

# Effects of dietary crude protein and metabolizable energy levels on the growth performance of White Roman Geese between 4 and 8 weeks of age <sup>(1)</sup>

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## Abstract

The purpose of this study was to evaluate the effects of dietary crude protein (CP) and metabolizable energy (ME) levels on growth of White Roman geese from 4 to 8 weeks of age (WOA). Experiment was a 2 × 3 factorial arrangement with two CP levels (13 and 15%) and three ME levels (2, 400, 2, 700 and 3,000 kcal/kg). Results showed that there was no difference on feed intake or BW gain for the geese fed either the 13 or 15% crude protein diets. The feed conversion ratio (FCR) of geese providing the 13% CP diet was significantly ( $P < 0.05$ ) better than that giving the 15% CP diet. Calculating the protein intake of geese, a 38.2 g/goose/day protein intake was sufficient for BW gain of geese from 4 to 8 WOA. The decrease of dietary ME significantly ( $P < 0.01$ ) increased the feed intake and BW gain for geese fed 13% CP diet from 4 to 8 WOA. The FCR was improved by increasing dietary ME. In conclusion, the provision of 13% crude protein with 2,700 kcal/kg ME diet was sufficient for the geese growth from 4 to 8 WOA.

Key words: Goose, Crude protein, Metabolizable energy.

## Introduction

White Roman goose is the most popular domestic goose in Taiwan (more than 95% of the market). Concerning goose meat production, geese are sold at 12 weeks of age (WOA) and slaughtered between 13 and 15 WOA. From 80 to 90% of marketable body weight of geese can be achieved at 8 WOA. In the UK, geese are marketed at 9 or 16 WOA when they have the first or second set of feathers, or when they are in the complement moult stage after 20 WOA (Stevenson, 1989). In two review papers, the CP requirement of domestic geese was found to be from 140 to 200 g/kg during growth period, (Saleyev, 1975; Allen, 1983). Allen (1983) suggested that dietary CP contents should be 160 and 140 g/kg for the periods from 5 to 6 and 7 to 9 WOA, respectively. Saleyev (1975) recommended that the dietary CP content should be 180 g/kg from 4 to 9 WOA. The higher CP concentration diet from 180 to 220 g/kg had no advantage in BW gain of Embden geese (Summer *et al.*, 1987).

The metabolizable energy (ME) content should be 2,916 kcal/kg from 4 to 9 WOA (Saleyev 1975). The range of grower diets ME concentration from 2,629 to 3,107 kcal/kg had no significant differences in the weight gain of Italian Legarth geese (Stevenson, 1985). A 15% CP and 2,900 ME kcal/kg diet was recommended for growing geese after 4 WOA (NRC, 1994). These studies show that the choice of dietary CP and energy had a broad range from 14 to 22% CP and from 2,629 to 3,170 ME kcal/kg. This implies that a low CP or ME diet may be useful for domestic White Roman geese.

In general, giving the same diet to domestic geese from 4 to 12 WOA is recommended. The BW of White Roman geese can achieve about from 80 to 90% marketable body weight at 8 WOA. This implies that the nutrition requirements of geese before and after 8 OWA are different. This study evaluates the effects of different CP and ME levels on the growth performance of White Roman geese from 4 to 8 WOA.

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