

THE EFFECTS OF ROSEMARY OIL AS FEED ADDITIVE ON CALVES (0-2 MONTHS OLD)

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KEY WORDS

- ✓ Calves
- ✓ Feed Additive
- ✓ Performance
- ✓ Rosemary
- ✓ *Rosmarinus officinalis*

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THESIS ABSTRACT

The aim of this study was to investigate the effects of *Rosmarinus officinalis* essential oil (REO) supplementation on performance, rumen parameters, fecal parameters and blood metabolites. In the study 42 holstein calves were divided into four similar groups according to body weight and sex. Calves were fed with milk replacer, calf starter and alfa alfa hay. REO was given orally to the calves with milk replacer daily at doses of 0 (CON), 500 mg/d (REO1), 1000 mg/d (REO2) and 2000 mg/d (REO3). Feed intake was determined daily. Calves were weighed on days 3, 28 and 56. Blood samples were taken on days 28 and 56. Fecal samples and rumen fluids were taken on day 56. At the end of the study total body weight gains were respectively 19.33 kg (CON); 25.55 kg (REO1); 25.27 kg (REO2) and 22.60 kg (REO3) ($P<0.05$). REO supplementation was increased DMI, CSI and feed efficiency ($P<0.05$). REO supplementation had no effects on rumen pH and fecal parameters. Ruminal ammonia-N concentration was higher for calves fed REO1 than REO3 ($P<0.05$). Total volatile acids concentration was higher for calves fed REO1 than CON and REO3 ($P<0.05$). On day 56, total cholesterol was lowest in groups REO2 and REO3 ($P<0.05$). Supplementation of REO was increased IgG, ghrelin, BHBA and glucose levels ($P<0.05$). It was concluded that the addition of different amounts of rosemary essential oil can positively change body weight gain, dry matter intake, feed intake, feed efficiency, rumen fermentation, immunoglobulin G and ghrelin levels in calves.

APPLICATION AREAS OF THE THESIS RESULTS

Feed Additive Companies
Dairy Farm Calf Units
Herbal Oil Companies

ACADEMIC ACTIVITIES

Biyik, F., Biricik, H., Urkmez, E., Kara, C., Cetin, I., & Udum, D. (2023). Effects of rosemary essential oil as a feed additive on performance, rumen fermentation, and blood parameters in preweaning Holstein calves. *Journal of the Hellenic Veterinary Medical Society*, 74(3), 6191-6199.
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