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## The Effects of Tagasaste (*Chymancytisus palmensis*) Leaf Meal Supplementation on Feed Intake, Growth Performance and Carcass Characteristics of Rhode Island Red Chicks

AJEBU NURFETA<sup>1</sup>, ABEBE BERECHA<sup>2</sup>, ABERRA MELESSE<sup>3,1</sup>

<sup>1</sup>Hawassa University, College of Agriculture, School of Animal and Range Sciences, Ethiopia

<sup>2</sup>Office of Agriculture and Rural Development, Limu Kosa Agriculture Office, Ethiopia

<sup>3</sup>University of Hohenheim, Inst. of Animal Nutrition, Germany

### Abstract

The effects of feeding varying levels of tagasaste leaf meal on performance and carcass characteristics of Rhode Island Red chicks were evaluated. Tagasaste was introduced to Ethiopia in 1984 by Minister of Agriculture from Western Australia. For this experiment, fresh tagasaste leaves were collected from Holetta Agricultural Research Institute of Ethiopia and sun-dried. One hundred sixty dual-purpose Rhode Island Red chicks with an average initial weight of  $65.5 \pm 8.9$  g were allocated to 16 pens, with ten chicks each in a completely randomized design. Four isonitrogenous and isocaloric diets were formulated to contain tagasaste leaf meal at the rate of 0% (T1), 5% (T2), 10% (T3) and 15% (T4) of the total diet dry matter (DM). At the beginning of the trial, eight chicks were selected and slaughtered for chemical analyses to determine nutrient retention. At the end of the trial, a male and a female from each replicate were slaughtered for chemical analysis and carcass trait measurement. The average daily DM intake for T4 ( $48.9 \text{ g} \pm 1.03$ ) was higher than that of T1 ( $45.9 \text{ g} \pm 1.04$ ). The highest ( $p < 0.05$ ) ash ( $11.4 \text{ g} \pm 0.15$ , calcium ( $1.03 \text{ g} \pm 0.01$ ) and crude fiber ( $4.57 \text{ g} \pm 0.09$ ) intake was observed in chicks fed T4 diets. The average crude protein intake was higher ( $p < 0.05$ ) in supplemented chicks compared to the non-supplemented one ( $8.13 \text{ g}$  vs.  $7.55 \text{ g}$ ). The metabolisable energy intake was similar ( $p > 0.05$ ) among treatment groups. The protein, energy and calcium retention decreased ( $p < 0.05$ ) as the level of tagasaste leaf meal increased in the diet. The average daily gain was highest ( $6.22 \text{ g} \pm 0.23$ ;  $p < 0.05$ ) for T1 diet but it was similar ( $5.3 \pm 0.26$ ;  $p > 0.05$ ) among other treatment groups. The slaughter revealed that drumstick, thigh, back, breast and carcass weights were highest ( $p < 0.05$ ) for T1 and lowest for other treatments. The dressing percentage was similar ( $p > 0.05$ ) across treatment diets ranging from  $58.0 \text{ g} \pm 1.03$  in T2 to  $60.5 \text{ g} \pm 1.05$  in T3. It is concluded that tagasaste leaf meal could be considered as a good source of both protein and energy for smallholder farmers where other conventional supplements are not available.

**Keywords:** Carcass characteristics, growth performance, Rhode Island Red chicks, Tagasaste leaf meal