

RESEARCH ARTICLE

Response of Probiotics and Yeast Added in Different Doses to Rations of Anatolian Merino Lambs on Fattening Performance, Meat Quality, Duodenum and Rumen Histology ^[1]

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Abstract

This study investigated the effects of dietary probiotics (*Lactobacillus reuteri* E81 [LRE], *Lactobacillus rhamnosus* GG [LRG]), yeast (*Saccharomyces cerevisiae* S81 [SCS]), and their combined supplementation on fattening performance (BW, DWG, FI, and FCR), meat quality, and rumen and duodenum histology in lambs. The study material comprised ninety 2.5-month-old Anatolian Merino lambs, and the trial was conducted for 70 days. Nine trial groups, each composed of 10 animals, were established. This study demonstrated that, when compared to the control group, the best fattening performance was achieved in the lambs that received 600 ppm of dietary LRE. Neither visceral organ weights nor rumen and duodenum histology was affected in the groups that received the tested feed supplements. Of the meat colour parameters investigated, the L* value was observed to have increased in the groups that were given feed supplements, excluding Groups LRE-600 and SCS-300. It was determined that the probiotic supplements had no effect on the a* and b* colour parameters, but affected the meat pH value. In conclusion, the assessment of the effects of different doses of dietary probiotics, yeast, and probiotic-yeast combinations on performance parameters, visceral organ weights, and meat quality in Anatolian Merino lambs showed that the best results were achieved in the group that received 600 ppm of LRE alone.

Keywords: Probiotic, Yeast supplementation, Anatolian Merino lamb performance, Feed additive, Meat quality, Histology

Anadolu Merinos Kuzularının Rasyonlarına Farklı Dozlarda İlave Edilen Probiyotiklerin ve Mayanın Besi Performansı, Et Kalitesi, Rumen ve Duodenum Üzerine Yanıtı

Öz

Yapılan çalışmada, kuzu rasyonlarına probiyotik (*Lactobacillus reuteri* E81 [LRE], *Lactobacillus rhamnosus* GG [LRG]), maya (*Saccharomyces cerevisiae* S81 [SCS]) ve karışımlarının ilavesinin besi performansı (CA, GCAA, Yem Tüketimi ve YYO) et kalitesi, rumen ve duodenum histolojisi üzerine etkisi araştırılmıştır. Araştırmada 2.5 aylık 90 adet Anadolu Merinosu koyun kullanılmış, çalışma 70 gün sürmüştür. Deneme her grupta 10'ar hayvan olacak şekilde 9 farklı gruptan (Kontrol, LE-300, LE-600, LR-300, LR-600, SC-300, SC-600, MİX-300 ve MİX-600) oluştu. Araştırma sonunda besi performansı üzerine kontrol grubuna kıyasla en iyi sonuçlar *L. reuteri* E81 600 ppm katkılı grupta elde edilmiştir. İç organ ağırlığı ve duodenum ile rumen histolojisi üzerine katkılı grupların etkisi olmazken, et renk parametreleri üzerine kontrol grubuna kıyasla L* parametresinde LRE 600 ve SCS 300 dışındaki gruplarda artış gözlenmiştir. Probiyotik uygulamasının, a* ve b* renk parametreleri üzerine etkisi olmazken, et pH değeri üzerinde oldukça etkili olduğu tespit edilmiştir. Sonuç olarak kuzu rasyonlarına ilave edilen probiyotik, maya ve karışımlarının besi performansı (CA, GCAA ve YYO), iç organ ağırlıkları ve et kalitesi üzerine en iyi sonuçlar *L. reuteri* E81 600 ppm gruplarda elde edilmiştir.

Anahtar sözcükler: Probiyotik, Maya takviyesi, Anadolu Merinos kuzu performansı, Yem katkı maddesi, Et kalitesi, Histoloji

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