P182 Effect of *Aspergillus oryzae* fermentation extract (Amaferm) with or without antimicrobial compounds on growth of ruminal bacteria. A.A. Beharka and T.G. Nagaraja. Kansas State University, Manhattan 66506-1608

Aspergillus oryzae (AO) extract has been shown to stimulate growth of certain ruminal bacteria, presumably by increasing nutrient uptake or providing some unknown growth factors. However, it is not known whether the effect of AO is influenced by antimicrobial compounds. Therefore, we investigated the effect of AO, with or without antimicrobial compounds, on the growth of ruminal bacteria. *Megasphaera elsdenii* B159, *Ruminococcus albus* 7 and *Selenomonas ruminantium* D (previously shown to exhibit increased growth with Amaferm) and *Ruminobacter amylophilus*, *Prevotella ruminicola* 23 and *S. ruminantium* GA31 (previously shown to be unaffected by AO) were used. Bacteria were grown in rumen fluid medium with filter-sterilized AO at 0 or 5% (vol/vol) of the medium and with or without antimicrobial compounds. The following compounds were included in the study; tylosin (2.5 ug/ml), monensin (10 ug/ml), monensin (10 ug/ml) + tylosin (2.5 ug/ml), neomycin (20 ug/ml), chlortetracycline (2.5 ug/ml), oxytetracycline (2.5 ug/ml), neomycin (20 ug/ml), and bacitracin (20 U/ ml). Growth was monitored by measuring absorbance. Oxytetracycline inhibited growth of all six ruminal bacteria tested. Chlortetracycline or neomycin completely inhibited or decreased ($P<.1$) growth. The addition of AO to medium containing chlortetracycline or neomycin increased the growth rate ($P<.1$) of *M. elsdenii* and *S. ruminantium* D, but not *R. albus* ($P>.1$). Additionally, *S. ruminantium* GA31 tended ($P=.12$) to grow faster with neomycin and AO in the medium than with neomycin alone, even though AO alone had no effect on its growth rate ($P>.1$). However, addition of AO to medium containing neomycin or chlortetracycline was unable to increase growth rates to equal that of the control. In contrast, addition of AO to medium containing tylosin decreased ($P<.1$) the growth rate of *S. ruminantium* D (.43 vs .57/h). AO and monensin combination had no interaction. It was concluded that influence of AO on ruminal microbial activity may be moderated by certain antimicrobial compounds.