Dietary Antioxidants in Lactating Ewes: Effect on *trans*-18:1 Profile of Suckling Lamb Meat

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The addition of oils rich in polyunsaturated fatty acids (PUFA) in ewes diet is a common strategy to improve milk fatty acid (FA) profile and it could also enhance their suckling lamb meat [1]. Vitamin E is often incorporated into these rations to prevent PUFA oxidation, but it may also influence ruminal biohydrogenation pathways and promote the accumulation of specific intermediates in ruminant fats [2]. The objective of this research was to evaluate whether the supplementation with antioxidants (both natural and artificial) of ovine diet could affect intramuscular *trans*-18:1 FA pattern of suckling lambs.

For that purpose, 48 lactating Churra ewes were fed a total mixed ration (TMR, 40/60 forage/concentrate ratio) containing 2.7% of linseed oil and divided into 4 treatments (12 ewes per treatment). Experimental diets consisted of a Control (without antioxidants), control diet supplemented with 500 mg of Vitamin E per Kg TMR (Vit-E) and control diet supplemented with 5% (GP-5) or 10% (GP-10) of grape pomace from red wine production. Lambs were nourished exclusively by suckling and FA composition of lamb intramuscular fat was determined by Gas Chromatography. *Trans*-18:1 isomers contents were 3.3% (Control), 3.7% (Vit-E and GP-5) and 3.9% (GP-10) of total FA and no significant differences were observed between treatments ($P>0.05$). The major *trans*-isomer was vaccenic acid (*trans*-11 C18:1) accounting for more than 50% of total *trans*-FA whereas *trans*-10 18:1 levels remained low in all experimental diets. In addition, no significant differences were detected in any of the individual *trans*-18:1 FA ($P>0.05$) which would indicate the absence of a shift on ruminal biohidrogenation pathways. This research also reveal that supplementation of ewes diet with antioxidants would not exert a negative impact on the *trans*-FA pattern of their lambs meat.

[1] Manso, T. et al. Animal, 2011, 5:1659-1667. [2] Juárez, M. et al. Canadian Journal of Animal Science, 2010, 90:9-12. [3]