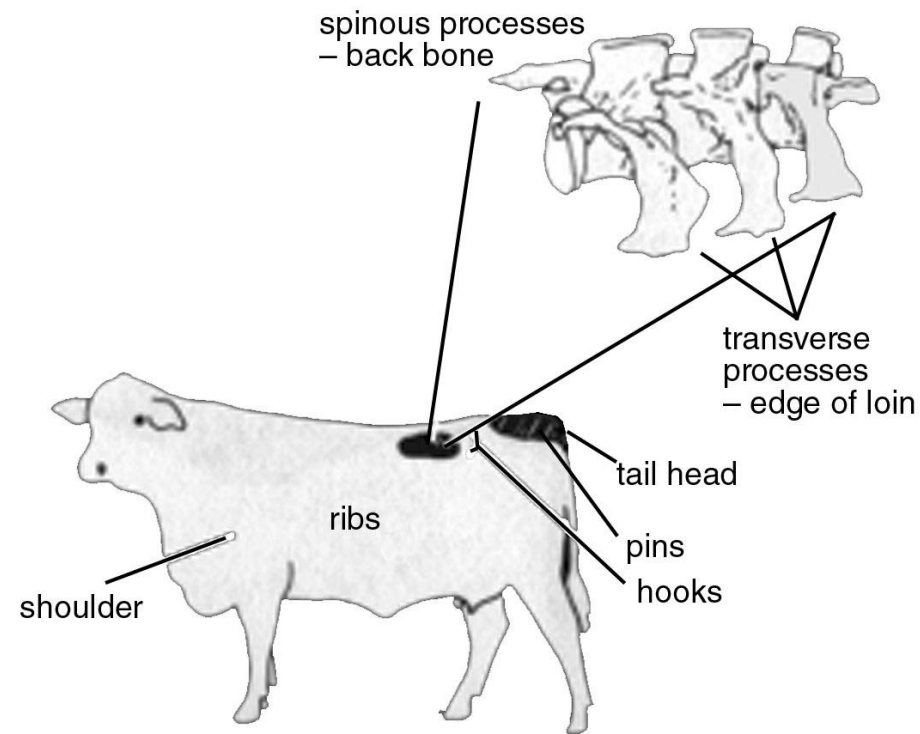


Body Condition Scoring



What is Body Condition Score (BCS)

- Measure of body energy (fat) stores available as an energy source
- Scoring ranges from 1 (very thin, emaciated) to a 9 (obese)





1 - Emaciated

- Animal is severely emaciated
- Physically weak
- All ribs and bones structure easily visible
- Extremely rare to see
- Usually affected with a disease or parasitism



2 - Emaciated

- Animal appears emaciated, similar to BCS 1, but not weakened
- Muscle tissue appears severely depleted through the hindquarters and shoulder



3 - Thin

- Animal is very thin
- No fat cover on ribs or in brisket
- Backbone is easily visible
- Some muscle depletion appears evident through the shoulder and hindquarters



Body Condition Scoring



5 – Ideal for Mature Animal

- Animal may be described as moderate to thin
- Last two ribs may be seen
- Little evidence of fat present in brisket, over ribs, or tail head
- No muscle depletion is seen in hindquarter or shoulder area
- Transverse spinous processes are now smooth and no longer identifiable



4 - Thin

- Animal appears thin
- No ribs easily visible
- Backbone showing
- Spinous processes (along edge of loin) still sharp but barely visible
- Muscle tissue is not depleted through shoulders and hindquarters



6 – Ideal for Mature Animal

- Animal has a good smooth appearance throughout
- Some fat deposition is present in the brisket and over the tail head
- Back appears rounded and fat can be palpated over ribs and pin bones

Body Condition Scoring



7 – In Good Flesh

- Animal is in very good flesh
- Brisket is full
- Tail head shows pockets of fat
- Back appears square because of fat
- Ribs are very smooth and covered with fat

8 & 9 – Obese to Very Obese

- Animal is obese
- Neck is thick and short
- Back appears very square because of excessive fat
- Brisket is distended
- Has heavy pockets of fat around tail head
- Have a heavy deposition of udder fat



