

Effect of the source of magnesium fed during pregnancy and lactation on performance of sheep*M. Blanco¹, P. Amezketa², M. Arandigoyen² and M. Joy¹**¹CITA de Aragon, Avda. Montañana 930. 50059-Zaragoza Spain ²Magnesitas Navarras S.A. Av. Roncesvalles s/n. 31630 Zubiri, Spain. mjoy@aragon.es*

The aim of this study was to assess the effect of the inclusion of different source of magnesium (Mg) in concentrate fed during pregnancy and lactation on the performance of Rasa Aragonesa ewes (n=116) and their lambs. The concentrates fed to the ewes were commercial concentrates for pregnancy (88.5% DM, 18.0% CP, 30.7% FND and 13.4% FAD) and lactation (88.8% DM, 19.5% CP, 32.5% FND and 13.3% FAD). Magnesium was incorporated in the concentrate as caustic MgO (C), caustic semicalcined MgO and MgCO₃ (Mg2), caustic semicalcined MgO and calcined dolomite (Mg3) or caustic semicalcined MgO and Mg(OH)₂ (Mg4). At mating, ewes were randomly distributed in four treatments. During pregnancy, the source of Mg had no effect on live weight (LW; 66 kg) and body condition score (BCS; 3.7), however, affected sodium (Na), potassium (K), calcium (Ca) and Mg concentrations in plasma. During lactation, the source of Mg affected LW (P<0.001) and BCS (P<0.05). Ewes of Mg2 treatment lost 4 kg LW, Mg3 and Mg4 ewes lost 2 kg and C ewes maintained LW. After the 45 days of lactation, Mg3 and Mg4 ewes had greater BCS than Mg2 and C ewes (3.2, 3.2, 2.9 and 2.8, respectively; P<0.001). Treatment affected Na, K, Ca and P concentrations in plasma. Regarding lambing, the source of Mg did not affect birth rate (111 lambings), the number of lambs per lambing (160 lambs, 58.6% simple and 41.4% twins), lamb birth weight (3.6 kg) or mortality (4.4%). However, the source of Mg affected the lambs' weight gains during lactation as Mg4 lambs had greater weight gains than C, Mg2 and Mg3 lambs (259, 227, 220 and 222 g/d, respectively; P<0.05). Consequently, Mg4 lambs were heavier at weaning than C, Mg2 and Mg3 lambs (14.5, 13.1, 13.0 and 12.6 kg, respectively; P<0.05). In conclusion, the source of Mg in the concentrate had relevant effects only in lactation, with greater LW and BCS of ewes and daily growth lambs in Mg4 treatment.