

## STUDY ON PANCHAKAVYA - AN INDIGENOUS FORMULATION AND ITS EFFECT ON THE GROWTH PROMOTION OF CROSSBRED PIGS

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### ABSTRACT

This paper deals with the preparation of panchakavya an indigenous formulation consisting of products from cow viz., dung, urine, milk, curd and ghee and its effect on promotion of growth in crossbred pigs. Panchakavya was found to have growth promoting properties especially in animals with more native germplasm.

### INTRODUCTION

Livestock plays a vital role in the livelihood of Indian villages and its products have significant place in the social, economical, cultural and religious life of villagers. For sustained management of the health of the livestock, our farmers have evolved many indigenous formulations based on knowledge accumulated through generation of experience and documentation of this formulas and practices will be of immense value to the farming community.

Panchakavya has been one such excellent formulation which consists of five products from cow viz., dung, urine, milk, curd and ghee. When suitably mixed and used these have been found to show miraculous effects on the health and well being of animals and plants.

Basically, Panchakavya is a living elixir of many microorganisms, bacteria, fungi, protein, carbohydrate, fat, amino acids, vitamins, enzymes, known and unknown growth promoting factors, micronutrients, trace elements, antioxidants and immunity enhancing factors. Panchakavya was reported to contain *Azospyrillum*, *Azotobacter*, *Pseudomonas* and many other beneficial organisms (Solaiappan, 2003). When taken orally by animal and human being, the living microorganisms in the panchakavya stimulate the immune system and produce many

antibodies against the ingested microorganisms. It acts like a vaccine. The response of the body increases the immunity of animals and humans and thus helps prevent illness and cure disease. Thus, the animals and humans become hale and healthy with shining hair and skin (Natarajan, 2003). Panchakavya was used as a growth promoter in organic farming by farmers from various parts of Tamilnadu with great success (Narayanan, 2000).

A preliminary attempt has been made to assess the effect of panchakavya in the promotion of growth rate in cross bred pigs (Large White Yorkshire x Desi pigs) maintained in the All India Coordinated Research Project on pigs unit, Livestock Research Station, Kattupakkam, Tamilnadu.

### MATERIAL AND METHODS

All the animals used in the study were farm bred and raised under uniform feeding, housing and other managerial practices. The trial was conducted simultaneously in two genetic groups (50% and 75% of exotic inheritance) consisting of weaners. The resulting data was compared between the groups and genetic groups. The distribution of animals in both the groups was randomized based on their initial weight in such a manner so that half of the animals in each group were of different sex.

Panchakavya was prepared by adding

all the items mentioned in Table 1 to a wide mouth plastic can in the order specified and kept open in the shade. The contents were stirred twice a day both in the morning and evening. By the seventh day the panchakavya stock solution was ready for use. The animals in the treatment group were fed with 1% panchakavya by weight of the concentrate feed offered. The control group received the concentrate feed only. At the start of the trial each piglet was given @ 25 ml of the panchakavya per day and received @ 100 ml at the end of the trial. The animals were fed ad libitum and based on the remains at the end of the day the amount of feed and panchakavya were increased on the next day. Water was provided and libitum.

All the animals were monitored for their acceptance and refusal of the feed. The animals were weighed at fortnightly interval up to 26 weeks of age to assess their growth rate. The average daily weight gain (ADG) was calculated by

$$\frac{\text{Final weight (kg)} - \text{Initial weight (kg)}}{126 \text{ (days)}}$$

The data generated was analyzed by the standard statistical procedure as described by Snedecor and Cochran (1968).

## RESULTS AND DISCUSSION

Least square means of weights of the animals taken at fortnightly interval were given

in Table 4. The panchakavya was analyzed for the presence of ova, total viable count and coliform count. The bio physical and bio chemical properties and proximate composition were given in Table 2 and 3. Interestingly the coliform count and parasitic ova were nil in the samples and the pH was 6.0 i.e. slightly acidic. Crude protein was 3.72% and the aflatoxin was totally absent. Initially all the piglets refused and took the feed mixed with panchakavya reluctantly even at 13 ml per animal. By second week onwards they started to consume the feed as if not mixed with panchakavya and started to lick the panchakavya even when fed alone. By third week the acceptance was complete.

Over all the results revealed insignificant difference between the treatment and control groups. Phenotypically all the panchakavya treated animals looked very bright and pinkish with a healthy and shining hair than the control group. Group wise the 50% crossbreds showed significant difference in bodyweights at 26th week. The panchakavya treated animals attained 19.6% more weight gain than the control animals in this group. The average daily weight gain (ADG) was higher in the 75% group. Genetic group wise the treatment group did not show any superiority over the control group and the body weight of the treatment group was higher than the control group almost at all the weighments (results not shown) and it was more

**Table 1.** Ingredients for making panchakavya (Natarajan, 2003)

Ingredients	Quantity
Cow dung slurry (from Gobar gas plant)	4 kgs
Fresh cow dung	4 kgs
Cow urine	3 litres
Cow's milk	2 litres
Cow's curd	2 litres
Cow's ghee	1 kg
Sugarcane juice	3 litres
Tender coconut water	3 litres
Banana (ripe)	12 nos.
Toddy (if available)	2 litres

**Table 2.** Bacteriological properties of panchakavya

Properties	Results
Sedimentation activity test	Absent
Methylene blue reduction test	90 minutes
Parasitic ova	Nil
Total viable count	$1.08 \times 10^4$ CFU/GM
Coliform count	Nil
Cultural examination	Revealed presence of <i>Bacillus sp.</i>

**Table 3.** Biochemical and biophysical properties of panchakavya

Properties	Composition (%)
Colour	Olive green
Consistency	Viscous
Odour	Aromatic
p H	6.0
Moisture	86.41
Crude protein	3.72
Crude fibre	0.95
Ether extract	2.35
Sand and silica	0.59 (TA: 1.76%)
Calcium	0.20
Phosphorous	0.10
Salt	0.16
Aflotoxin B <sub>1</sub>	Negative
Cit, Ca, T-2 toxin	Nil
Zearalenone	Nil

**Table 4.** Least square means of initial and final body weights

Genetic group	Treatment group	8 <sup>th</sup> week body weight (kg)	20 <sup>th</sup> week body weight (kg)	26 <sup>th</sup> week body weight (kg)	Average daily gain (gm)
75% CB	Control	8.68±0.66	25.26±2.11	36.90±3.22 <sup>a</sup>	224.31±0.95 <sup>a</sup>
	Panchakavya	9.30±0.62	26.47±1.99	36.50±3.04 <sup>a</sup>	215.87±0.82 <sup>a</sup>
50% CB	Control	9.23±0.76	21.64±1.85	30.27±2.26 <sup>a</sup>	166.96±0.86 <sup>a</sup>
	Panchakavya	9.38±0.76	22.92±1.85	34.53±2.27 <sup>b</sup>	199.62±0.69 <sup>b</sup>

Means in the same column with different superscripts differ significantly at P<0.05 level.

evident in the 50% genetic group. The superiority of treatment group over the control group ranged between 1.11 to 15.9% in 50% crossbreds and -3.9 to 5.79% in 75% crossbreds in all the weightments. The ADG was statistically significant (P<0.05) in the 50% crossbreds (199.62±0.69)gm. This showed

that the genotype had some influence on the performance of animals fed with panchakavya. Animals with more native germplasm showed better performance than animals with less native germplasm. Hence, further investigation in this regard is necessary before coming to any concrete conclusion.

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