

Research paper

Characterization of population and production system of Tenyivo pig of Nagaland (India)

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ABSTRACT

Tenyivo pig has been recently registered as fourth indigenous pig breed of India. The breed is popular among resource poor families of Nagaland and Manipur and requires low input system for rearing. Tenyivo pig possesses unique economic traits such as mothering ability, early sexual maturity specifically in males, adaptability to humid environment and meat quality. In this paper, Tenyivo pig population and its production system was characterized. This breed needs to be conserved and researched in terms of its reproductive and carcass quality. The pig can be developed as a sustainable breed of pig among tribal in India

Keywords: *Tenyivo*, tribes, physical characterization, socio-economic, adaptability, meat quality, sustainability

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INTRODUCTION

Pig keeping is traditional amongst tribes in India. The recognition and attachment of backyard piggery of tribal belts in the country is due to the absence of sensitivities to pig rearing and consumption of pork meat. Pig domestication for tribal is linked with socio-cultural obligations as well as generation of additional income. In recent years amongst tribal of the North-East India, there are instances of transition from shifting cultivation to more integrated farming due to lack of workforce as well as development and population pressure. Small land holding families are adopting backyard piggery, which is more profitable and less labour intensive. The products from pig farming are easily saleable and the cash returns are either utilised to meet the family expenses as well as accumulating capital in banks. Most tribal family rear one to three pigs although some household in peri-urban area rear up to fifteen pigs. Pig feed is mainly the by-products of paddy, maize, taro, vegetables, gathered forages and family kitchen wastes. Pigs therefore serve to convert existing resources and waste products of low value into high-value animal protein food for home

consumption and/or sale. Rearing these pigs help the tribal households to diversify their risks, serves as source of income for day-to-day household expenses such as home repairs, school fees, medical treatment, family feast and other essential needs. Pigs are fittingly termed as 'Rural Living Banks' (Ruhilla, 2004).

North Eastern states being predominantly tribal, pigs are more popular among livestock in terms of rearing and consumption. According to the latest livestock census 2012, there are 3.95 million pigs (40%) in the North East region out of 10.29 million pigs in the country. In spite of higher per capita density of pig in the region (15.07) and human-pig ratio (11.54:1), the region still imports about 30% of its requirement (19th Livestock Census, 2012). This is indicative of the scope of further piggery development in the region.

The Indigenous pig *Tenyivo* has unique economic traits, like better ability to resist disease, early sexual maturity, excellent mothering ability, and superior local climate adaptability which is lacking in the exotic breeds (Fig. 1.; Rusta, 2016). With such outstanding economic traits available within the



Fig. 1. Tenyivo Pig

blood line of indigenous Naga pigs, the ICAR-National Research Centre on Pig, Rani, Guwahati, has initiated programs for detailed research study for the improvement and commercialization of these little known indigenous pigs (Sahoo, 2012). Among Naga indigenous sub-species, *Tenyivo* pig has been elaborately studied and researched. The *Tenyivo* pig is found in Tenyimia dominated areas of Nagaland and Manipur states. It is stated to be around 60,000-70,000 across 130 odd villages in the two states.

MATERIALS AND METHODS

The study was carried out in eight villages selected from four districts of Nagaland namely; Dimapur, Kohima, Peren and Phek. Two villages from each district were picked from the existing breeding tract of *Tenyivo* pig. A total of 40 respondents rearing *Tenyivo* pigs were randomly selected 5 from each village. A set of semi-structured questionnaire was used and the primary information on the breed description, distribution, breeding tract, morphological characters, management practices like housing, breeding, feeds and feeding was collected through interviews. The primary information from the knowledgeable *Tenyivo* pig farmers is recorded, collated and reproduced.

RESULTS AND DISCUSSION

Distribution and habitat

The name of the breed '*Tenyivo*' is derived from two words - *Tenyimia* refers to a group of people comprising of some 10 tribes occupying the southern parts of Nagaland state and northern parts of Manipur state, and *Theyo* refers to 'pig' in the

Tenyidie dialect. This breed of pig is found in Tenyimia dominated areas of Nagaland and Manipur states. The breed is available in Dimapur, Kohima, Peren and Phek districts of Nagaland and Senapati, Tamenlong and Ukhrul districts of Manipur (Fig. 2.). The natural habitat of the *Tenyivo* pig is sub-tropical to sub-temperate region and they thrive best between 900-1500 Meters ASL. Before piggery intensification and introduction of exotic breeds in the region, this pig was reared in open arial conditions with minimal housing facilities to protect the pig from extreme weather conditions during winter and summer. The pig thrives well with meagre coarse grains and kitchen wastes along with wild foliage and tubers, which the animal forages during day time.



