

Ghoongroo pig: A new found animal genetic resource of sub-Himalayan West Bengal, India

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Summary

A breed of pig with distinctive productive and reproductive characteristics has been identified in the eastern Sub-Himalayan region of West Bengal state, India and adjoining Nepal. The breed is known as Ghoongroo (meaning anklet in the local language). The breed is most prevalent within 88° E to 90° E longitudes and 26.3° N to 27.3° N latitudes. Two distinct climates viz., cold moist and hot humid are observed during the year. Farmers manage the animals both under stall-feeding and stall-feeding-cum-grazing systems. Simple housing principally made up of bamboo and jute stick is used with an emphasis on giving protection from the rain.

The population in the breeding tract varies depending on market demand. Generally, the population varies from 8 000 to 10 000. Pigs are black in colour with a compact body, long thick coarse hair, a long tail and an upwardly curved snout. The face is broad and flattened with large, heart shaped ear resembling that of an elephant. Average litter size at birth is 11.92 ± 0.06 and a litter size of up to eighteen is not uncommon on a low to medium plane of nutrition. Body weights at birth, five months and one year of age are 1.08 ± 0.22 , 38.91 ± 1.49 and 106.3 ± 0.31 kg respectively, irrespective of sex.

This unique germ plasma has the potential to replace exotic breeds from temperate zones currently used in improved pig production programs. However the breed is under constant threat due to indiscriminate

crossbreeding with other varieties. Thus the immediate implementation of conservation and improvement programs is essential to salvage the breed.

Resumen

Une race de cochons avec des caractéristiques spécifiques de production et reproduction a été identifiée dans l'Est de la région du Sub-Himalaya dans l'Ouest de l'Etat du Bengal en Inde, tout près du Nepal. La race est appelée Ghoongroo (cela signifie dans la langue locale bijou que l'on porte autour de la cheville). La race est la plus répandue sur la longitude de 88° à 90° E et la latitude de 26.3° à 27.3° N. Il existe deux types différents de climat dans cette région - froid et humide, ainsi que chaud et humide. Les agriculteurs élèvent ces animaux avec du fourrage dans les étables et aussi sur pâturage naturel. On utilise du bambou et des bâtons de jute pour des simples constructions pour sauvegarder les animaux en particulier contre la pluie.

La population dans les élevages varie selon la demande du marché. En général cela varie de 8 000 jusqu'à 10 000. La race est de couleur noire avec un corps compact, un pelage gros et long, une queue longue et un museau courbé vers le haut. La visage est large et aplati avec des oreilles grandes et façonnées comme celles des éléphants. En moyenne le nombre à la naissance est de 11.92 ± 0.06 et jusqu'à 18 est considéré assez fréquent avec un niveau moyen-faible de nutrition. Ils pèsent 1.08 ± 0.22 kg à naissance,

38.91±1.49 kg à 5 mois après la naissance et 106.3±0.31 kg quand ils ont un an, indépendamment du sexe.

Ce germoplasme unique a le potentiel de remplacer les races exotiques des zones tempérées, qui sont utilisées dans les programmes d'amélioration pour la production de cochons. Cependant cette race est menacée par l'élevage de races 'scrub' sans faire de distinction. Ainsi, pour la sauver, il est essentiel de démarrer un programme immédiat pour la conservation et l'amélioration.

Key words: Pig, Ghoongroo pig, Sub-Himalayan, West Bengal, India.

Introduction

The commercial value of pig genetic resources on the Indian sub-continent is low owing to their poor economic traits. Domestic pigs found in this region are believed to have a common origin with the wild pig *Sus scrofa cristatus* (Macdonald, 2001). Phenotypic variations among different subgroups are very low and they are generally called 'local pig'.

A breed of pig with distinctively superior productive and reproductive characteristics has recently been identified in the eastern Sub-Himalayan region of West Bengal, India and adjoining Nepal. The breed is commonly known as Ghoongroo (meaning anklet in local language) to farmers, researchers, planners and development workers. However no history or justification can be given for the nomenclature. The breed is also known by other names by different small tribal sub-groups in their dialects. Planners and developers are using this breed more than exotic breeds which are much more costly considering the available resource base of local farmers. This paper presents the characteristics of this pig and assesses conservation needs of the breed.

