

EFFECT OF AMAFERM® ON THE GROWTH OF RUMINAL BACTERIA, WITH OR WITHOUT ANTIMICROBIAL COMPOUNDS

A. A. Beharka and T. G. Nagaraja

AMAFERM increases the growth of good rumen bacteria in the presence of antimicrobials.

SUMMARY

DOSE OF AMAFERM USED

5% of the rumen fluid medium

The addition of AMAFERM to a medium containing chlortetracycline or neomycin increased the growth rate of *M. elsdenii* and *S. ruminantium* D. The *S. ruminantium* GA31 tended to grow faster with neomycin and AMAFERM together than with neomycin alone. Monensin and AMAFERM combined had no interaction.

PROTOCOL

Type of Animals/Experimental Units

- In vitro

Number of Animals/Experimental Units

- N/A

Trial Design

- Completely randomized design

Treatments

- *Megasphaera elsdenii* B159, *Ruminococcus albus* 7, *Selenomonas ruminantium* D, *Ruminobacter amylophilus*, *Prevotella ruminicola* 23 and *S. ruminantium* GA31 bacteria grown in rumen fluid medium with AMAFERM at 0 or 5% (v/v) – with or without antimicrobial compounds tylosin (2.5 µg/ml), monensin (10 µg/ml), neomycin (20 µg/ml), chlortetracycline (2.5 µg/ml), oxytetracycline (2.5 µg/ml) and bacitracin (20 U/ml)

PROTOCOL (CONTINUED)

Diet Information

- N/A

Data Collection

- Bacterial growth

DISCUSSION OF RESULTS

- Oxytetracycline inhibited the growth of all 6 ruminal bacteria tested
- The addition of AMAFERM to chlortetracycline or neomycin increased the growth rate of *M. elsdenii* and *S. ruminantium* D ($P < 0.1$), but not *R. albus* ($P > 0.1$). However, the increased growth rate for AMAFERM did not reach the level of Control without antibiotics
- *S. ruminantium* GA31 tended to grow faster with neomycin and AMAFERM combined than with neomycin alone
- The addition of AMAFERM to medium containing tylosin decreased ($P < 0.1$) the growth rate of *S. ruminantium* D (0.43 vs. 0.57/h)
- AMAFERM and monensin together had no interaction

BIOZYME INCORPORATED

6010 Stockyards Expy | St. Joseph, MO 64504 USA

Tel: 816-238-3326 | Fax: 816-238-7549

support@biozymeinc.com | www.biozymeinc.com

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