



MIN-AD

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Effect of Buffer-lyx™ on Subacute Ruminal Acidosis in Lactating Dairy Cows

In 2004, Ridley Block Operations introduced a low moisture block supplement for use as a free-choice dietary buffer for lactating dairy cows. The block is marketed as Buffer-lyx™ under CRYSTALYX® Brand Supplements. Approximately 40% of the block comprises a combination of MIN-AD® and traditional buffers and alkalinizers.

Ridley conducted a study with Dr. Garrett Oetzel in the School of Veterinary Medicine at the University of Wisconsin-Madison to evaluate the effect of using a free-choice low-moisture buffer block on ruminal pH and milk production with lactating dairy cows challenged by subacute ruminal acidosis.

Method

Sixteen ruminally cannulated cows, (8 primiparous in 2002, and 8 multiparous in 2004) were randomly allotted to a treatment or a control group. All cows were fed a TMR and the treatment group had access to the low-moisture buffer block free-choice throughout the study. The trial lasted twelve days and was divided into five periods as shown below. There was an initial three-day baseline period, after which the eight treatment cows had access to the buffer block for the remainder of the study. On day 8, feeding was restricted by 50%; four kg of wheat/barley pellet was added to the baseline TMR on day 9. This was followed by a three-day recovery period.

days 1-3	days 4-7	day 8	day 9	days 10 – 12
baseline, no block	introduction of buffer block	restricted feeding	challenge feeding	recovery period

Results

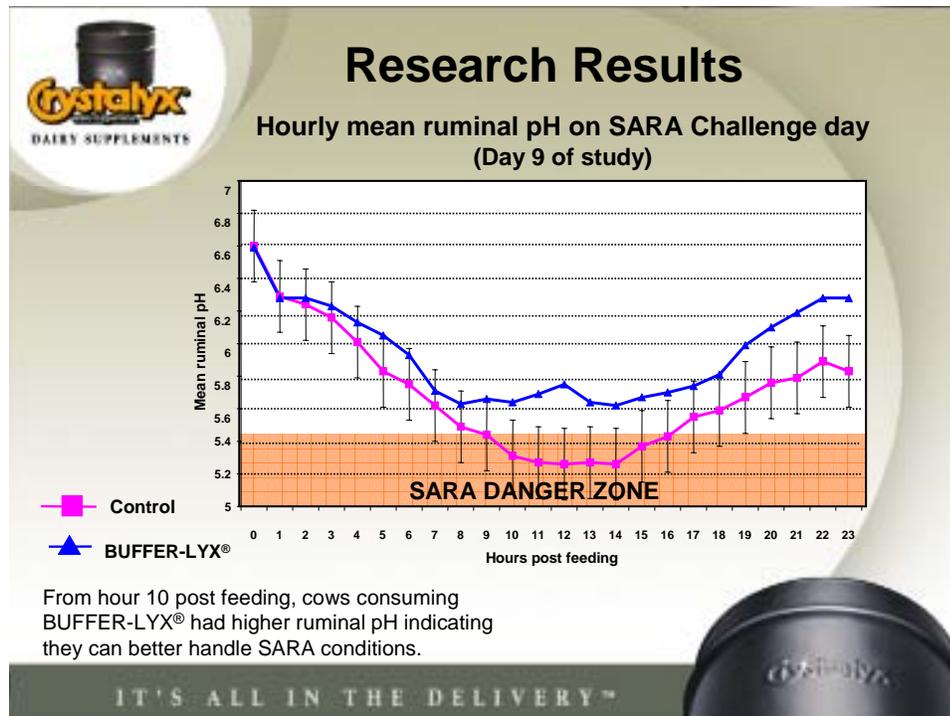
Block intake averaged 0.33 kg of dry matter (DM) per cow/day and was highest (P = 0.05) on day 8. Total DMI (TMR plus block) was not affected by treatment, but DMI tended to be higher during the recovery period for cows with access to the block (19.7 vs 18.0 kg/day, P = 0.12).

Prior to day 8, milk yield averaged 28.5 kg/day. This decreased to 23.7 kg/day on day 9. Cows with access to the block tended to drop less in milk when comparing days 4-7 to the recovery period (1.5 vs 4.2 kg milk/day; P = 0.08).

Ruminal pH in all cows decreased from 6.15 on days 4-7 to 5.78 on day 9 (P < 0.001), which is indicative of subacute ruminal acidosis. The drop in ruminal pH

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was less ($P = 0.03$) for cows with access to the block than the control cows (0.20 vs 0.55 pH units.) A graph of pH vs time on day 9 is shown below. Cows with access to the block tended to have higher mean ruminal pH during recovery (6.26 vs 6.07; $P = 0.13$). Cows with access to the buffer block spent fewer hours (6.04 vs 9.25 hours/day; $P = 0.05$) and had less area (111.2 vs. 200.0 min x pH/day; $P = 0.03$) below pH of 5.5 during the challenge period. Cows with access to the buffer block increased less in time ($P = 0.03$) and area ($P = 0.11$) below pH 5.5 from days 4-7 to the recovery than did control cows.



Summary

Subacute ruminal acidosis was clearly induced by the challenge feeding. Free-choice access to the buffer block reduced both the duration and severity of the acidosis and tended to assist cows in returning to pre-acidosis ruminal pH and milk production levels.

Results from this Wisconsin/Ridley study corroborate MIN-AD's research that MIN-AD is a beneficial rumen buffer under acidotic conditions (Bulletin D-1).

Further information on CRYSTALYX® Buffer-lyx™ low moisture block supplementation can be obtained from the internet at: www.dairylyx.com or by contacting CRYSTALYX® via the toll free number 888-258-7422.

Ridley Inc. is a leading manufacturer in North America of scientifically formulated animal feeds and animal health products. Its low moisture blocks are marketed under the brand name CRYSTALYX®.

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