

## **A STUDY ON THE PERFORMANCE OF DESI PIGS ON RATION INCORPORATING JACK FRUIT, SWILL, PRAWN WASTE AND RAIN TREE FRUITS**

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Feed represents about 70-75 per cent of the total cost of production in swine (Kridler and Carrol, 1971) and hence any attempt to reduce the feed cost will add to the benefit of farmers. Pig rearing based on a commercial pig ration with conventional feed ingredients is not profitable considering the present market value of pork, cost of feed ingredients and feed conversion efficiency of available genetic groups of pigs in Kerala. The need of formulating a low cost pig feed deserves top priority for enhancing pig husbandry in Kerala. Several unconventional feed sources like jack fruit, rain tree fruit, swill and sea food industry waste (prawn waste) can be exploited for this purpose. Jack fruit is one of the popular fruits of Kerala. Jack tree is grown extensively in west coast, Assam and Bihar. The jack fruit is available during summer months. The seeds and flakes are rich sources of carbohydrate and seeds contain 12.6 per cent protein. Rain tree fruits

are rich in nutrients and are relished by animals. Feeding of Malabari cross bred goats of six months of age on ration containing 20 and 30 per cent rain tree fruit meal indicated that rain tree fruit meal at 20 per cent level was as good as the control ration in promoting growth in goats (Thomas *et al.*, 1996). Prawn waste, a byproduct of prawn processing plant consisting of the shell, head and appendages of prawn is an excellent source of crude protein and minerals. In Kerala availability of prawn waste is estimated as 19 lakh tonnes (Fisheries Statistics, 1991). Handling of prawn waste poses problems of disposal due to their moisture content, quick deterioration, offensive odour and the pollution hazards. In Kerala major portion is used as manure or thrown back to sea. Prawn waste could be preserved by ensiling with rice bran (1:1 wet basis) with the addition of tapioca flour at 10 per cent level (Ramachandran *et al.*, 1992). The

present study is undertaken to evolve economic pig rations with the above locally available unconventional feed ingredients.

### Materials and Methods

Nutritional experiments were conducted to assess the effect and economics of feeding unconventional feedstuffs such as Jack fruit (*Artocarpus heterophyllus*), swill, prawn waste - rice bran silage (consisting of wet prawn waste - 45 per cent, rice polish - 45 per cent, tapioca flour - 10 per cent. Salt 250g and mineral mixture 500g were added to 100 kg of the silage at the time of ensiling) and rain tree fruit (*Enterolobium samman*) to indigenous pigs of Kerala maintained at All India Co-ordinated Research Project (AICRP) on Pigs, Centre for Pig Production and Research (CPPR), Mannuthy.

Ripe jack fruit after removing the outer thorny portion was chopped into

small pieces and was fed as detailed in Table 1. Prawn waste was collected from the prawn peeling centres around Kodungallur (coastal town) and was transported in large drums. Prawn waste was ensiled with rice bran and tapioca flour as additive in the proportion 45:45:10. Salt and mineral mixture were added at the rate of 250g and 500g respectively for 100 kg. of silage. The dry matter was adjusted to 50 per cent by adding water. Hundred kg of the material was thoroughly hand mixed and packed tightly in 100 litre drum lined with polyethylene sheets. The polyethylene sheet was tied tightly excluding air and covered with a layer of mud. The silo was opened after 6 weeks and fed as detailed in Table 1. The design and duration of the trial are presented in Table 1. The dry matter (DM) and crude protein (CP) content of various unconventional feeds and standard ration were estimated.

**Table 1. Performance of desi pigs maintained on various unconventional feed stuffs**

Parameter	Jack fruit	Swill	Prawn waste rice bran silage	Rain tree fruit	Standard ration
1. Level of incorporation to standard ration (%)	50	100	100	50	-
2. No. of animals used (growers)	5	7	6	8	5
3. Period of experiment (days)	60	70	74	85	60
4. Average initial body weight (kg)	7.9	18.0	9.8	5.5	8.1
5. Average final body weight (kg)	15.0	31.0	14.6	12.3	17.0

Parameter	Jack fruit	Swill	Prawn waste rice bran silage	Rain tree fruit	Standard ration
6. Average daily gain (g)	118.3	185.7	64.2	79.3	148.3
7. Average daily DM consumption (g)	656.0	629.0	468.0	268.4	971.0
8. Feed conversion efficiency (DM) 1:	5.56	3.38	6.38	3.28	6.56
9. Cost of production* per kg live body weight (Rs.)	34.07	7.03	50.51	26.61	50.49

\*Based on the assumption that feed cost accounts for 75% of the total cost of production in pigs.

### Results and discussion

Performance of desi pigs maintained on various unconventional feed stuffs are furnished in Table 1. The DM and CP content of various unconventional feed stuffs studied are given in Table 2.

**Table 2. Dry matter and crude protein content of unconventional feed stuffs and standard ration**

Item	DM %	CP %
1. Jack fruit	30.40	16.45
2. Swill	27.09	13.82
3. Prawn waste-rice bran silage	50.00	16.70
4. Rain tree fruit	94.40	15.50
5. Standard ration	90.00	18.00

The results indicate that cost of production can be reduced considerably by using unconventional feed stuffs such as jack fruit, swill and rain tree fruit. Prawn waste-rice bran

silage as a feed resource can be used at a lower level of incorporation but needs further study.

### Summary

An investigation on the feasibility and economics of feeding certain unconventional feed stuffs available in Kerala was carried out in desi pigs. The results indicated that cost of production in pigs can be considerably reduced by feeding the unconventional feed stuffs studied. The study also throws light into the possibility of developing a complete pig ration by utilising various unconventional feed stuffs available in Kerala.

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