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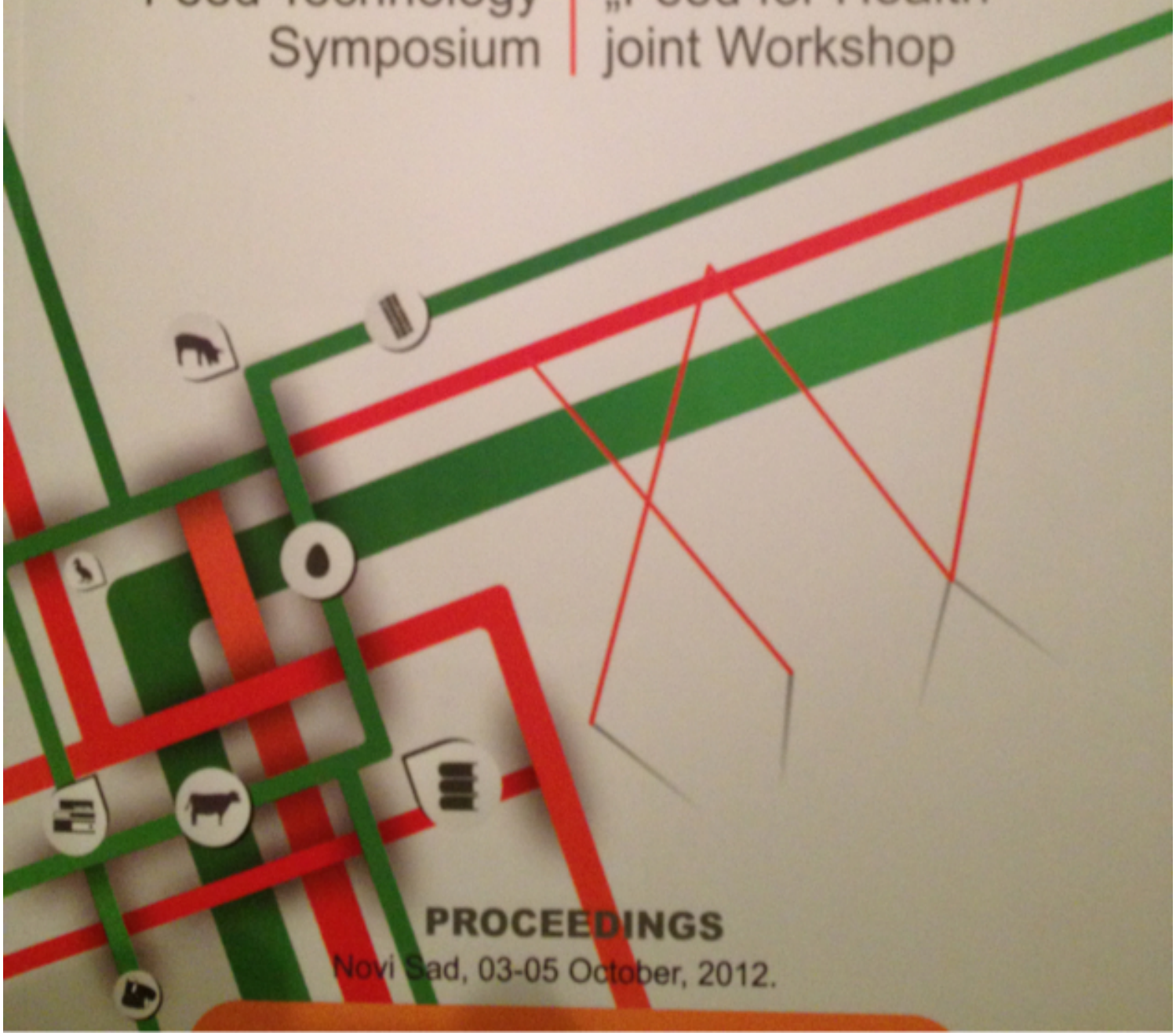

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Mr Slavica Sredanović
Dr Olivera Đuragić

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NEWBORN CALF FED SPECIES-SPECIFIC PROBIOTIC: EFFECTS ON GROWTH PERFORMANCE, HEALTH STATUS, MICROBIOLOGICAL AND HEMATOLOGICAL PARAMETERS AND CELL MEDIATE IMMUNE RESPONSE

Alessandro Agazzi, Serena Maroccolo, Erica Tirloni, Simone Stella, Barbara Ripamonti, Carla Bersani, Vittorio dell'Orto, Giovanni Savoini

Dipartimento di Scienze Veterinarie per la Salute, la Produzione Animale e la Sicurezza Alimentare, Via Celoria 10, 20133 Milan, Italy

Poor performance of young calves is often related to low digestion and absorption of nutrients due to gut colonization of E.coli: species-specific multistrain probiotic (SMP) could improve gut health increasing the digestion efficiency with consequent improved performance. The aim of the study was to evaluate the effects of dietary SMP in calves during the first month of life on performance, microbiological and health status, blood cells count and cell-mediated immune response. Twenty-two Friesian calves, divided in 2 homogenous groups, were fed a milk replacer with (T) or without (C) 1g/d SMP (Lactobacillus animalis-Lactobacillus paracasei-Bacillus coagulans, 30:35:35%, 1.8x1010 CFU/g) plus a concentrate mixture. On 2, 8, 14, 21 and 28d of life growth performance and blood cells count were determined, while fecal Lactobacilli and E. coli enumeration were performed. Daily fecal score and general health score (GHS) were determinated. Skin thickness at 24h post phytohaemoagglutinin (PHA) injection was evaluated on 8 and 28d. Data were analysed by a mixed procedure of SAS. No differences were found on ADG, concentrate intake was higher in T group (14.77kg vs 12.56kg/DM basis; $P<0.05$), but no effect was observed on FCR. E. coli tended to be lower in T animals (3.76 vs 5.01Log CFU/g; $P=0.07$), increasing Lactobacilli/E. coli ratio (2.02 vs 3.73; $P<0.05$). Fecal score increased in T calves during the last weeks on trial with no differences on GHS. Higher basophils content at the end of the trial (0.21% vs 0.16%; $P<0.05$) and a lower eosinophil percentage (0.05% vs 0.22%, $P<0.01$) on 8d of life were found in T group: skin test was not different on 8 and 28d of life. The administration of SMP in calves can benefits the microbial balance in such a stressful time as during the first month of life.

***Keywords**: calf, species-specific multistrain probiotic, E.coli, gut health*