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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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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

Fertilizer effects on the residual forage mass of a mixed pasture in crop-livestock system

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Integrated systems have been considered an alternative to enhance grain and livestock production. The pasture establishment after cropping soybean is a common practice in Central Brazil but, currently, producers are using mixed pastures to improve forage production and soil characteristics in crop-livestock systems. Besides, fertilization during the livestock phase has been used to improve forage production, and also to increase grain yield defining a new approach, the system's fertilization. Our objective was to evaluate the fertilization effect on the *Sorghum bicolor* (L). Moench cv. BRS 810 + *Urochloa ruziziensis* mixed pasture on the residual herbage mass and soybean grain yield in Sinop, MT, Brazil. The forages were seeded after soybean harvest, on March 10, 2020, at the Embrapa Agrossilvipastoril, Sinop, MT, Brazil. The experimental design was a randomized complete block with three fertilization inputs and three replicates. The three treatments were 0 (control), 25, and 50 kg ha^{-1} of N and K in the form of urea + ammonium sulphate and potassium chloride, which was applied on April 2. The plots were harvested on April 20, May 18, and June 15 to simulate the grazing effect at 20-cm stubble height. On September 30, herbage mass was harvested using three quadrats (0.5 m^2) per plot, at soil level, to calculate residual herbage mass, which was desiccated (4 L ha^{-1} of glyphosate) on October 23, 2020. The soybean (BG4781, Brevant) was planted on November 07, when 88 kg of P_2O_5 was applied. On December 01, 68 kg of K surface-applied. The crop management practices (e.g.; herbicide, insecticide, and fungicide) were similar to all plots, and on March 09, 2021, the soybean was harvested (data not presented). The fertilization rate affects the residual forage mass (P=0.0087) of the *S. bicolor-U. ruziziensis* mixed pasture. The greatest residual forage mass was measured on the pasture that was fertilized with 50 kg ha^{-1} of fertilizer (4000 kg DM ha^{-1}). The input of 0 or 25 kg ha^{-1} of fertilizer presented a similar residual forage mass, averaging 2810 and 2910 kg DM ha^{-1}, respectively. We concluded that 25 kg ha^{-1} of fertilizer during the off-season was not capable to affect the residual forage mass left after three harvests of the mixed pastures. However, the input of 50 kg ha^{-1} of fertilizer contributed to enhancing residual forage mass, which is important to warrantee straw to the non-till cropping system.

Keywords: *Brachiaria*, fertilization rate, nitrogen, potassium, Sorghum

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