

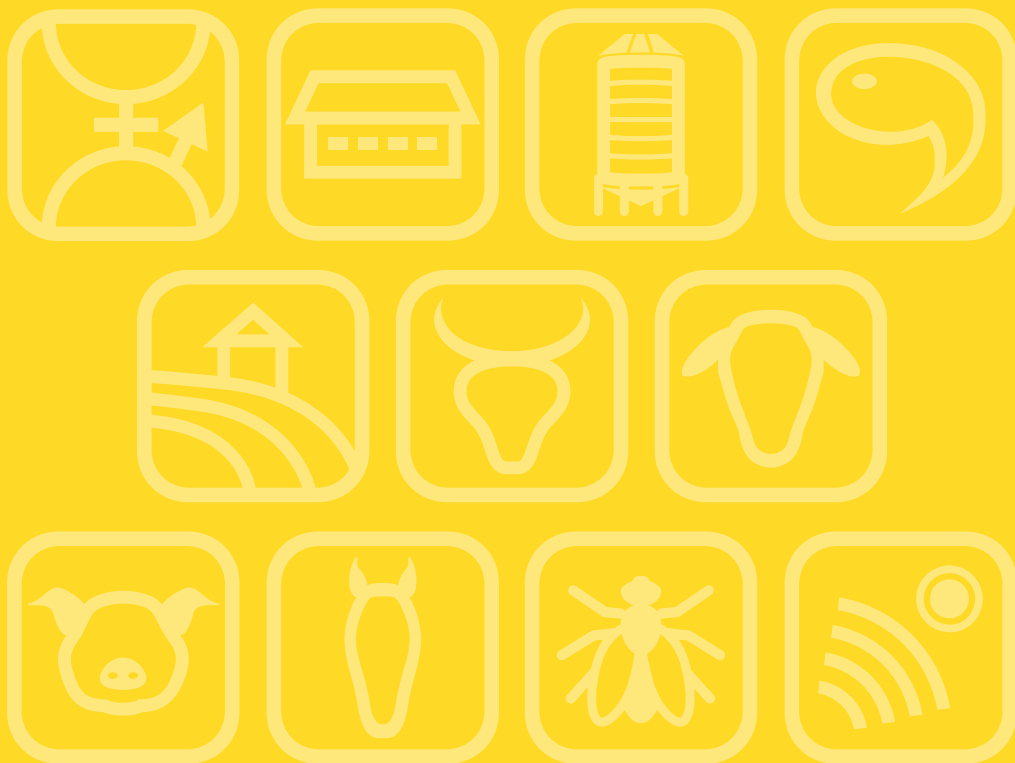
Inclusion of sainfoin in lamb concentrate on blood metabolites and oxidation status

C. Baila, M. Joy, I. Casasús, M. Blanco, J.R. Bertolín and S. Lobón

Centro de Investigación y Tecnología Agroalimentaria de Aragón (CITA)-IA2, Department of Animal Science, Avda. Montañana, 930, 50059 Zaragoza, Spain; cbaila@cita-aragon.es

Light lambs are usually fed with cereal-based concentrates during fattening. However, interest in the use of forages in animal diets has grown to increase the self-sufficiency and sustainability of farms. The aim of this study was to evaluate the effect of increasing amounts of sainfoin (*Onobrychis viciifolia*), a legume forage, in the fattening concentrate of light lambs on their blood metabolites and oxidation status. Twenty-six Rasa Aragonesa weaned male lambs (14.0 ± 0.49 kg; 30 ± 0.66 d) were divided in 3 groups depending on the inclusion of dry sainfoin in the concentrate: 0% of sainfoin (Control), 20% of sainfoin (20SF), and 40% of sainfoin (40SF). Blood samples were obtained once every two weeks (week 0, 2, 4, and 6) until slaughter (25.0 ± 0.78 kg; 70.6 ± 0.66 d). Plasma glucose, urea and non-esterified fatty acid concentrations were affected by the interaction between the diet and the week ($P < 0.05$), although concentrations were similar among treatments within each week. The 20SF and 40SF lambs decreased their urea, glucose and NEFAS blood concentration from week 0 to 2 ($P < 0.05$), whereas control lambs only shown a reduction of urea concentration during these weeks ($P < 0.001$). Regarding the blood antioxidant capacity, measured with ABTS (ethylbensothiazoline-6-sulfonic acid) method and polyphenol concentration, both were only affected by the week ($P < 0.05$). The blood antioxidant capacity increased from week 0 to 2 and from week 4 to 6 ($P < 0.05$) when following the ABTS method, while polyphenol concentration raised only from week 0 to 2 ($P < 0.001$). The concentration of malondialdehyde (MDA) was affected by the week ($P < 0.001$), tending to raise between week 2 and 4 ($P < 0.1$) and increasing from week 4 to 6 ($P < 0.001$), and was also affected by the diet with lower MDA values (lower blood oxidative stress) of 40SF group than Control group ($P < 0.05$) and a trend towards lower MDA values in 20SF compared to the Control group ($P < 0.10$). To conclude, the inclusion of sainfoin in the fattening concentrate for lambs did not affect the metabolic state of the animals; however, the lower oxidative stress in blood of sainfoin-fed lambs may be associated with an improvement in animal welfare.

Book of Abstracts of the 73rd Annual Meeting of the European Federation of Animal Science



Book of abstracts No. 28 (2022)

Porto, Portugal

5 – 9 September, 2022