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Czech Journal of Animal Science

Effects of a species-specific probiotic formulation on multiresistant *Escherichia coli* isolates from the gut of veal calves

Ripamonti B., Tirloni E., Stella S., Bersani C., Agazzi A., Marocco S., Savoini G.:

Czech J. Anim. Sci., 58 (2013): 201-207

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In this study, 254 *Escherichia coli* isolates from faecal samples of veal calves were evaluated for antimicrobial susceptibility using the disk diffusion method. During the experimental period,

six mass antibiotic treatments were administered to the animals (about one treatment per month). The active principles used were oxytetracycline, colistin, tylosin, doxycycline, chlortetracycline, and sulphonamides. An extremely high resistance prevalence (> 70%) towards penicillin, sulphonamide, tetracycline, ampicillin, and spiramycin was detected. Sixty *E. coli* isolates could be defined as multiresistant, showing resistance to at least 6 antimicrobial classes. Subsequently, we evaluated the inhibitory effect of a species-specific probiotic against multiresistant *E. coli*, showing its beneficial action with large inhibition halos for 76% of the isolates. This suggests the potentiality of the probiotic, putting in evidence a clear advantage of its use in veal calves nutrition, in particular during the first phases, when the animals are more susceptible to severe enteric infections by *E. coli*.

Keywords:

lactic acid bacteria; antibiotic resistance; prevalence; gastrointestinal functionality; veal calves

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