

# Impact of drought on livestock production and health

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How have your livestock been impacted by drought?

Have you seen performance losses?

Have you dealt with animal health concerns related to drought?

In simple terms, drought reduces the availability of forage for cattle.

Thus, the impact drought has on livestock is nutritionally driven.



# Drought impacts cow performance

- Loss of body weight
- Decreased body condition score (BCS)
- Decreased milk production
  - This likely results in lighter calves at weaning
    - 476 lb. calf in drought year vs. 564 lb. calf in a year of above average precipitation (Scasta et al., 2015).



# Drought impacts calf performance

- Weak calves
  - Greater concern for dystocia in thin cows (NRC, 2016).
- A calf's ability to overcome early calf-hood diseases are impaired by lowered immunoglobulin levels.
  - Cows that calve at a low BCS produce less colostrum, which can affect a calf's survivability (Rasby, n.d.)
- Calves suckling cows/heifers that don't have the energy reserves to produce sufficient milk are likely to grow slower and be lighter at sale time.

# Fetal Programming

Heifer calves born to nutrient-restricted cows (Funston et al., 2012)

- Lighter birth weights
- Lighter weaning weights
- Older at puberty

Steer calves born to nutrient-restricted cows (Funston et al., 2012)

- Lighter weaning weights
- Reduced ADG to weaning
- Reduced live weight and carcass weight at time of harvest
- Lesser percentage of USDA Choice carcasses

# Drought impacts cow fertility

- Lower conception rates (NRC, 2016)
  - Reduced follicular size
  - Reduced embryo quality
  - Decreased number of follicular waves
- Cows with lower BCS at calving have longer post-partum intervals (Rasby, n.d.; NRC, 2016)
- Abortion in extreme cases
  - Starvation of the embryo or fetus
- Delayed attainment of puberty – heifers (NRC, 2016)

BCS	Post-partum interval (days)
3	89
4	70
5	59
6	52
7	31

# Drought impacts bull fertility

There are fewer effects on bull fertility when nutrition is compromised.

- Delayed puberty – young bulls often are most affected by nutritional shortfalls

If moderate or severe depravation of nutrients occur, the following are possible:

- Decreased testicular weight
- Decreased sperm motility
- Decreased sperm concentration
- Permanently impaired sperm output

# Drought impacts cattle health

- When forage availability is low, cattle may resort to eating poisonous plants.
  - Consumption of pine needles could cause abortion
  - Increased nitrate accumulation
- Range ketosis (Merck, n.d.)
  - Metabolic shortage of energy-making precursors
  - Occurs 2-6 weeks postpartum during peak lactation
- Lumpy jaw and woody tongue from eating sharp, dry forages
- Increased incidence of soil-derived diseases (anthrax, blackleg) because cattle graze closer to the ground
- Lowered response to vaccines

During drought conditions, the objective for cattle producers is to ensure nutritional requirements for cattle are met with limited forage resources.

What are ways you have managed around drought to maintain animal performance and minimize negative health concerns?

There are management strategies that allow producers to accommodate reduced forage availability.

# Early wean calves

Remove the demands of lactation on the cows.

- For each one pound increase in milk yield there is a 0.73 – 0.82 lb. increase in daily forage DMI requirement during lactation (Johnson et al., 2003).
- Because forage resources are scarce during drought conditions, removing lactational demands reduces forage intake demands.
  - **For each 2.5 days that the calf is weaned, there is an extra day of forage available for the cow to graze (Rasby and Warner, n.d.).**

This only works when you have a plan for the calves you are weaning.

- Sell calves
- Feed calves

# Early wean calves

Weaning calves early has benefits beyond reducing lactational demands on the cow:

- Earlier returns to estrus
  - Cows subjected to early weaning had a 73 day postpartum interval vs. 90.5 day postpartum interval in cows subjected to traditional weaning (Lusby et al., 1981).
- Likely increase in pregnancy rates
  - 12% higher pregnancy rates when utilizing AI (Waterman et al., 2012)
  - 96.8% vs. 59.4% pregnancy rate difference when using natural service (Lusby et al., 1981)
- Increased body condition (1 BCS unit) as compared to cows that weaned calves around 200 days old (Waterman et al., 2012)
  - Early-weaned cows gained 0.29 lb./day, whereas traditionally-weaned cows lost 0.79 – 1.12 lb./day (Waterman et al., 2012).
- Improved growth (2 and 3 year old cows)
- Heavier birth weights on calves born the following year (Waterman et al., 2012)

# Additional drought management strategies for your cow herd

- Cull low producing cows
  - Cull as early as possible to capitalize on higher cow prices
- Creep feed calves
  - This doesn't reduce the energy requirements of cows, but will improve calf growth
- Supplement cows
  - Corn supplementation reduces forage digestibility
  - Supplementing with a protein cube will increase forage intake
  - Forage supplementation (alfalfa) and/or grain co-products may be the best option.
- Get creative with your grazing management
- Feed pairs in a dry lot

# Thank you



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