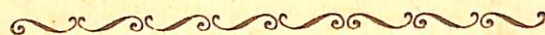


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NUTRITIONAL EVALUATION OF FORMALDEHYDE -
TREATED SOYBEAN OIL MEAL AS SOURCE OF
BY-PASS PROTEIN FOR NATIVE GOATS



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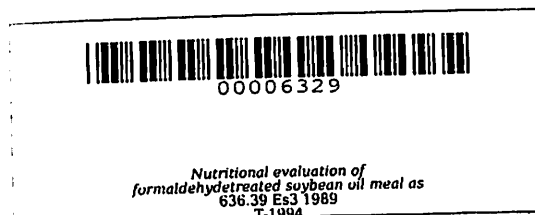
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MASTER OF SCIENCE IN ANIMAL SCIENCE
(Ruminant Production)

Summer 1989

NUTRITIONAL EVALUATION OF FORMALDEHYDE-TREATED
SOYBEAN OIL MEAL AS SOURCE OF BY-PASS
PROTEIN FOR NATIVE GOATS

ERANO CREUS ESGUERRA



Submitted to the Faculty of the Institute of Graduate Studies,
Central Luzon State University, Muñoz, Nueva Ecija,
Philippines, in partial fulfillment of the
requirements for the degree of

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(Ruminant Production)

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ABSTRACT

ESGUERRA, ERAÑO C. Institute of Graduate Studies,
Central Luzon State University, Muñoz, Nueva Ecija,
Philippines, Summer, 1989. NUTRITIONAL EVALUATION OF
FORMALDEHYDE-TREATED SOYBEAN OIL MEAL AS SOURCE OF BY-PASS
PROTEIN FOR NATIVE GOATS.

Adviser: Prof. Julius S. Viray

Sixteen 7-9 months old male native goats were subjected to four dietary treatments to determine their growth performance when confined and fed with diets containing formaldehyde-treated soybean oil meal (SBOM). The control group was fed with untreated SBOM while 3 groups were fed with SBOM treated with formaldehyde (HCHO) at levels of 0.5, 1.0 and 1.5 ml/100 g meal. All the diets were isonitrogenous and isocaloric. Napier grass and ipil-ipil soilage were fed ad libitum to the experimental animals.

Higher ($P < 0.05$) voluntary dry matter intake (VDMI) was observed in the group fed with SBOM treated with 0.5 ml HCHO/100 g meal than the other treatment groups. No marked differences were obtained from the animals fed with higher concentrations of HCHO and that of the

control. Also, no significant difference on VDMI was found when this was expressed as percentage of body weight.

The average daily body weight gain (ADG) of goats fed with meals treated with 0.5%, 1.0% and 1.5% formaldehyde were 0.027, 0.038 and 0.032 kg, respectively. Those in the control group had 0.032 kg. A significant ($P < 0.05$) improvement in ADG was observed at 0.5% level in both the control group and those fed with 1.0 or 1.5 ml/100 g soybean oil meal.

Similarly, results revealed higher ($P < 0.05$) digestion coefficients when soybean protein was treated with 0.5 ml HCHO. The other treatments did not differ significantly.

Blood urea nitrogen (BUN) concentration and total protein efficiency (TPE) of goats fed with HCHO-treated SBOM showed slight increases over the control. Statistical analyses revealed that the differences between those treated and untreated were not significant.

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INTRODUCTION

Importance of the Study

Animals constitute a tremendous storehouse of food which is available to man. The potential of the goat and its importance as component of livestock resources have now gained recognition in many parts of the world. Aside from meat and milk, goats also supply important non-food products like leather and wool.

In the Philippines, the importance of goat in livestock agriculture can be partly reflected by their number when compared with other livestock. As of January 1978, there are about 1.29 million goats widely distributed in the country (BAI-CBP, 1980).

However, with the estimated increase of 50 percent in human population of the world by the year 2000 (Carter, 1974), a relatively higher increase in food production must be met. With production of more food as today's foremost development challenge, improve goat production is one of the most ideal projects to consider because it supplements income and provides the undernourished rural folks a cheap source of animal protein for their diet (Faylon, 1982).