

Effect of Feeding Colocasia on Growth Performance of Large White Yorkshire Pigs Reared under Back Yard System at Bay Islands

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Abstract

Sixteen weaned Large White Yorkshire piglets were studied at farmers' field to observe the effect of colocasia on growth performances of pigs. The colocasia fed group had the significantly lower body weight at the end of first month and onwards and average daily body weight gain in comparison to pigs maintained on either coconut fed group (T₃) or poultry offal fed group (T₄). Under backyard condition, feeding colocasia alone did not improve the body weight gain and the feed should contain locally available energy and protein source for better performance.

Key words : Colocasia, Unconventional feed, Coconut, Pig.

In the past three decades the cost of pig feed has gone up, and moreover conventional feed ingredients are not available in sufficient quantum to meet out the requirement. Attempts have long been made to explore alternative feed ingredients. In tropics, pig productions do not compete with the human for food. Due to the expanding human population, there is an urgent need to search for alternate source of feed suitable for pig feeding. Different unconventional tropical fruits are excellent sources of nutrients for the pig (1). Some browse trees like the mulberry (*Morus alba*) and tuber plants like colocasia (*Colocasia esculenta*) and cocoyam (*Xanthosoma saggitifolium*) also provide leaves with low density energy but have a excellent digestible nutrient. These leaves could be used as a source of nutrient in monogastric animals (2). Very little information is available about their use in the different production system and the nutritive value of these feeds. Colocasia (*Colocasia esculenta*) is a herb with moderate leaves and small tuber. The tuber is normally used as human food but not the leaves are rich in protein and minerals (3). These leaves are primarily fed to sows because sow can digest these leaves better and transform it to their body mass (4). Proteins normally become the most limiting dietary factor for tropical pig production (5). A better understanding of their use by the pigs would help to develop a feeding system with the raw ingredients containing high fiber. Therefore the presents study was

made to observe the effect of colocasia on the growth performance of Large White Yorkshire pigs at post-weaning periods.

Methods

A total number of 16 post-weaned Large White Yorkshire piglets were selected under backyard condition. They were divided into four treatment groups viz. T₁, T₂, T₃ and T₄. Four feeding schedules were followed in 4 different categories of farms. Treatment-1 (T₁ as control) received rice bran and colocasia leaves as a sole feed. Similarly Treatment-2 (T₂) received broken rice/broken wheat in addition to the diet of control. Treatment-3 (T₃) consisted of home made concentrates (available cereals like broken rice/ broken wheat, dal chuni) along with kitchen waste and raw coconut and treatment-4 (T₄) had vegetable waste and poultry offal. The feeding was continued for 90 days. Monthly body weight was recorded and daily body weight gain (g/day) was calculated from the recorded observations. Data were analyzed as per standard statistical procedures.

Results and Discussion

The data on the effect of inclusion of colocasia leaves in pig ration on the production performance of pigs for a period of 90 days were observed and summarized in Table 1. The average initial body weight of piglets in groups T₁, T₂, T₃ and T₄ were 9.25 ± 0.25,

Table 1. Performance of Large White Yorkshire pigs under different feeding system in village condition. Mean values bearing different superscript in a row differ significantly ($P<0.01$).

Particulars	T ₁	T ₂	T ₃	T ₄
Average initial body weight (kg)	9.25 ± 0.25	7.75 ± 0.32	9.87 ± 0.88	8.40 ± 0.41
Average 1st month body weight (kg)	14.25 ^b ± 0.85	15.50 ^b ± 1.02	21.37 ^a ± 1.21	23.25 ^a ± 2.36
Average 2nd month body weight (kg)	19.50 ^b ± 1.71	22.50 ^b ± 1.19	28.62 ^a ± 2.08	32.87 ^a ± 1.05
Average 3rd month (final) body weight (kg)	26.25 ^b ± 1.75	28.75 ^b ± 0.85	39.25 ^a ± 4.17	39.25 ^a ± 0.63
Absolute body weight gain (kg)	17.00 ± 1.83	21.00 ± 0.54	29.75 ± 3.54	30.85 ± 0.22
Average daily body weight gain (g/day)	188.75 ^b ± 20.27	233.25 ^b ± 6.02	330.25 ^a ± 36.26	342.75 ^a ± 2.46

7.75 ± 0.32, 9.87 ± 0.88 and 8.4 ± 0.41 kg and the respective average body weight at the end of the experiment was 26.25 ± 1.75, 28.75 ± 0.85, 39.25 ± 4.17 and 39.25 ± 0.63 kg. The respective average daily weight gain per day was 188.75 ± 20.27, 233.25 ± 6.02, 330.25 ± 36.26 and 342.75 ± 2.46 g. The results revealed that the inclusion of colocasia leaves in the diet of pigs (T₁ and T₂) recorded lower body weight at the end of first month and onwards than the other two groups (T₃ and T₄). Similarly T₁ and T₂ also showed significantly ($P<0.01$) lower average daily body weight gain (g/day) than T₃ and T₄ groups but T₁ and T₂ did not differ significantly. This was in agreement with the findings of Buntha (6) who reported growth rate of 278 g per day in (Large White X Local) crossbred pigs fed with taro (*Colocasia esculenta*) leaf silage based ration. Hoffman (7) also reported growth rate in the range of 186 to 409 g/day in Wessex Saddleback breed of piglets fed with coconut based ration for a period of 12 weeks but lower body weight compared to the present study was observed by Naskar et al. (8) in cross bred pigs under village condition, fed with feed containing 50 percent locally available feed materials mixed with 50% balanced concentrate feed.

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