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Incorporation of dried goat rumen contents in layer diets improves egg yolk colour and acceptability of eggs

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Abstract

The use of dried goat rumen content (DGRC) as a partial replacement for fish meal in layer diets was investigated. A total of 90 H&N Brown Nick layer chickens were offered diets in which DGRC were incorporated at 0, 5 and 10% levels. Iso-caloric and nitrogenous diets were formulated to meet the recommended nutritional requirements for laying hens. Experimental birds were assigned to 9 cages (10 birds/cage) and experimental diets offered in a completely randomized design (CRD) with three replications. Data was collected on egg production and sensory characteristics of the eggs, and a partial budget analysis was undertaken. Diet significantly ($P<0.05$) affected average daily feed intake (ADFI) and feed conversion ratio (FCR). There was an increase in ADFI and FCR with increasing levels of DGRC in the diets. The results showed that, though there was a gradual decrease in laying percentage with increase of DGRC in the diets, laying percentage did not differ in layers fed on 0 and 5% DGRC diets ($P>0.05$). Eggs from layers offered 10% DGRC were more acceptable than those of layers fed on 0 and 5% diets. A significant effect ($P<0.05$) of treatments on yolk colour was observed. Eggs from 10% DGRC diets had more deep yellow yolks than eggs from 0 and 5% diets. It was concluded that use of DGRC in layer diets improved yolk colour, acceptability of the eggs and marginal rate of return (MRR).

Keywords

Consumer preference, Digestibility, Egg production, Feed conversion ratio, Growth