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Natural Bioactive Mixture Composed of Lemon, Onion and Garlic Juice for Feeding Rabbits

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Abstract: Forty five growing rabbits aged 5 weeks (564±5.81 g) used in a feeding trial for period lasted 56 days. Experimental rabbits randomly allotted into 5 equal groups to established the impact of adding natural bioactive mixture composed of (juice of lemon, onion and garlic) (LOG) at portions (1.00: 1.00: 0.125/ liter clean water), respectively, to rabbit rations on their performance, nutrient digestibility coefficients and economic evaluation. The 1st group rabbits expressed as (control) and received basal ration while rabbits in 2nd, 3rd, 4th and 5th groups were received the basal ration supplemented with mixture juice of (LOG) at levels (5, 10, 15 and 20 ml/ kg ration). The percentages of crude protein ranged from 18.11% to 18.33%, while digestible energy ranged from 2512 to 2539 (kcal/ kg DM) among five tested rations. Adding natural bioactive mixture juice (LOG) at different levels significantly improved (P<0.05) nutrient digestibility (except CP, cellulose and TDN value) in comparison with the control one. However, there were no significant effect (P>0.05) between different levels of supplementation. The best nutrient digestibility (except DM and EE) and DCP were observed with adding 15 ml LOG/ kg ration (R_4). Dietary treatments had no significant effect on DM intake. DM intake ranged from 106 to 112 g/head/day. Rabbits fed 5 ml LOG/ kg DM containing ration recorded the highest DM intake. Treatments had no significant effect (P>0.05) on crude protein, digestible crude protein, gross energy and digestible energy intakes. However adding 10 ml LOG/kg ration (R_3) significantly increased total digestible nutrient intake in comparison with the control one (R_1). The present results showed that average daily gain was improved by 20%, 29%, 36.1% and 19.3% for (R_2, R_3, R_4 and R_5, respectively) in comparison with the control group (R_1). On the other hand, feed conversion improved (P<0.05) in comparison with the control one. Inclusion LOG at different levels increased both net revenue and relative economic efficiency compared to control one. Net revenue was improved by 176%, 278%, 343% and 178% for rabbits received 5, 10, 15 and 20 ml LOG/ kg feed, respectively compared to the control group. While, relative economic efficiency was improved by 150%, 233%, 300% and 150% more than the control that assuming that equal 100%. It could be indicated that inclusion natural bioactive juice LOG in rabbit rations at level 15 ml LOG/ kg feed causes the best results in terms of growth performance with a positive effect on digestion coefficients and realize high net revenue.

Keywords: Bioactive mixture, rabbits, performance**,** nutrient digestibility, nutritive values, economic evaluation.