

**Effect of the vitamin E supplementation prior to slaughter on plasma metabolites in light lambs***L. Gonzalez-Calvo<sup>1</sup>, M. Blanco<sup>1</sup>, F. Molino<sup>1</sup>, J.H. Calvo<sup>2</sup> and M. Joy<sup>1</sup>**<sup>1</sup>CITA de Aragon, Avda. Montañana 930 50059-Zaragoza, Spain. <sup>2</sup>ARAID Aragon, Avda Montañana, 930, 50059-Zaragoza, Spain. mjoy@aragon.es*

Dietary vitamin E (VE) supplementation has been recommended to increase meat shelf life. Alpha-tocopherol, the most potent form of vitamin E, is a major free-radical-trapping antioxidant in plasma and tissues that attenuates the oxidative stress and decreases the formation of low-density lipoproteins (LDLs). However, it is expensive which requires accurate feeding to reduce the period of  $\alpha$ -tocopherol supplementation. Grazing is a cheap option to increase  $\alpha$ -tocopherol content in the muscle and reduce the oxidation processes. Single reared male lambs ( $n=54$ ) of Rasa Aragonesa breed were weaned at 45 days of age and fed a basal concentrate (C; 30 mg  $\alpha$ -tocopheryl acetate/kg of concentrate) and a supplemented concentrate (500 mg  $\alpha$ -tocopheryl acetate/kg of basal concentrate) for 0 (C), 10 (VE10d), 20 (VE20d) and 30 (VE30d) days before slaughter ( $23\pm 1.4$  kg;  $75\pm 1.3$  days). Additionally, 8 unweaned lambs were continuously stocked on alfalfa pasture supplemented with the basal concentrate (ALF). Jugular blood samples were collected at before slaughter into EDTA vacuum tubes to determine  $\alpha$ -tocopherol, cholesterol, high density lipoproteins (HDL), LDL and triglycerides (TG) concentrations. Plasmatic  $\alpha$ -tocopherol concentration increased with VE supplementation ( $P<0.05$ ), regardless the length of the feeding period. ALF lambs had intermediate plasmatic  $\alpha$ -tocopherol concentration between C and VE supplemented lambs. Cholesterol, HDL and LDL were lower in VE30d than in C lambs ( $P<0.01$ ). ALF lambs had greater cholesterol, HDL, LDL and TG concentrations than the concentrate-fed lambs, because lambs suckled milk. In summary, VE supplementation increased  $\alpha$ -tocopherol plasmatic concentration but 30 days were needed to decrease plasmatic LDL, HDL and cholesterol concentrations. In unweaned light lambs, grazing increased  $\alpha$ -tocopherol concentration in plasma, but milk intake had a greater effect than forage intake or VE supplementation on plasmatic metabolites.