

Effects of pasture supplemented with *Aloe Vera* on lamb meat production: preliminary results

Prestigiacomio, S.; Pippi, M.; Ponte, M.; Lala, N.; Dinolfo, L.; Di Miceli, G.; Bonanno, A. & Di Grigoli, A.

The sheep meat supply chain in Italy is still predominantly oriented towards the seasonal production of milk-fed lambs slaughtered at about 30 days of age, with live weight lower than 13 kg, tender meat, low fat content, and a delicate flavour. Improving production and quality is possible by adopting models that extend the slaughter age and allow for obtaining heavier, more muscular carcasses. The adequacy of forage systems and the addition of natural supplements to the diet can enhance the quality and sustainability of sheep meat production, in line with current consumption trends. *Aloe vera* (*Aloe vera barbadensis* Miller), with over 200 natural compounds, is known for its anti-inflammatory, antibacterial, and antioxidant properties. Although its anthelmintic properties and the effects on ruminal fermentation, blood parameters, and milk production in ruminants have already been highlighted, its nutritional role in sheep meat production is still underexplored. The aim of this study was to introduce *Aloe vera* in the diet of lambs to evaluate the quantitative and qualitative responses of meat production. The study involved 32 lambs about 90 days old, divided into four homogeneous groups, fed with two different dietary regimes. Two groups grazed freely, while the other two groups were confined indoors and fed with hay for the entire experimental period. Only one grazing group and one confined group received a daily supplement of fresh aloe provided ad libitum, whereas all animals received a concentrate integration (900 g/day as feed per lamb). Lambs feed intake were monitored until slaughter, which took place at 120 days of age. During grazing, forage availability (using exclusion cages) and floristic composition were monitored. At slaughtering, the weights of carcasses, perirenal and pelvic fat, hind leg, and longissimus dorsi (LD) muscle were recorded, as well as pH and tenderness of the LD muscle; also the color of perirenal fat and LD muscle section was measured according to the CIELAB system. The thawing and cooking losses of LD meat were also measured. The cooked LD meat was evaluated through a sensory analysis session with 12 panellists. Preliminary results indicate that there was no effect on weight gain or carcass yield, but significant differences emerged in terms of percentages of muscle and fat in the hind leg, redness (a^*) and yellowness (b^*) values of LD muscle and fat, and the cooking weight losses. As for the sensory analysis, significant differences due to grazing emerged for tenderness, chewiness, and chew residues. These preliminary results will be integrated with data of chemical analysis of aloe, chemical characterization of meat, and the results in terms of plasma biomarkers to assess the lambs' oxidative and metabolic status, that are in progress.