



Dairy Technical Bulletin

Synergies of Micro-Aid® use with QLF Liquid Supplements

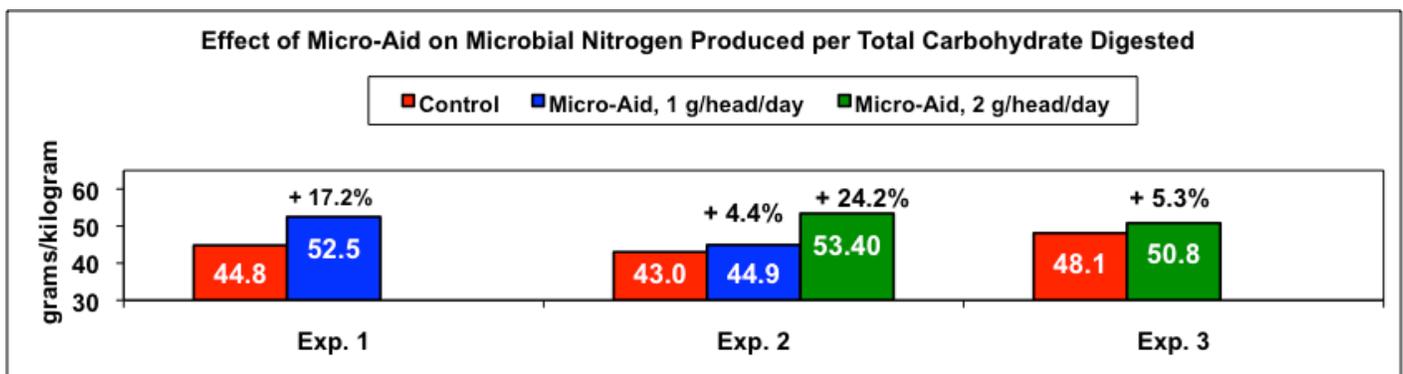
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Micro-Aid®

- An all-natural ingredient approved for use in livestock feeds in the United States and over fifty other countries worldwide.
- Micro-Aid® is manufactured from an all-natural phytogetic extract that contains compounds known to have biological activity.
- Micro-Aid® is not absorbed from the gastrointestinal tract and therefore produces no residue in tissue and requires no withdrawal period.
- Micro-Aid® is classified in the safest of feed classifications, "Generally Recognized as Safe".

How Micro-Aid® Works

- The active component in Micro-Aid® is composed of saponin molecules that contain both water- and fat-soluble components. Saponins have natural detergent or surfactant properties that provide a protective coating over cells and micro flora in the mucosal lining of the gastrointestinal tract.
- Saponin molecules have both antiprotozal and antimicrobial properties.
- Rumen protozoa actively ingest bacteria causing proteolysis of bacterial protein in the rumen, thus increasing intestinal ammonia and decreasing bacterial protein outflow.
- Micro-Aid has been shown to decrease protozoa and increase number of bacteria within In Vitro fermentation (Valdez et al., 1986).
- Increasing the number of rumen bacteria and enhancing nitrogen use by ruminal microorganisms improves efficiency of feed utilization and reduces nitrogen losses.



Source: West Virginia University

- Improved protein nutrition to the cow:
- Increased microbial protein flow to lower gastrointestinal tract
- Microbial protein provides the best source of amino acids

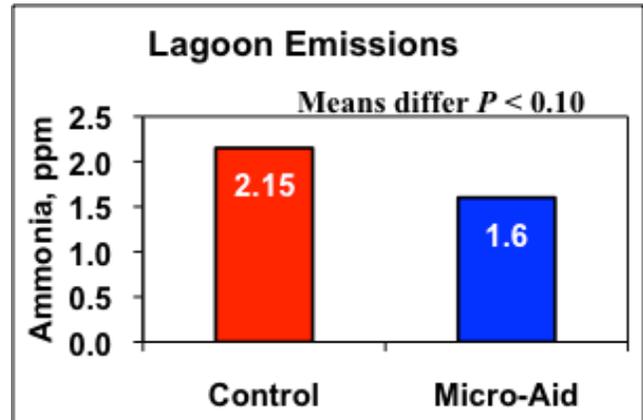
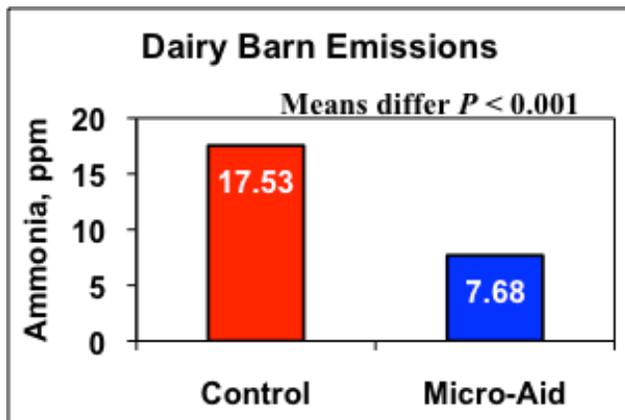


Nutrition and More . . .

#TB-4329

Performance and Environmental Benefits of Micro-Aid® in Dairy Cows

- Improved milk yield by 3.5 lb/cow/day
- Reduced MUN by 18.3%
- Reduced BUN by 32.9%
- Improved reproductive efficiency
- Reduced aerial ammonia emissions



QLF Dairy Liquid Feeds

- **Improve Rumen Function** – Liquid supplements provide sugar and degradable protein to fuel rumen microbial growth and forage digestion.
 - Prevention of sorting through liquid supplement use decreases risk of SARA and improves consistency of feed nutrients consumed by the cow.
 - QLF liquid supplements can carry deliver and distribute additional ration ingredients that stimulate rumen function, such as Micro-Aid®.
- **Enhance N Utilization** – Dietary molasses inclusion has been shown to decrease rumen Ammonia, MUN, and improve microbial protein production (Broderick & Radloff, 2004).
 - Rumen microbes utilize the sugar in molasses for energy to fuel growth and capture rumen ammonia, preventing it from escaping the Rumen and excretion as MUN.
- **Improve Feed Consistency** – Fluidity and stickiness of liquid supplements distributes their nutrients and additives evenly within the TMR and among a variety of particle sizes.
- **Improve Ration Mixing Precision** – On-farm ration mixing is less precise and more variable than rations formulated on paper. Liquid supplements have convenient on-farm storage tanks, precise meter and pump systems and delivery.

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