USE OF SWEET LUPIN IN POULTRY RATIONS

By
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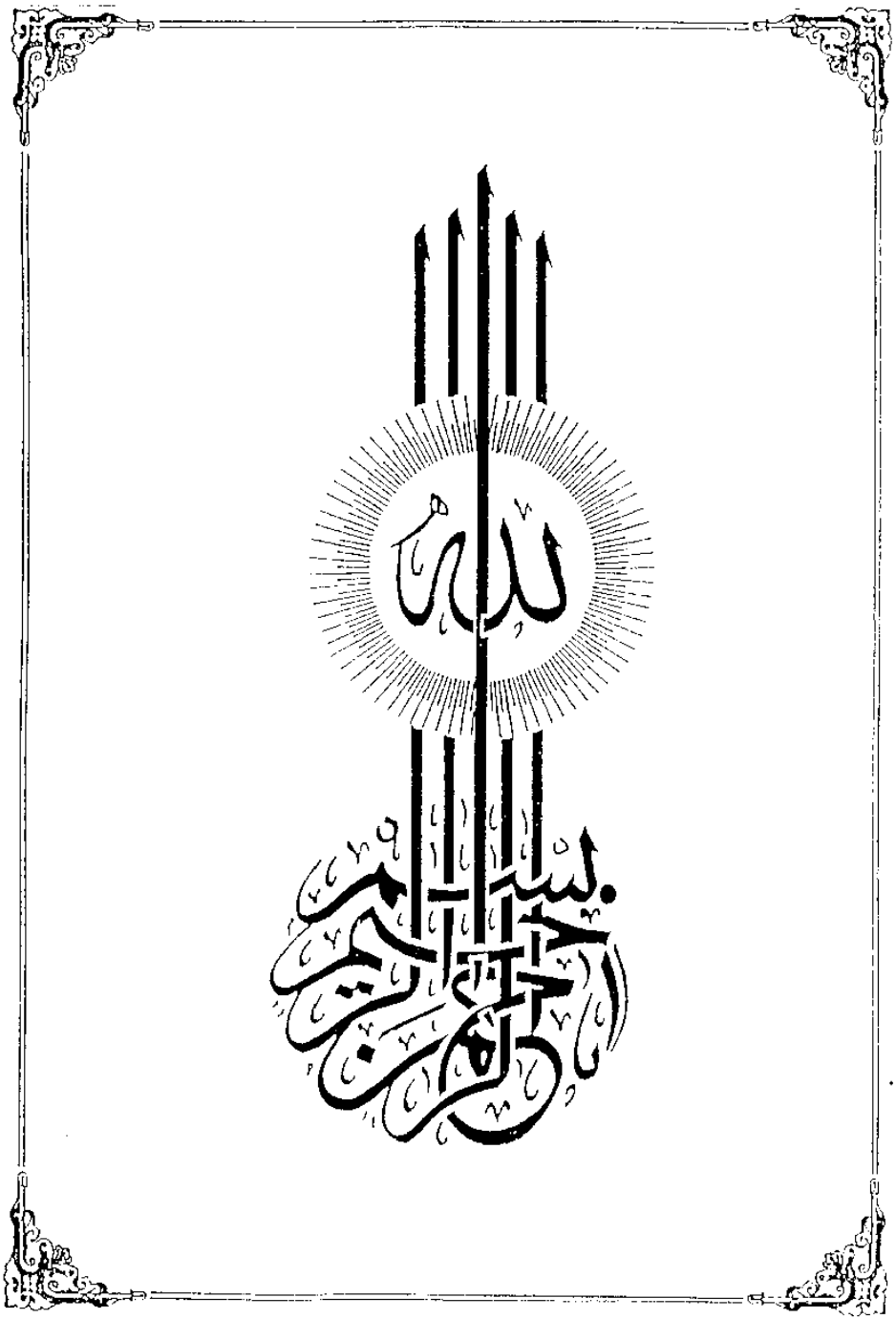

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Abstract

Lupin seeds represent an alternative plant protein source of soybean meal for poultry.

A series of experiments were conducted to determine protein digestibility and Metabolizable energy followed by a growth experiment to evaluate the nutritive value of sweet lupins in poultry diets as a substitute for soybean meal as a source of plant protein at the percentages of 0,25,50,75 and 100% of soybean meal protein.

In the growth experiment, 150 one day old unsexed commercial broiler chicks strain were divided into 5 groups of three replicates, 10 birds each. The experiment lasted seven weeks and birds were fed the experimental diets.

Live body weight, weight gain, feed intake and feed efficiency were recorded weekly.

At the end of the experiment, 6 birds per treatment were slaughtered for measuring the percentages of dressing, deboning and internal organs (Liver, gizzard, kidney and heart) as well as unedible parts (abdominal fat, blood, feather, head & neck, shanks & feet and spleen) as percentage of live body weight.

Total protein, albumin, globulin, cholesterol, creatinine and urea as constituents of the blood plasma were determined.

The following results were obtained:

* Apparent protein digestibility and true protein digestibility were 78.42 and 92.70%, respectively.

* Gross energy was 4.240 Kcal/gm for sweet lupins.

* Metabolizable energy (A.M.E, A.M.E_n, T.M.E, T.M.E_n) were 2.029, 2.211, 2.767 and 2.566 Kcal/gm; respectively.

* Replacing soybean meal protein by 50% sweet lupins showed significant increases of live body weight gain by 11.20% increase was recorded for the starter period from 0-4 weeks and 4.80% for the whole period from 0-7 weeks relative to the control group.

* Replacing soybean meal protein by 100% sweet lupins protein resulted in equal live body weight in the starter period as that of the control while in the whole period, 100% sweet lupins protein tended to lower the live body weight by 6.3% than the control group.

* Parameters recorded for the carcass and blood plasma constituents showed non significant differences in all parameters among groups.

The results obtained may lend support to the use of sweet lupins in replacement of soybean meal in poultry rations.

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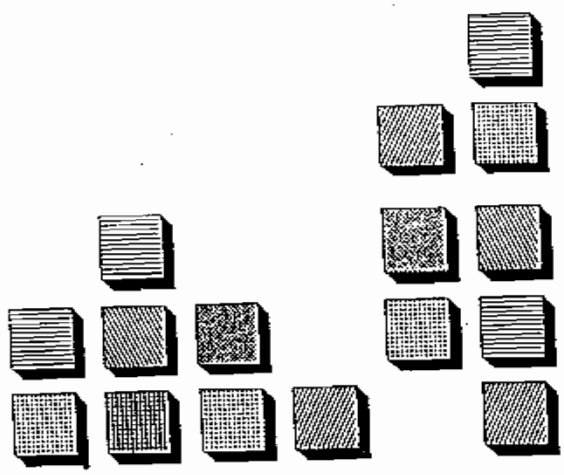

INTRODUCTION

Poultry feeding involves the use of several varieties of raw materials to produce complete and balanced diets, capable of meeting the nutritional requirements of the bird.

Legumes as source of plant protein are suitable ingredients of which soybean, faba bean, lupin, lentil and chick pea are crops of good potential in the Egyptian agriculture.

Soybean in particular is the main plant protein source used in poultry diets due to its good nutritive value and its controlled processing condition to minimize the anti- nutritional factors and to increase its digestibility value.

Due to price fluctuations and low availability in poor harvest years, it is in the interest of farmers and the poultry feeding industry to find alternative plant protein sources. Lupin seeds represent an alternative plant protein source for the poultry industry for their composition, high yield and good