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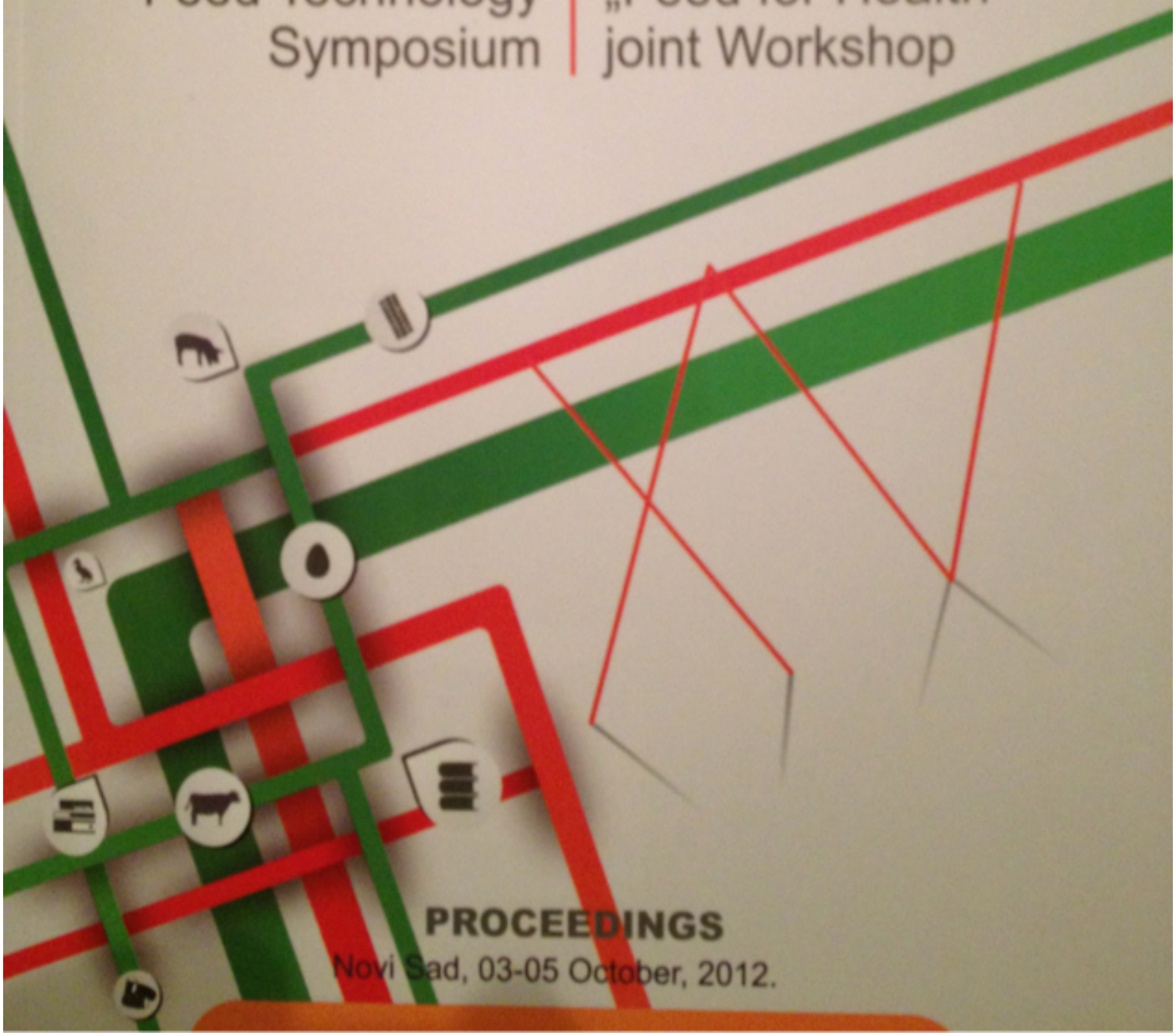

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DIETARY SPECIES-SPECIFIC PROBIOTIC CAN CONTRAST MULTIRESISTANT E. COLI ISOLATES IN THE GUT OF VEAL CALVES

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Cattle are a reservoir of E. coli, that acquires resistant genes from other microorganisms causing antibiotic resistance: antimicrobial activity of probiotics could contrast this pathogen. The aim of the trial was to investigate the inhibitory effects of a species-specific multistrain probiotic (SMP) on multiresistant E. coli isolates from veal calves. Two hundred fifty four E. coli were randomly isolated from monthly-pooled fecal samples on 24 subjects. Animals were bred in 4 boxes of 6 animals each for 6 months. Isolates E. coli were evaluated for antimicrobial susceptibility using disk diffusion methods. CLSI disk diffusion test was performed on each isolate, with eight classes of antimicrobial agents: penicillins (penicillin, ampicillin), sulphonamide, cephalosporins (cephalothin), tetracyclines (tetracycline), aminoglycosides (neomycin, apramycin), macrolides (spyramicin), lincosamides (lincomycin-spectinomycin), quinolones (nalidixic acid, enrofloxacin). Inhibition test of SMP on multiresistant E. coli was then performed. The requisite for E. coli selection was the resistance to penicillins, sulphonamides, tetracyclines, macrolides and to two of the other antimicrobial classes tested. The first step of the experiment evidenced an extremely high resistance prevalence (> 70%) of isolates E. coli towards penicillin, sulphonamide, tetracycline, ampicillin and spyramicin; 4% of tested strains were resistant to all the considered antimicrobials, and sixty E. coli isolates resulted as multiresistant (23.62%). In the second step, the inhibitory effect of SMP against multiresistant E. coli showed very large inhibition halos toward all the isolates: 76.7% with halo > 20mm, 20.0% with halo between 10 and 20mm and 3.3% with halo <10mm. Obtained results evidenced the positive effect of SMP on multiresistant E. coli inhibition: this gives a new perspective on breeding practices to contrast the prevalence of severe infectious by E. coli strains that usually involve veal calves especially during the first weeks of life.

***Keywords**: calf, species-specific multistrain probiotic, antiobiotic-resistant E.coli*