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ANIMAL SCIENCE:

Challenges in Production and Sustainability

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ANIMAL SCIENCE:
CHALLENGES IN PRODUCTION AND SUSTAINABILITY

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Edited by
Éder Fernando Varela
Gabriela Regina Dias Lira
Juliana Varchacki Portes
Meire Luiza Wirth
Sandra Regina Souza Teixeira de Carvalho

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and

The Department of Animal Science and Rural Development
(*Departamento de Zootecnia e Desenvolvimento Rural*)
Universidade Federal de Santa Catarina
Florianópolis – UFSC – SC
zdr@contato.ufsc.br

Layout by
Sandra Regina Souza Teixeira de Carvalho (sandra.carvalho@ufsc.br)
Juliana Varchacki Portes (juh@zootecnista.com.br)

The authors are responsible for the grammatical and textual review of the manuscripts and abstracts.

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Letter from the Chair

Dear Participants

The Brazilian Society of Animal Science (SBZ) started in 1951 a mission to develop livestock in Brazil through new information and exchange of experiences among professionals in the area. In these 70 years, SBZ has done a great job in publishing the results of technical-scientific observations carried out in universities and research centers in Brazil.

Many advances in animal production were registered with the SBZ meetings and publications, and it is known that many were and will be the challenges faced by the Agricultural Sciences area in the coming years. Thus, the theme of the 56th Meeting is "Animal Science: the challenges of production and the sustainability of the planet", and intends to provide an environment for scientific and technical discussions and boost animal productivity in Brazil and, thus, meet increasingly demanding markets.

We also partnered with two other important events: Formuleite and the Symposium on Biometeorology, Ambience, and Animal Behavior and Welfare. Our target audience includes, besides researchers and academics, technical professionals and companies in the area.

In this material, you'll see all the abstracts submitted and approved by our team of collaborators, with the highlights of each research area.

I would like to send a big THANK YOU to the entire team of collaborators and also to all the participants. We are aware of everyone's difficulties in this difficult period that the world is facing. We had to make changes; our event could not take place in the beautiful Ilha da Magia (Florianópolis – SC), but we brought the best in a virtual platform.

Last but not least, I want to express my gratitude to all the sponsors and supporters who contributed to making this meeting a reality.

We now have a lot of work in the hope of better days.

Yours sincerely,

Sandra Carvalho
Chairman of the 56thAnnual Meeting of the Brazilian Society of Animal Science

Liver parameters of beef cattle intensively grazed and supplemented with non-antibiotic additives as a substitute for antibiotics

Dalton H. Pereira[1], Elismar dos Anjos[1], Anielen Galatto *[1], Adriano N. Roecker[1], Thiago A. Prado[2], Bruno C. e Pedreira[3]

[1]Universidade Federal do Mato Groso, Sinop/MT; [2]Fortuna Nutrição Animal, Nova Canaã do Norte/MT; [3]Embrapa Agrossilvipastoril, Sinop/MT.

*Graduation student - anielen_galatto@hotmail.com

The inclusion of high doses of concentrate in the diet of cattle promotes changes in metabolic activity, as well as in the organs. However, this high activity can lead to hepatic alterations, due to the characteristic of an organ of high activity in nutrient metabolism. The aim of this study was to evaluate the influence of non-antibiotic additives to replace antibiotics in the diet of cattle raised on intensive pasture on liver parameters. The experiment was conducted at Embrapa Agrossilvipastoril, in Sinop - Mato Grosso. Forty cattle of the Nelore breed, uncastrated, with mean age of 22 ± 2 months and mean initial body weight of 415 ± 5 kg, were randomly divided into four treatments: supplement containing non-ionophore additive (0.07 g kg DM^{-1} of virginiamycin) (VM); supplement containing yeast-based probiotic (3 g per 100 kg body weight) to replace virginiamycin (ADV); supplement containing 1.4 g kg DM^{-1} of tannin to replace virginiamycin (TN1.4); supplement containing 2.1 g kg DM^{-1} of tannin to replace virginiamycin (TN2.1). Blood samples were collected via tail vein puncture at the adaptation and at the end of the experiment, and all animals were sampled. The samples were centrifuged, aiming the separation of serum, for the analysis of blood parameters. At the end of the experiment all animals were slaughtered, and the liver weights of each animal were recorded. The means of the treatments were analyzed via PROC MEANS of SAS and the means were compared using the Tukey test (α = 0.10). There was no difference between the additives for liver weight in kg (P = 0.373) and carcass percentage (P = 0.801). Lactate concentrations were not influenced by the additives (P = 0.419). Serum concentrations for glutamic-oxalacetic transaminase (GOT) and glutamic-pyruvic transaminase (GPT) were higher in VM and TN 1.4 treatments (P < 0.10), with mean values of 52.0 U L^{-1} and 94.45 U L^{-1}, respectively. The enzymes GOT and GPT are markers of liver injury and can be found in both the cytoplasm and mitochondria of liver cells, where concentrations above 130 U L^{-1} for GOT and above 118 U L^{-1} for GPT indicate changes in liver tissue. From the evaluation of hepatic metabolic parameters and liver evaluation, no evidence was found to show liver injury, with enzyme concentrations being below the upper limit of ideal. Based on the evaluation of liver parameters of animals receiving high levels of supplementation we can conclude that non-antibiotic additives can be added to the diet of intensively grazed cattle, replacing virginiamycin.

Keywords: hepatic profile, levedura, tannin, virginiamycin

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