

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

BIOCHEMICAL BLOOD VARIABLES OF STARTING PIGS, UNDER HEAT STRESS, FEEDING DIETS WITH DIFFERENT CRUDE PROTEIN LEVELS

Stela Cássia de OLIVEIRA¹, Diovani PAIANO², Aleksandro Schafer da SILVA²; Tânia Mara Baptista dos SANTOS¹, Elis Regina de Moraes GARCIA¹, André Luiz Julien FERRAZ¹, Geraldine Nunes WENDT², Tiago Junior PASQUETTI^{1*}

*corresponding author: pasquettizoo@uems.br

¹Universidade Estadual de Mato Grosso do Sul, Aquidauana, Mato Grosso do Sul, Brasil

²Universidade do Estado de Santa Catarina, Chapecó, Santa Catarina, Brasil

Protein metabolism as well as the efficiency of amino acids (AA) utilization may be affected by increasing crude protein (CP) in the diets, especially when pigs are submitted to a heat stress conditions. This study was carried out to evaluate the biochemical blood variables of starting pigs, under heat stress conditions, feeding diets with different CP levels. The experiment assay was conducted at Santa Catarina State University – UDESC, and approved by Ethics Committee of UDESC (protocol number 01.81.14). Fifteen barrows (22.8±1.6 kg), were individually allotted in metabolism pens, in a completely randomized design with three treatments (15.5%, 18.3% and 21% of CP) and five replications. Pigs were raising in a semi-climatized facilities, with automatic convection heater system 3.600 watts (start at 28°C and stop at 29°C), to simulate a hot stress condition. Temperature and relative humidity were 29.1°C and 75.5%, respectively. The temperature was above the thermo-neutral zone (22 – 23°C). Blood urea analysis were performed using 10 mL of blood samples, collected by jugular venipuncture each five days (7:00 am, before feeding). Serum was obtained by centrifugation at 8.000 g for 10 minutes. Blood urea nitrogen (BUN), cholesterol, triglycerides, total proteins, globulin and albumin were evaluated. All data were submitted to a Student Newman Keuls Test. Blood urea nitrogen were different between treatments ($P < 0.05$), in which the higher value (29.90 mg dL⁻¹) was observed for pigs feeding diets with 21% of CP, followed by 18.3 and 15.5% of CP, with 17.30 and 6.65 mg dL⁻¹, respectively. The BUN is a good indicator of metabolic excretion of AA, since their amino group are converted to urea when AA are catabolized. Then, the CP reduction in the diets, from 21.3 to 15% was efficient to reduce PUN, which may indicate that pigs used efficiently the AA, when feeding diets with lower CP levels (15%). For cholesterol, the values were higher for 21 (64.04 mg dL⁻¹) and 18.3% (62.9 mg dL⁻¹) of CP, compared to the diet with 15.5% (51.34 mg dL⁻¹), which may be related with the ingredients present in the diets, as the soybean oil, associated with the CP levels. Triglycerides, total proteins, globulin and albumin were not affected ($P > 0.05$) by CP levels. Based on BUN, we conclude that starting pigs feeding diets with 15% of CP can use AA efficiently when the essential AA are supplied in the diets.

Keywords: amino acids, plasma urea nitrogen, swine

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