

Small Ruminant 1

M136 Effects of condensed tannins from sainfoin on the milk fatty acid profile of ewes. C. Baila, S. Lobón, M. Blanco, I. Casasús*, J. Bertolin, and M. Joy, *Ctr Invest y Tecnol Agroal Aragon (CITA), IA2 (CITA-Universidad de Zaragoza), Zaragoza, Spain.*

There is an increased interest in using local fodder legumes to improve the self-sufficiency of feed for livestock. Sainfoin (*Onobrychis viciifolia*) is a typical high-quality crop of Mediterranean areas with a medium-high content of condensed tannins (CT), however their effects on milk composition are not well known. The aim of the study was to evaluate the effect of CT from fresh sainfoin on milk production, chemical composition, and fatty acids during 4 wk of lactation. Twenty pairs dam-lamb were individually fed fresh sainfoin ad libitum plus 200 g/d of barley. The distribution of pairs dam-lamb were done according to ewe's BW (60.7 ± 6.15 kg BW) and BCS (3.3 ± 0.57), lambing date ($06/04/2019 \pm 0.95$) and lamb weight at birth (4.1 ± 0.64 kg BW). Half of the ewes were daily orally dosed 100 g of PEG 4000/200 mL water per ewe as a tannin-binding agent (SF+PEG) and the other half received only water (SF). Once a week, ewes were milked and samples of sainfoin and milk were obtained and analyzed for chemical composition and individual fatty acids (FAs). The total saturated FA (SFA), monounsaturated FA (MUFA), polyunsaturated

FA (PUFA), PUFA n-3 and PUFA n-6 were calculated. The sums and the major FA were analyzed using mixed models, with week of lactation as fixed and ewe as random effects using the SAS statistical software (SAS v.9.3). Milk yield was affected by the interaction between treatment and week of lactation ($P < 0.001$). The SF ewes peaked at wk 2 and SF+PEG ewes peaked at wk 4. The chemical composition of milk was only affected by the week of lactation ($P < 0.001$). The contents of FA in fresh sainfoin were similar through lactation, except for the PUFA, which had the greatest content on the first week ($P < 0.05$). The SF had greater C18:0 (13.6 ± 0.36 vs. 11.8 ± 0.37), C18:2 n-6 (2.10 ± 0.05 vs. 1.70 ± 0.05), C18:3 n-3 (1.75 ± 0.06 vs. 1.22 ± 0.06), C20:5 n-3 (0.11 ± 0.005 vs. 0.09 ± 0.005) and PUFA (6.49 ± 0.104 vs. 5.94 ± 0.109) and lower C16:0 (22.4 ± 0.25 vs. 23.4 ± 0.26), conjugated linoleic acid (0.70 ± 0.028 vs. 0.88 ± 0.031) and n-6:n-3 ratio (1.11 ± 0.038 vs. 1.34 ± 0.04) than SF+PEG. The differences between treatments smoothed as the lactation advanced, mainly in CLA and n-6/n-3. In conclusion, the CT affected the milk FA profile especially in the first week of lactation and their effect decreased along lactation.

Key Words: polyethylene glycol (PEG), milk fatty acid evolution, suckling period