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Influence of Dietary Inclusion of Butyric Acids, Calcium Formate, Organic Acids and Its Salts on Rabbits Productive Performance, Carcass Traits and Meat Quality

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Abstract : Animal nutritionists and scientists have searched for alternative measures to improve the production. One of such alternative is use of organic acids as feed additive in animal nutrition. The study was conducted to investigate the impact of butyric acids, calcium formate, organic acids, and its salts (BCOS) additives on rabbit’s productive performance, carcass traits and meat quality. The study was conducted with 14 Californian breed rabbits. The rabbits were assigned to two treatment groups (seven rabbits per each treatment group). The dietary treatments were 1) control diet, 2) diet supplemented with a mixture BCOS - 2 kg/t of feed. Growth performance characteristics (body weight, daily weight gain, daily feed intake, feed conversion ratio, mortality) were evaluated. Rabbits were slaughtered; carcass characteristics and meat quality were evaluated. Samples loin and hind leg meat were analysed to determine carcass characteristics, pH and colour measurements, cholesterol, and malonyldialdehyde (MDA) content in loin and hind leg meat. Differences between treatments were significant for body weight (1.30 vs. 1.36 kg; P<0.05), daily weight gain (16.60 vs. 17.85 g; P<0.05), and daily feed intake (78.25 vs. 80.58 g; P<0.05) for control and experimental group respectively for the entire experimental period (from 28–77 days old). No significant differences were found in feed conversion ratio and mortality. The feed additives insertion in the diets did not significantly influence the carcass yield or the proportions of the various carcass parts and organs. Differences between treatments were significant for pH value after 48h in loin (5.86 vs. 5.74; P<0.05), hind leg meat (6.62 vs. 6.65; P<0.05), more intense colour b* of loin (5.57 vs. 6.06; P<0.05), less intense colour a* (14.99 vs. 13.15; P<0.05) in hind leg meat. Cholesterol content in hind leg meat decreased by 17.67 mg/100g compared to control group (P<0.05). After storage for three months, MDA concentration decreased in loin and hind leg meat by 0.3 μmol/kg and 0.26 μmol/kg respectively compared to that of the control group (P<0.05). The results of this study suggest that BCOS could potentially be used in rabbit nutrition with consequent benefits on the rabbits’ productivity and nutritional quality of rabbit meat for consumers.

Keywords : butyric acids, Ca formate, meat quality, organic acids salts, rabbits, productivity
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