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[← Go back](#)

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Effect of garlic inclusion on growth and feed conversion in Merino lambs

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The search for sustainable nutritional strategies in livestock production has promoted the use of agricultural by-products in animal feed. Garlic waste, derived from garlic cultivation, was used in this study due to its recognised antimicrobial, antioxidant and immunomodulatory properties, positioning it as a sustainable alternative for animal nutrition. The aim of this study was to evaluate the effect of including 4% garlic in the diet of Merino lambs on growth performance and feed efficiency. The trial was carried out at the CICYTEX experimental farm using 30 Merino lambs, divided into two groups of 15: a control group with no garlic inclusion and an experimental group receiving 4% garlic in the diet. Both diets were formulated to be isoproteic and isoenergetic. Lambs were weighed weekly and individual feed intakes were recorded daily. Parameters evaluated included weight gain, average daily gain (ADG), feed intake and feed conversion ratio (FCR). Statistical analyses were performed using SAS® to compare differences between groups, with a significance level of $P < 0.05$. Lambs fed the garlic-supplemented diet showed significantly higher weight gain ($p = 0.023$) and ADG ($p = 0.023$), with values 7.79% higher than the control group. Although no significant differences were found in feed intake ($p = 0.472$) or FCR ($p = 0.419$), a trend towards improved feed efficiency was observed. The beneficial effects of garlic on lamb growth may be attributed to its influence on the gut microbiota, potentially improving digestion and nutrient absorption. In addition, no rejection of the garlic-supplemented diet was observed, indicating good palatability and regular intake. These results suggest that the inclusion of 4% garlic in the diet of Merino lambs can improve growth performance without negatively affecting feed efficiency. This study highlights the potential of garlic by-products as a natural and sustainable feed additive in sheep production, supporting more environmentally friendly livestock systems.

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