

# Coconut Meat and Rice Bran as Feed for Goat (*Capra Hircus*)

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**Abstract:-** Freshly-grated Coconut Meat (FGCM) and Rice Bran (RB) combined with Napier grass were utilized to compare the growth performance of goats fed with fine forage and legumes roughages. Twenty-seven doeling goats were used in the study, and fed with 0%, 10% and 15% levels of Freshly-grated Coconut Meat and Rice Bran plus roughage in the rations. The Two-factor factorial experiment in Randomized Complete Block Design with three replications were used to analyze the gathered data. The results showed that there was a significant difference among the type feed, the intake of FGCM and RB, and total dry matter intake are efficient for the diet of the goats. This is an implication that feed for this kind of livestock using the abovementioned raw materials are feasible, and available.

**Keywords:-** coconut meat, rice bran, feed, goat.

## I. INTRODUCTION

Ruminants are subject to consume feed with high source of concerted energy for rapid growth. The feed should be a fermentable carbohydrate, and high on starch (Balugon, 2007). Agricultural byproduct commodities are best for this fermentable energy-containing feedstuffs. Such examples are Rice Bran a byproduct of rice milling, and coconut meat. These are good source of carbohydrates for feeding the ruminants. Goats need a high concentration of feed for their diet due to the size of their digestive tract. Thus, the condition that these livestock need to be sustained with enough food, alternatives are considered which should be locally available.

In the coconut-producing areas of the Philippines, goat raisers usually provide their goats with coconut leaves to suffice the scarcity of grasses accessible for their livestock. On the other hand, fresh coconut meat is grated to be used as additional feed because of its palatability for the goats. Rice Bran are common ration of goats, moreover, mixed up of Freshly-grated Coconut Meat. The evaluation of FGCM and RB as feed for goats is necessary, providing farmers with the proper utilization of these feedstuffs for goat rations.

## II. MATERIALS AND METHODS

The study used 27 doeling goats for the data gathering. The goats were congregated into three groups based on their weights. The grouping served as the replications or blocks. Then, they were distributed at random per block in the experimental pens considering two factor factorial experiments in Randomized Complete

Block Design (RCBD) was used in the study; Factor A: different levels of FGCM, Factor B: varying levels of RB.

Nine treatments were replicated three times: T<sub>1</sub> = 0% FGCM + 0% Rice Bran; T<sub>2</sub> = 0% FGCM + 10% Rice Bran; T<sub>3</sub> = 10% FGCM + 15% Rice Bran; T<sub>4</sub> = 10% FGCM + 0% Rice Bran; T<sub>5</sub> = 10% FGCM + 10% Rice Bran; T<sub>6</sub> = 10% FGCM + 15% Rice Bran; T<sub>7</sub> = 0% FGCM + 0% Rice Bran; T<sub>8</sub> = 0% FGCM + 10% Rice Bran ration; and T<sub>9</sub> = 0% FGCM + 15% Rice Bran ration. The goats were confined in the during data gathering.

## III. RESULTS AND DISCUSSION

### A. Weight

FGCM and RB level, have no significant effect on the increase in weight of the goats as compared with the performance of the experimental animals; without concentrates in the diet. The experimental goats have an average 42 g daily gain.

Increases in weight of the animals under pure roughage was comparable to those animals that received concentrates. FGCM and RB both levels of 10% and 15% of the ration delivers no advantage but remains effective based on the results in terms of comparison. Meanwhile, this is not in consonance with the finding of Pineda (2005), claiming that concentrate supplementation to goats particularly on tropical forages is essential in improving the growth performance of these livestock.

### B. FGCM and RB Intake

The feed intake of experimental animals was affected by the levels of FGCM and RB. However, the interaction of these concentrates had no significant effect on the intake of FGCM and RB on as fed basis. The intake of FGCM and RB was affected by the levels of both feedstuffs. This is due to the enormous difference in dry matter content of the concentrates used.

Experimental animals were given huge amount of FGCM due to their needs of dry matter, considering it has a higher moisture than RB as food basis. FGCM is 70% while RB is 11% in terms of moisture content.

