

Texas Dairy Matters

Higher Education Supporting the Industry

SARA: NECESSARY EVIL OR MANAGEABLE CONDITION

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Sub-acute ruminal acidosis (**SARA**) is described as a digestive disorder where the pH of the ruminal contents is between 5.5 and 5.8. Historical estimates indicate it costs the dairy industry in North America between \$500 million and \$1 billion per year. A decrease in rumen pH from the normal range of 6.0 to 6.4 may be attributed to many factors. Some potential causes include:

- Quick diet changes from a lower to a higher concentrate ration,
- Over mixing the TMR,
- High DCAD diets, and
- Diet sorting and errors in nutrient content of feeds.

The decrease in rumen pH is due to increased production of lactate and volatile fatty acids (VFA), which are produced by the rumen microorganisms as feed components are broken down.

After each feeding a drop in pH is expected; however, if sustained below optimum for multiple hours, the negative effects may become apparent. SARA may be difficult to identify and diagnose specifically. It is not a common practice to measure rumen pH, which may be done through rumenocentesis. However, SARA does play a role and commonly exists.

Study results have shown that over 23 % of Holstein cattle sent to slaughter had liver abscesses, an indication of acidosis. Abscesses occur when the level of VFA present in the rumen increase significantly following a feeding challenge. The VFA pass through the ruminal wall, enter the blood stream, and are transported and filtered out of the blood. They then remain in the liver where the abscess forms.

SARA is most prevalent in animals in early to mid-lactation due to the higher energy content of the rations. Cows in this period are consuming large amounts of dry matter for milk

production and maintenance. Also, research has shown that each time the cow experiences a challenge, such as a ration imbalance, the bout of acidosis increases. Cows become more prone to subsequently experiencing acidosis, even if intakes are decreased.

The negative effects of SARA may include: decreased feed intake, displaced abomasum, bloat, milk fat:protein ratio less than one, laminitis, diarrhea and loss of production due to one or a combination of the preceding factors. Some herd level symptoms that may be present if chronic SARA occurs include:

- 1) High herd cull rates for inadequately defined health reasons,
- 2) Poor body condition even with adequate energy intake, and
- 3) Limited response to routine therapy for common health.

A challenge exists in balancing adequate ration energy for the high producing cow to maintain production, while also minimizing the incidence of SARA. However, managing those challenges is possible:

- Separate cows and heifers; at least in the transition period to prevent competition
- Minimize slug feeding by frequently pushing up feed
- Provide adequate bunk space
- Maintain feed access time over 16 hours each day
- Minimize stress caused by pen moves, diet changes, and weather
- Ensure proper mixing of rations to prevent sorting against larger particles
- Know the nutrient content of diet components for accurate ration formulation
- Step up the ration over 4-6 weeks instead of making quick changes

Communicate with your nutritionist and feeder to be sure everyone agrees to the mixing protocol for each ration. Provide training where needed.

While eliminating the occurrence of SARA on your operation may be impossible due to the factors involved, managing the factors under your control minimizes the incidences and associated losses; thus improving herd health and overall productivity.