Fig. 2. Breeding track of Tenyivo Pig

Breed description

The body coat of *Tenyivo* is predominantly black with white spots on the forehead and limbs. Thick coarse bristles extend from the wither to the hindquarters. The hair coat is thick and evenly distributed. The switch of the tail is almost touching the hock joint and the switch is usually white in colour. The head and neck are heavier as compared to the hindquarters. The neck is full to the shoulders, it has a long face that tapers toward the strong and long snout. It has a sagging back, a pendulous belly almost reaching the ground among adult female pig. Its eyes are small,

Table-1: Body measurements of *Tenyivo* Pig

Body measurement (cm)	Male			Female		
	Average	Range	N	Average	Range	N
Chest girth	63.5±10.10	55-71	18	58.42±7.60	53-66	18
Body length	55.88±12.70	50-63	18	50.80±7.60	48-64	18
Height at withers	30.48±0.20	28-36	18	25.40±0.20	23-30	18
Neck girth	30.48±0.42	28-36	18	25.10±0.15	23-30	18

clear and sharp. Ears are small and erect. Distinctive features of *Tenyivo* Pig are -medium size and sturdy in nature, early sexual maturity, excellent mothering ability, low feed intake capacity, better diseases resistance, better adaptability to local climatic conditions, less management cost, better meat quality, high quality bristles and ferocious with strangers but docile with the owner (Karunakaran et al., 2009, Savino et al., 2015, Chusi et al., 2016).

Morphological Characters of Tenyivo Pig:

Tenyivo pig is a small statured unique pig. The body coat is predominantly jet black with white markings on the forehead, flanks, switch of the tail and legs. The head is comparatively large with a strong tapering snout. The ears are small and erect. The eyes are clear, alert, and black in colour. The neck is short and full to the shoulders. The poll, butt, and shoulder regions are poorly developed. The fore limbs are short and strong. The pastern is straight and carries well defined dew claws and toes. The breed has a sagging back and loin region. The dorsal top-line is covered with a thick and long bristles extending from the poll to the base of the tail. It has a short trunk with a pendulous belly. Adult females have 3-4 pairs of teats which are small and well spaced. The rump and ham are poorly developed. The limbs are also short and small, but well defined without any coarseness. The tail is relatively long, extending up to the hock joint which usually ends in a switch and white in colour. The adult body length from the occipital bone to the base of the tail in the females is 48-64 cm, and 50-63 cm in the males. The height of adult pigs at the wither is 23-36 cm in females, while that of adult males is 29-31cm.

Management practices

The pig farmers engage themselves in the age old pig management practices without any uncertainty. Pig rearing is a part and parcel of the tribal Nagas

(Hutton, 1969). Two to three *Tenyivo* pigs were reared by every family, rich or poor. Housing, feeding, and health management of Indigenous Local *Tenyivo* pig by the local people is simple and easily managed by any member of the family. The common traditional country pig house is of 'Machang' type, which is raised 1½-2 feet above the ground. The pig pen is constructed using locally available materials such as wooden posts, beams, planks, bamboo splits, thatch and/or used CGI sheets. The floor space is usually 4 x 6 ft (24sq.ft.) without any paddock or open area. The height of the pen varies from 4-4½ ft. Dug out wooden feeding trough is common in remote villages. Improvised feeders made from used vehicle tyres and carved stone feeders are increasing in use because of its durability. It is not uncommon to rear *Tenyivo* on raw earthen floor with minimal roofing to shelter pigs from heat and rain.

The feed consists mostly of grains and vegetables collected from jhum fields, kitchen garden, other jungle herbs, coarse grains and kitchen waste are well cooked and fed. The cooked semi-liquid feed is fed twice a day at the rate of 1½ - 2 kg per adult pig. Feed supplements such as minerals, probiotics and vitamins are rarely provided to the pigs in the local condition. Some villagers add a little quantity of clean ash or stingless bee hive, or locally prepared herbs into the cooked slurry when the pigs show sign of reduced feed intake. They claimed that these tips helped the pigs to regain their normal appetite.

In conclusion, *Tenyivo* is now a recognised Indian pig breed with accession number INDIA_PIG_1400_TENYIVO_09004. It is a unique breed with high quality meat and early sexual maturity. It occupies a significant role in the life of people of Nagaland state. As, there is decreasing trend of this indigenous breed population, the risk of economical and heritage loss has been increased,

therefore, particular age-old unique breed need to be safeguarded by modern biotechnological interventions.

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