### C. Dry Matter Intake

The DMI of goats in 75 days is 29.04 kg, or 387 g per day. According to Mengistu *et al.* (2004), goats consumed 3% of their body weight on a dry matter feed. The percentage of consumption varies based on the weight of the goat. FGCM and RB levels have no significant impact on the total DM consumption of the studied livestock.

Regardless of the treatment DMI was very high ranging from 88 – 90 % of the total DM offered.

#### D. DMI as Percentage of Body Weight

According to Devendra (2010), the DMI of goats as percentage of its body weight ranges from 3 to 5%. Meanwhile, this study shows the experimental goats consumed only 2.58% of DM in terms their body weight which is lower than the standard reference but still reliable, and can be considered.

The DM intake as percentage of body weight of the goats was not affected by the different levels of FGCM or the different levels of RB. The 1.5 to 2 percent of body weight (dry matter intake) is for the maintenance of the animals and above this the intake will be used in the production of the animals.

| TREATMENT        | WEIGHT GAIN (g)      | AVERAGE FEED INTAKE (kg) | TOTAL DRY MATTER INTAKE (kg) | DMI as % of BW (%) | FCR               |
|------------------|----------------------|--------------------------|------------------------------|--------------------|-------------------|
| Control          | 3166.67 <sup>a</sup> | 2.50 <sup>e</sup>        | 28.91 <sup>a</sup>           | 2.59 <sup>a</sup>  | 9.36 <sup>a</sup> |
| 0% FGCM +10% RB  | 3166.67 <sup>a</sup> | 3.67 <sup>e</sup>        | 29.29 <sup>a</sup>           | 2.58 <sup>a</sup>  | 9.71 <sup>a</sup> |
| 0% FGCM +15% RB  | 3033.33 <sup>a</sup> | 5.45 <sup>e</sup>        | 29.00 <sup>a</sup>           | 2.58 <sup>a</sup>  | 9.65 <sup>a</sup> |
| 10% FGCM +0% RB  | 3100.00 <sup>a</sup> | 10.48 <sup>d</sup>       | 28.18 <sup>a</sup>           | 2.58 <sup>a</sup>  | 9.77 <sup>a</sup> |
| 10% FGCM +10% RB | 3166.67 <sup>a</sup> | 14.41 <sup>c</sup>       | 28.95 <sup>a</sup>           | 2.57 <sup>a</sup>  | 9.16 <sup>a</sup> |
| 10% FGCM +15% RB | 3133.33 <sup>a</sup> | 16.42 <sup>b</sup>       | 29.44 <sup>a</sup>           | 2.58 <sup>a</sup>  | 8.95 <sup>a</sup> |
| 15% FGCM +0% RB  | 3133.33 <sup>a</sup> | 16.28 <sup>b</sup>       | 29.19 <sup>a</sup>           | 2.58 <sup>a</sup>  | 9.48 <sup>a</sup> |
| 15% FGCM +10% RB | 3133.33 <sup>a</sup> | 19.95 <sup>a</sup>       | 29.32 <sup>a</sup>           | 2.58 <sup>a</sup>  | 9.08 <sup>a</sup> |
| 15% FGCM +15% RB | 3300.00 <sup>a</sup> | 21.94 <sup>a</sup>       | 29.09 <sup>a</sup>           | 2.54 <sup>a</sup>  | 8.95 <sup>a</sup> |

Table 1: Influence of Freshly-grated Coconut Meat and Rice Bran on the growth parameters of Doeling Goats

Legend: Means within column with different superscripts are significantly different ( $p < 0.05$ ); DMI as % of BW = Total Dry Matter Intake as % of Body Weight; FCR = Feed Conversion Ratio

#### E. Feed Conversion Ratio

FGCM and RB levels does not affect the Feed Conversion Ratio (FCR), even in their interaction. They have a uniform FCR, probably the studied animals convert the DM content of both the roughage and concentrates into weight having a uniform rate. The mean feed conversion ratio of the experimental animals in Table 1 with a general mean of 9.35 justified these findings. Each goat ate almost 10 kg of DM to obtain 1 kg liveweight gain. This result challenged the findings of Cantalapedra-Hijar *et al.* (2009) that high concentrate diets resulted in greater nutrient consumptions in goats.

## IV. CONCLUSION

The FGCM and RB can be considered as alternatives to sustain the feed supplies of goats in the different regions of the Philippines considering that these raw materials are locally available.

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