

PROCEEDINGS



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## 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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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)

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**56ª Reunião da Sociedade Brasileira de Zootecnia**

**16 a 20 de Agosto de 2021**

**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

**Ensilability potential of commercial and experimental sorghum cultivars (*Sorghum bicolor*), produced in harvest in northern Mato Grosso.**

Maria Antonia Bortolucci da Rosa<sup>1</sup>, Juliana Maria Silva de Souza<sup>\*1</sup>, Janaine Aparecida Poli dos Santo<sup>2</sup>,  
Tainara de Freitas Macedo<sup>2</sup>, Dalton Henrique Pereira<sup>3</sup>, Flávio Dessaune Tardin<sup>4</sup>;

<sup>1</sup>Master student, UFMT/Sinop; <sup>2</sup>Graduation student, UFMT/Sinop; <sup>3</sup>UFMT, Sinop/MT, Brasil; <sup>4</sup>Embrapa Milho e Sorgo, Sinop/MT.

\* Master student in Animal Science – cavenaguijuliana@hotmail.com

The demand for sorghum cultivars of better quality and productivity stimulated the emergence of innumerable genotypes with specific characteristics of size, cycle, and aptitude, which have a marked influence on the nutritional value of the produced silage. Given this scenario, an experiment was carried out at Embrapa Agrossilvipastoril and Federal University of Mato Grosso, in Sinop/MT, to evaluate 15 different sorghum genotypes, focusing on plant characteristics that can influence the silage fermentation process. Thus, eight Embrapa experimental hybrids (foragers 15F30005 and 15F30006, saccharines CMSXS 5027, 5030, 5043 and 5045 and biomasses 2019B008 and CMSXS 7501 bmr) and seven commercial ones (BRS 658, BRS 659, Volumax, BRS 511, BRS Ponta Negra, BRS 716 and AGRI-002E), were planted on 11/20/19. The plots consisted of two rows of 5 m long, spaced 0.70 m apart. Similar cultural treatments were carried out for all plots. After harvesting and processing, dry matter content (DM), buffer capacity (BC), soluble carbohydrates (SC) were evaluated and based on them, the fermentation coefficient (FC) was calculated. After analysis of variance (ANOVA), the data of the genotypes were grouped and evaluated by the method proposed by Scott-Knott ( $P < 0.05$ ), showing a difference between the genotypes for all characteristics, demonstrating that the genetic variability between the materials can influence the ensilability characteristics of plants. By means test, four groups were formed for DM. The materials BRS 716, AGRI-002E, BRS 658 and 659 obtained the highest levels, with 29.77% and BRS Ponta Negra, BRS 511, CMSXS 5027 and CMSXS 5030 with the lowest, 20.47%. For BC, five groups of means were formed, where 2019B008 obtained the highest value and BRS 511 with the lowest, being 4.21 and 1.62 g lactic acid 100 g DM, respectively. For SC, three groups were formed, with BRS 511 and CMSXS 5030 with the highest average, 39.17%, and with the lowest BRS 716, AGRI-002E, Ponta Negra, Volumax, BRS 658 and 659 and a further 6 experimental ones, 20.36%. From this, the FC ( $FC = \% DM + 8 \times SC/BC$ ) was calculated, generating three groups of averages, where BRS 511 obtained the highest value, 195.06, and the smallest group, consisting of BRS Ponta Negra, BRS 658 and 659, Volumax, AGRI-002E, BRS 716 and 6 experimental, with 77.36. Based on the analyzes carried out, all genotypes are liable to be ensiled and produce silage with an appropriate fermentative pattern. Among them, the experimental material CMSXS 5030 and the commercial BRS 511, both saccharine, stood out in terms of low buffer capacity and high levels of soluble carbohydrates and fermentation coefficient.

**Keywords:** *Sorghum bicolor*, silage, ensilability, fermentation.

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