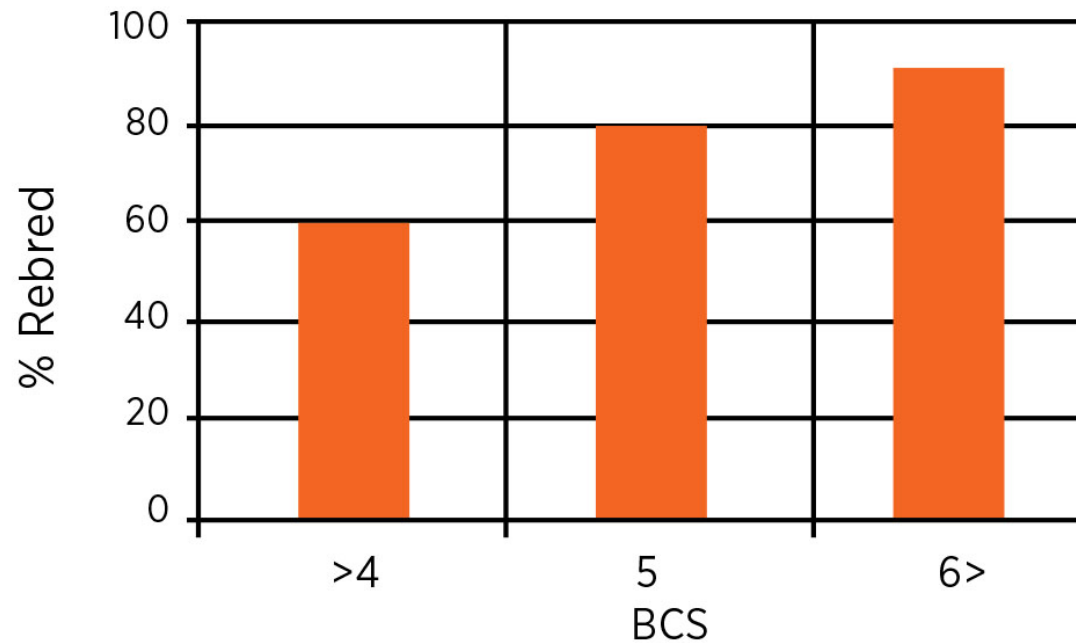
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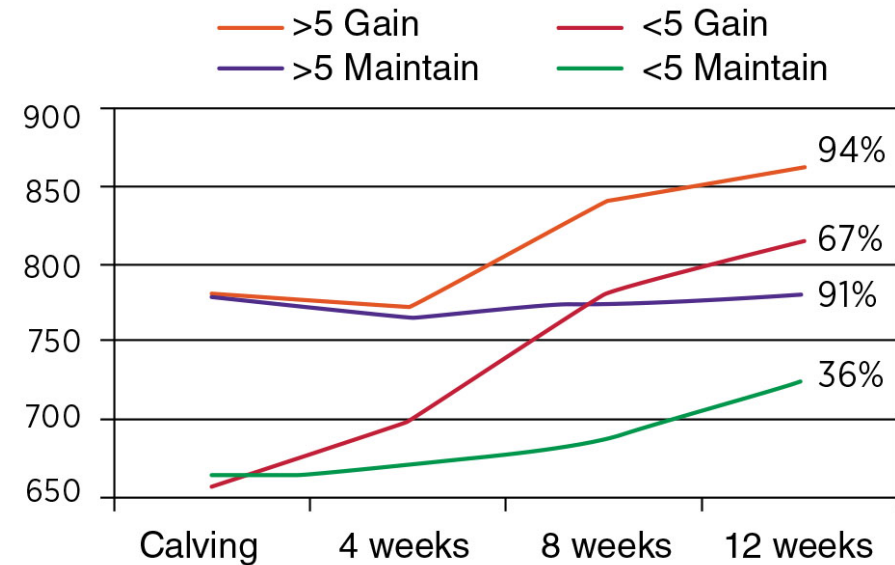
Effects of BCS at Calving

- Strong relationship between BCS at calving and reproductive success
- Cows must conceive at 80 to 85 days post-calving maintain post-partum interval



Effects of BCS at Calving

- BCS > 5 at calving results in high reproductive efficiency
 - Small improvement with weight gain
 - Cost/benefit?
- BCS < 5 at calving results in poor reproduction
 - Big improvement with weight gain but still compromised
- Much cheaper to keep cattle in good condition



Heifer postpartum body weight and BCS gaining or maintaining weight



Reproductive Efficiency

- Cows must breed back 80-85 days post-partum to maintain calving interval
- Calf gains 1.8 lbs/day of age
 - 1.8 lb/day decrease in weaning weight for every 1 day increase in calving interval
 - $\$2.50/\text{lb calf} \times 1.8 \text{ lbs} = \$4.50/\text{day}$
- Assume 90 calving season
 - Calf born on Day 1 will weigh 162 lbs more than calf born on day 90



Important Questions

- Is your calving season in sync with your forage base?
- Does your supplementation program fill the holes?
- Is your cow size and milk production magnifying the weakness in your resources?
 - Supplementation (hay, protein) can be a costly way to cover up the problem



Reproduction Program



SUMMARY



Reproductive Disease Management - Heifers

- Branding
 - BVD - Modified live vaccine
- Weaning
 - Brucellosis
 - BVD – modified live vaccine
 - Lepto
- Pre-Breeding
 - BVD – killed vaccine
 - Lepto
 - Vibrio



Reproductive Disease Management – Mature Cows

- Annual vaccination
 - BVD – killed vaccine
 - Lepto
 - Vibrio
- Cull opens



Reproductive Disease Management - Bulls

- BVD – killed vaccine
- Lepto
- Vibrio
- Trich testing
- Cull older bulls – 6+



Management

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YOU CAN'T MANAGE WHAT YOU DON'T MEASURE



Bulls

- Cull older bulls (6 +)
- Breeding soundness exam annually
 - Structural fitness
 - Adequate sperm quantity and quality
 - Trich test all new bulls
- Defined breeding season
 - 60 to 120 days
 - Remove bulls at the end of the breeding season
 - Break potential disease cycle



Cows

- Defined breeding season
 - 60 to 120 days
 - Remove bulls at the end of the breeding season
- Pregnancy testing
 - Know your preg rates and track over time
 - Preg check approximately 60 after the bulls are pulled
- **Preg rate** = Number of pregnant cows/numbers of cows exposed to the bull
 - Cull open cows
- **Calving rate** – How many calves are born alive?
 - Dry rate = number of dry cows/number of pregnant cows
- **Weaning rate** – How many calves are weaned?



Cows – Vital statistics

- What can we learn from these numbers?
 - Preg rate – Cows that don't get bred
 - Save cost feeding opens
 - Break the potential disease cycle
 - Remove cows that don't fit environment or are inferior
 - Calving rate – Dry cows
 - Abortion
 - Calving difficulty
 - Birth defects/weak calves
 - Weather
 - Weaning rate – Cows that wean a calf
 - Calf health
- Narrow down the problems
- Develop solutions



Summary

- Vaccination program
- Manage poisonous plants
- Proper nutrition and body condition
- Measure and manage reproduction



Questions?