Distribution

The Ghoongroo pig is most prevalent in Dooars valley of the eastern Sub-Himalayan region of West Bengal between 88° E and 90° E longitude and 26.3° N and 27.3° N latitude. The area belongs to the civil districts of Darjeeling, Jalpaiguri and northern Cochbehar (Figure 1). The breed is also found in the eastern part of Nepal adjoining the Darjeeling district.

Topography and Climate

Being located in the Sub-Himalayan region, the topography is undulating. The northern part is hilly with altitudes of up to 3 000 m above mean sea level. The southern part is plain and ranges in altitude from 150 m to 300 m above mean sea level (Dooars plain). The soil is Brown Mountain in the extreme north followed by Terai and New Alluvial towards the south. The minimum temperature plunges to 10°C during January while maximum temperatures reach 34°C during July. Average annual rainfall is 3 456 mm. Two distinct climates, viz. cold moist (November to April) and hot humid (May to October) could be identified during the year (Figure 2).

Management Practices

Farmers manage their animals in both under stall-feeding and stall-feeding-cum-grazing systems. Tethered grazing is the usual practice. Herd size is generally low ranging from one to five reproductive animals. Organised farms with up to fifteen reproductive animals are also not uncommon in the breeding tract. Farmers change their herd size frequently depending upon market trends. Occasionally they even wind up and restart farms. Housing systems are very simple and are designed only to provide feeding and watering facilities to the animals, minimum fencing and protection

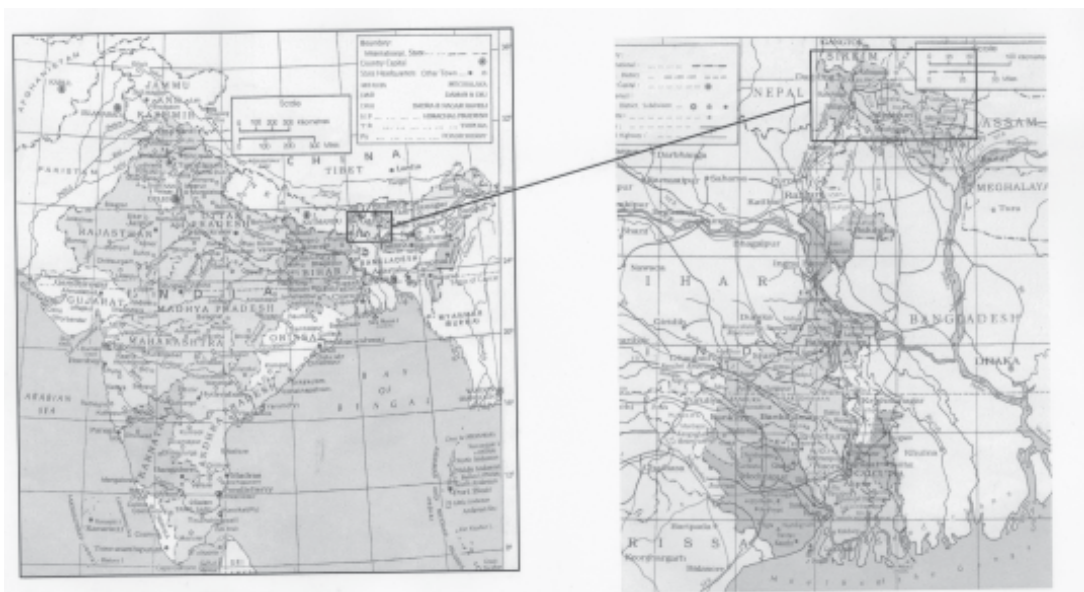


Figure 1. Breeding tract of Ghongroo pig.

