

**PHENOTYPIC AND MORPHOLOGICAL  
CHARACTERIZATION OF INDIGENOUS PIGS IN  
NORTHERN DISTRICTS OF TAMIL NADU**

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**MVM 15008 (AGB)**

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**CERTIFICATE**

This is to certify that the thesis entitled “**PHENOTYPIC AND MORPHOLOGICAL CHARACTERIZATION OF INDIGENOUS PIGS IN NORTHERN DISTRICTS OF TAMIL NADU**” submitted in partial fulfillment of the requirements for the degree of **MASTER OF VETERINARY SCIENCE** in **ANIMAL GENETICS AND BREEDING** to the Tamil Nadu Veterinary and Animal Sciences University, Chennai – 51, is a record of *bona fide* research work carried out by **K. SANGLI VIKRAM KUMAR, MVM 15008 (AGB)**, under my guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes.

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## ABSTRACT

### PHENOTYPIC AND MORPHOLOGICAL CHARACTERIZATION OF INDIGENOUS PIGS IN NORTHERN DISTRICTS OF TAMIL NADU

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A study was conducted with the objectives of surveying the indigenous pigs in northern districts of Tamil Nadu and identification of distinct populations and Phenotypic and morphological characterization of distinct populations. A total of 10442 animals were surveyed in northern districts (Thiruvallur, Kancheepuram, Vellore, Tiruvannamalai and Villupuram). The total number of indigenous pigs measured were 1059 of which 511 were males and 548 were females. Data with respect to growth traits such as body weight and body measurements were collected. Body weight and body measurements were recorded at different ages viz., 0 – 1 month of age, 2 – 6 months of age, 7 – 9 months of age, 10 – 12 months of age and above 12 months of age. The types of characters observed and measured in the survey are descriptive and morphometric traits.

Descriptive and morphometric data were subjected to exploratory and descriptive analyses. Pair-wise comparisons were made for significant source of variation using Duncan's Multiple Range Test (DMRT). The parameters were analysed using IBM SPSS software version 20.0 for Windows.

The present study showed that the coat color of indigenous pigs of Tamil Nadu was black with skin pigmentation of complete black (84.23%), black with white (14.83%) or black with brown (0.94%). The shape of the head was straight in most of the indigenous pigs (94.24%) and the others had convex shape (5.76 %). They have two types of ears viz., erect ears (48.44%) and leaf-like droopy ears (51.56%). The ear orientation or direction of the indigenous pigs was erect pointing backwards towards the tail (32.30%), horizontal on either sides (16.14%) and dropping towards the ground (51.55%). The tail was long, straight and pendulous in all the pigs (100 %) with tuft of hair at the tip of tail. They also had flat (93.57%) or pot-shaped (6.33%) belly. The top line of indigenous pigs was straight (56.94%) or arched (43.06%). The body shape of indigenous pigs was either angular or stocky which accounted for 48.26% and 51.74%, respectively. The animals with droopy ears had stocky body while the pigs with erect ears had angular body shape. The hoof placement of indigenous pigs was full in all animals studied. The wattles were not common in the indigenous pigs of Tamil Nadu.

The overall least-squares mean for body weight at 0 – 1 month, 2 – 6 months, 7 – 9 months, 10 – 12 months and above 12 months of age were  $2.41 \pm 2.31$ ,  $28.39 \pm 1.87$ ,  $57.82 \pm 2.12$ ,  $61.19 \pm 2.39$  and  $74.17 \pm 2.10$  kg; for body length were  $17.96 \pm 2.32$ ,  $47.58 \pm 1.88$ ,  $64.80 \pm 2.13$ ,  $75.31 \pm 2.40$  and  $78.78 \pm 2.11$  cm; for snout length were  $4.14 \pm 1.04$ ,  $12.48 \pm 0.84$ ,  $17.31 \pm 0.96$ ,  $18.39 \pm 1.08$  and  $19.07 \pm 0.95$  cm; for ear length were  $4.25 \pm 0.73$ ,  $10.54 \pm 0.59$ ,  $14.31 \pm 0.67$ ,  $14.28 \pm 0.76$  and  $16.31 \pm 0.67$  cm; for tail length were  $8.15 \pm 0.88$ ,  $18.68 \pm 0.71$ ,  $24.45 \pm 0.81$ ,  $26.85 \pm 0.91$  and  $29.98 \pm 0.80$  cm; for height at withers were  $18.67 \pm 1.84$ ,  $46.92 \pm 1.49$ ,  $58.41 \pm 1.69$ ,  $64.87 \pm 1.90$  and  $70.35 \pm 1.68$  cm; for chest girth were  $24.56 \pm 5.27$ ,  $62.47 \pm 4.28$ ,  $84.49 \pm 4.84$ ,  $95.45 \pm 5.45$  and  $104.01 \pm 4.80$  cm; for neck girth were  $17.73 \pm 2.26$ ,  $46.29 \pm 1.83$ ,  $63.21 \pm 2.07$ ,  $69.95 \pm 2.33$  and  $73.55 \pm 2.06$  cm; for paunch girth were  $19.47 \pm 3.29$ ,  $59.05 \pm 2.67$ ,  $80.61 \pm 3.02$ ,  $82.92 \pm 3.40$  and  $102.28 \pm 2.99$  cm, respectively. The mean teat numbers of males and females were  $9.92 \pm 0.07$  and  $9.93 \pm 0.07$ , respectively.

**Keywords:** Indigenous pigs, Phenotype, Morphology, Characterization, Tamil Nadu