

PROCEEDINGS



ANIMAL SCIENCE:

Challenges in Production and Sustainability

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**ANIMAL SCIENCE:
CHALLENGES IN PRODUCTION AND
SUSTAINABILITY**

Proceedings of the 56th Annual Meeting of the Brazilian Society of Animal Science
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56ª Reunião da Sociedade Brasileira de Zootecnia

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VIRTUAL

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 56th Annual Meeting of the Brazilian Society of Animal Science

The effect of the harvesting frequency on the residual forage mass in mixed pastures

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The use of different forage species in a mixed pasture is recommended to improve forage mass and soil characteristics. However, the frequency of harvest (e.g.; grazing or hay) can increase the forage removal during the off-season, and affect the residual forage mass to the following crop, especially in the non-till crop-livestock systems. We aimed to assess the harvest frequency effect in a mixed pasture compounded by *Urochloa ruziziensis*, pigeon pea (*Cajanus cajan* 'Super N'); Sunflower (*Helianthus annuus*), and Buckwheat (*Fagopyrum esculentum*) on the residual forage mass at the Embrapa Agrossilvipastoril, in Sinop, MT, Brazil. The mixed were planted on March 10, 2020, after the soybean harvest. The experimental design was a randomized complete block design with three replicates. The treatments were four harvest frequencies. The harvesting frequencies were: Straw – no-harvest during the off-season; Lax - with one harvest (at 115 days after planting); Moderate - two harvests (80 and 115 days after planting); and Heavy - three harvests (45, 80, and 115 days after). The plots were harvested at 20-cm stubble height and there were not fertilized. On September 30, 2020, forage mass was harvested using three quadrats (0.5 m²) per plot, at soil level, to calculate residual forage mass, which was desiccated (4 L ha⁻¹ of glyphosate) on October 23, 2020. The soybean (BG4781, Brevant) was seeded on November 07, when 88 kg of P₂O₅ 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 showed). The residual forage mass was affected by the harvesting frequency (P=0.0296). The greatest residual forage mass was measured in the treatment where there was no harvesting (straw), on average 5625 kg DM ha⁻¹. On the other hand, lax, moderate and heavy treatments presented similar residual forage mass (on average, 3000 kg DM ha⁻¹). We concluded that although the residual forage mass was reduced when the off-season pastures were harvested, the number of harvest events did not affect the forage mass left on the field to assure the non-till cropping system. It is important to mention the soybean grain yield needs to be measured in the following crop season to understand the effect of the harvesting frequency during the off-season.

Keywords: *Brachiaria*, crop-livestock, non-till, cropping systems

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