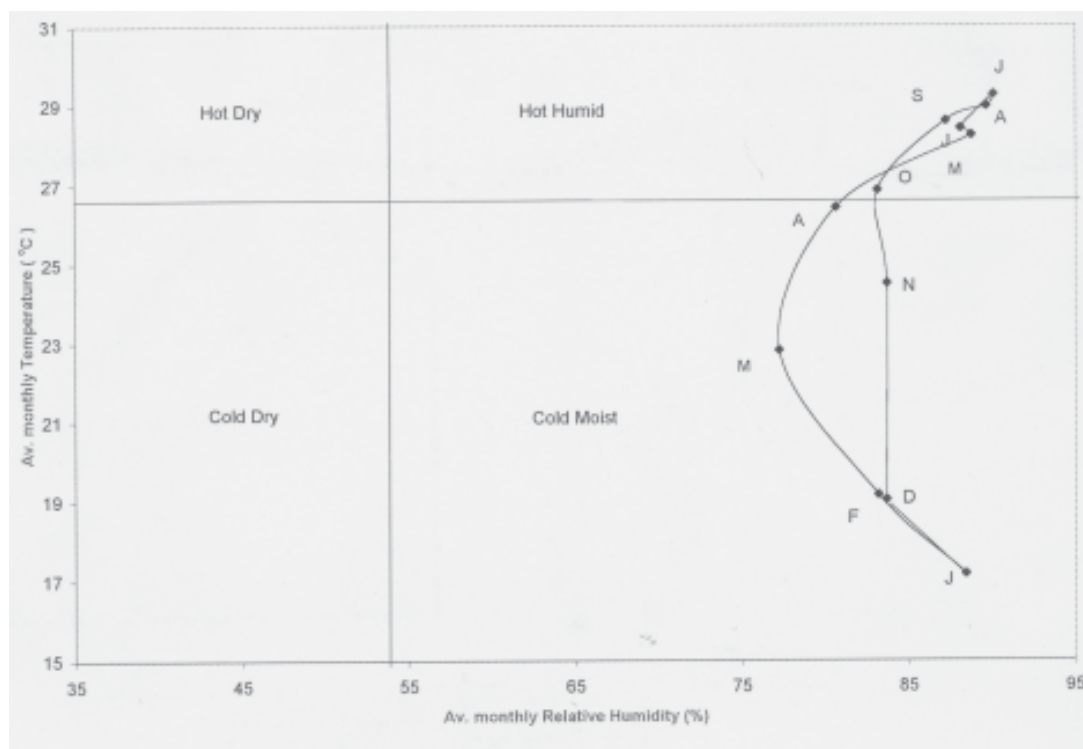


Figure 2. Climatography of Ghongroo pig breeding tract

from rain. Major housing materials are bamboo and jute-stick which are freely available locally, and earthen or cement-cast mangers. Earthen floors are adequate for animals being raised under a stall-feeding-cum-grazing system but are not hygienic for animals on stall-feeding only. Foodstuffs utilised for stall-feeding consist of rice husks, rice gruel, kitchen and hotel waste and fresh fish offal. Concentrated feed is considered a costly option in the existing production system.

Population Trends

The population of the Ghoongroo pig in the breeding tract varies depending upon market demand. Farmers start or increase Ghoongroo production based on expected profitability. The high reproduction rate of the breed makes this approach possible. Middlemen, on demand, also procure animals from Nepal. As nondescript variety pigs are also raised side-by-side with the Ghoongroo pigs, farmers often interbreed Ghoongroo with nondescript varieties out of negligence. Generally 8 000 to 10 000 animals constitute the population in

the breeding tracts depending upon different factors. However, no systematic estimate of population size in Nepal is available.

Physical Characteristics

The animal is black in colour with a compact body, thick coarse long hair and a long tail reaching to below hock. The face is broad and flattened with an upwardly curved snout. The ears are large and heart shaped resembling those of an elephant. The hindquarters are heavier and rumps are drooping (Figures 3 and 4). The scrotum loosely hangs from the body (Figure 5).

Behaviour

The breed is highly docile and amenable to any form of management. Their docility is evident from their adaptation to tethered management (Figure 6). Sows show strong mothering abilities. Stampede death of piglets during nursing is negligible as sows always lie down very carefully. Intra- and inter-sex agonistic interactions are minimal. This makes group management much easier.

