

Technical Bulletin

Arm & Hammer Animal and Food Production



CERTILLUS and CELMANAX fed in combination, as an alternative to Terramycin in milk-fed calves, resulted in equivalent health performance.

BACKGROUND

The livestock industry is moving away from routine feeding of antibiotics. This is being driven by government regulations and consumer demand. The use of direct-fed microbials (DFM) and prebiotics is becoming more common in calf operations as a means to achieve healthy and productive animals without the use of antibiotics.

Research has shown that DFMs and Refined Functional Carbohydrates™ can beneficially affect pre-weaned calves. The objective of this trial¹ was to evaluate feeding CERTILLUS™ and CELMANAX™, in combination, to preweaned calves as a performance alternative to the use of Terramycin®.

STUDY OVERVIEW

Trial site was a Western U.S. calf ranch with 5 barns capable of housing 150 calves per barn. Each barn was configured with 4 rows of individual calf stalls. Calves arrived at the ranch within 24 hours of birth and were randomly assigned to control or treatment groups (2 rows of control and 2 rows of treatment calves in each barn). All calves were to receive 2 servings of 3 quarts of colostrum immediately after birth and were fed 3 quarts of 26:20 milk replacer twice daily. Control calves were fed Terramycin 10 mg/lb of body weight daily. Treatment group was fed 0.4g CERTILLUS and 1g CELMANAX SCP/calf/day as an alternative to Terramycin from day 1 to day 35. All calves followed the regular daily protocol regarding feeding, care, disease treatment and electrolytes use.

The trial commenced on February 12th and terminated on April 6th, 2020. Total enrolled animal numbers were 372 calves in the control group and 365 calves in the treatment group.

Data was analyzed via Chi Square; testing relationships between treatment groups for mortality, morbidity and treatment (antibiotic and electrolyte usage). The null hypothesis of the Chi-Square test was that no relationship (difference) in health performance existed between the treatment groups.

RESULTS

There were no statistical differences between control and treated group for mortality or morbidity (pneumonia and scours). Calves fed the combination of CERTILLUS and CELMANAX had numerically fewer deaths, pneumonia and scour events compared to the Terramycin-fed calves (Table 1).

Seventy-one percent of all scouring events were within the first week after arrival. It is suspected that calves were not adequately prepared for shipping from the home farm to the calf ranch resulting in an increased rate of scour events.

TABLE 1

Effects of Treatments on Health Performance.

| Mortality | | | |
|-----------------------------|---------------------------|---------------------------|----------------|
| | Control (n=372) | Treated (n=365) | P-Value |
| Total Dead* (n) | 7 | 5 | 0.990 |
| Pneumonia | 0 | 2 | 0.728 |
| Scours | 5 | 3 | 0.977 |
| Morbidity | | | |
| | Control (n=372) | Treated (n=365) | P-Value |
| Pneumonia (n) | | | |
| Incidence | 22 | 18 | 0.987 |
| Avg. Treatment Days | 1.6 | 2.0 | N/A |
| Scours (n) | | | |
| Incidence – Total | 345 | 335 | 0.993 |
| Incidence – Day 1-7 | 241 | 244 | 0.947 |
| Avg. Treatment Days | 4.8 | 4.7 | N/A |
| Number of Treatments | | | |
| 1X | 152 | 119 | 0.271 |
| 2X | 116 | 126 | 0.881 |
| ≥3X | 77 | 90 | 0.755 |

*Two control calves died; one from injury and a second was undetermined.

CONCLUSION

CERTILLUS™ and CELMANAX™ in combination can be used as an alternative to Terramycin® in milk-fed calves with the expectation of equal health performance.



To learn more about CERTILLUS and CELMANAX contact your nutritionist, veterinarian or ARM & HAMMER™ representative or visit AHfoodchain.com.

1 Data on file. ARM & HAMMER, 2020.