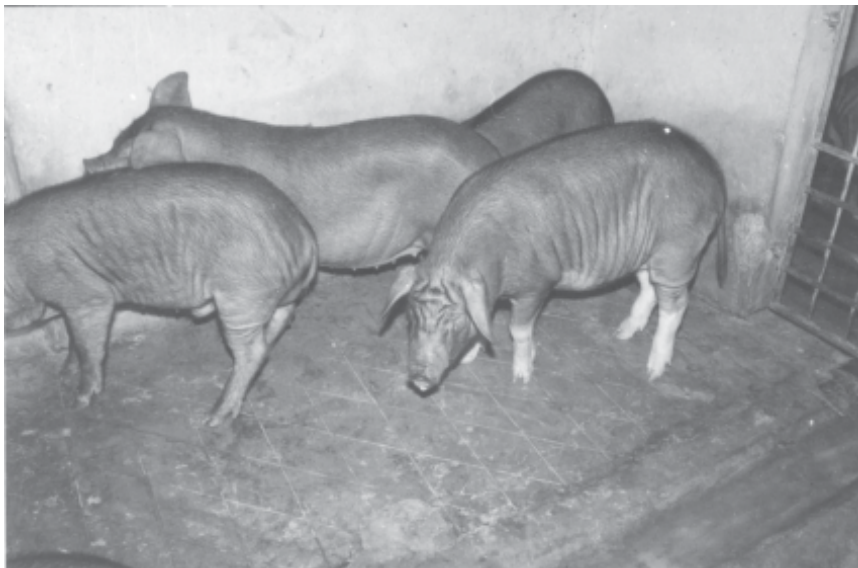


Figure 3. Ghoongroo gilt

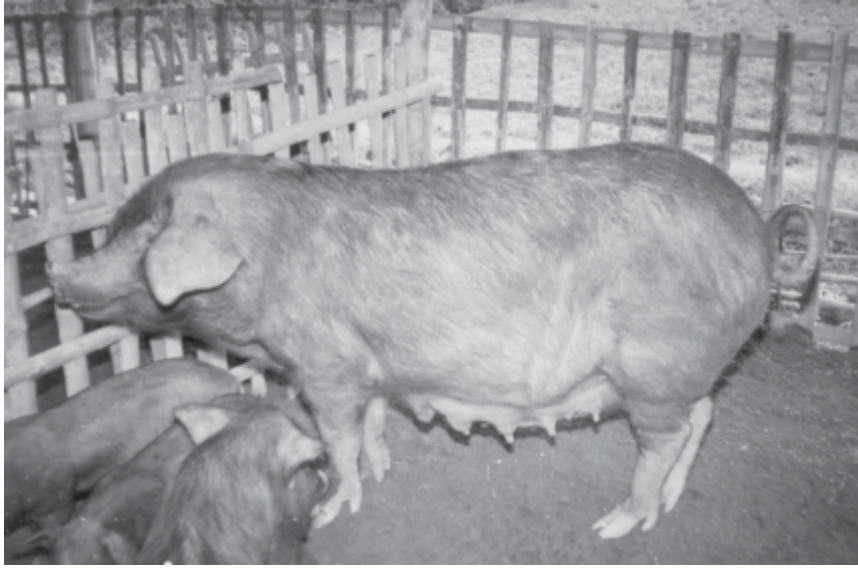


Figure 4. Ghongroo sow



Figure 5. Ghongroo boar.

Production Performance

The production performance of Ghongroo pigs is of special interest. Present reporting is based on information collected from farmers' herds maintained on a low to medium plane of nutrition. Average litter size at birth is

11.92 ± 0.06 and litter size of up to eighteen is not uncommon. Body weights at birth, five months and one year of age are 1.08 ± 0.22 , 38.91 ± 1.49 and 106.3 ± 0.31 kg respectively ($n=80$) irrespective of sex. The breed attains puberty at seven months of age. Gestation length, farrowing interval and service period



Figure 6. Ghoongroo pig under tethered management.

are found to be 109.1 ± 0.04 , 175.7 ± 1.12 and 68.4 ± 0.31 days respectively.

Survivability

The Ghoongroo, being a local breed, evolved in response to their natural environment, and exhibit a strong adaptation to it. Adult animals hardly require any climatic protection except when constant rain persists over several days. They are capable of deriving necessary nutrition from locally available feed resources. The incidence of piglet anaemia is very low, even when they are not given any concentrated feed. Pre-weaning mortality at farmers' houses was estimated as 11.8 %. Though the breed exhibits good resistance to different diseases, they remain susceptible to swine fever.

Conservation Needs

The unique germ-plasm is under constant threat due to indiscriminate breeding with

nondescript varieties. Slackness in the domestic market often leads to a reduction in population size. No effort has been made so far either to improve the genetic merit of the breed or to guide the farmers towards an efficient production system. Most significantly, the breed has the potential to replace the exotic breeds from temperate zones used for improved pig production programs. Detailed characterisation of the breed including DNA profiling and estimates of genetic distance are needed immediately to establish the distinctiveness of the breed. The breed is under detailed study with the establishment of experimental herds in different environmental locations.

List of References

Macdonald, D. (Ed). 2001. The Encyclopaedia of Mammals. Oxford University Press, UK, pp. 484