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## Physical characteristics of indigenous pig of Jharkhand

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### Abstract

Raising pigs is one of the most important assignments for rural poverty farmers and other economically marginalized groups of people. Due to the provision of insurance for the disenfranchised and socially vulnerable, it directly affects socioeconomic standing. Information about the physical traits of native pigs was gathered from Ranchi, Dumka, and Simdega districts in the state of Jharkhand. Black, slightly concave snout profile, full hoof placement, concave top line, 70.59% small erect, 92.04% vertical ear orientation, 90.6% straight tail shape, and 49.25% short bristle size were the average physical traits of Jharkhand's indigenous pigs.

**Keywords:** Physical characteristics, Jharkhand, indigenous pig, management systems

### Introduction

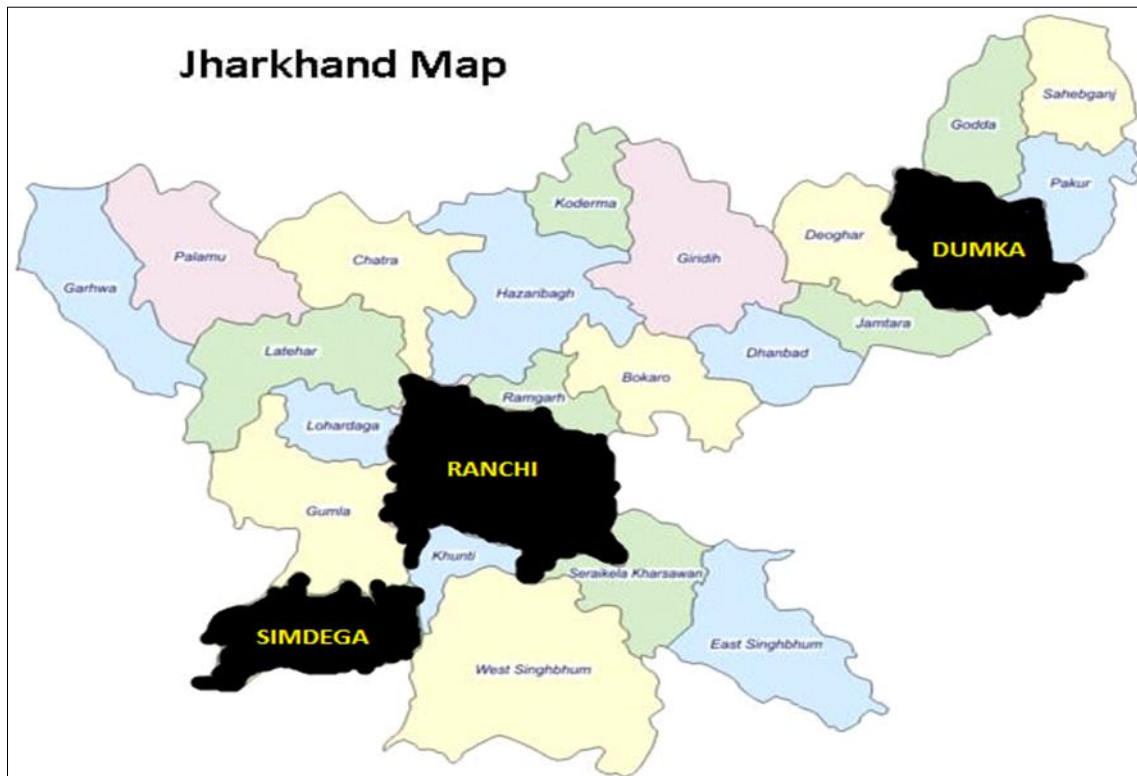
Jharkhand is a hilly state in eastern India. The latitude of Jharkhand, India is 23.344 and the longitude is 85.2960 (Figure 1). The pig populations are distributed throughout the state and the topography is undulating.

Bihar to the north, Uttar Pradesh to the northwest, Chhattisgarh to the west, Odisha to the south, and West Bengal to the east form the state's borders. It covers an area of 79,710 km<sup>2</sup> (30,778 square miles). It is the 15<sup>th</sup> biggest state in terms of land area and the 14<sup>th</sup> largest in terms of people. The state's official language is Hindi. Ranchi is its capital, and Dumka is its sub-capital. The state is famed for its waterfalls, hills, and holy locations, including Baidyanath Dham, Parasnath, and Rajrappa. The land that was formerly part of Bihar was carved off of the state in 2000. Jharkhand struggles from what is frequently referred to as a resource curse; it accounts for more than 40% of India's natural riches, yet 39.1% of its population lives in poverty, and 19.6% of children under the age of five are malnourished. Jharkhand, like its neighboring state of Chhattisgarh, is predominantly rural, with cities housing around 24% of the population. Jharkhand is one of the top states in terms of economic growth when compared to neighboring states. The state's GSDP growth rate in 2017-18 was 10.22%. Jharkhand's climate ranges from humid subtropical in the north to tropical wet and dry in the southeast. Summer, rainy season, autumn, winter, and spring are the four primary seasons. Summer lasts from the middle of April until the middle of June. The warmest month, May, with daily high temperatures of approximately 37 °C (98 °F) and low temperatures of around 25 °C (77 °F). From mid-June to October, the southwest monsoon produces almost all of the state's annual rainfall, which ranges from approximately 40 inches (1,000 mm) in the west-central region of the state to more than 60 inches (1,500 mm) in the southwest. In July and August, over half of the yearly precipitation falls. From November until February, the winter season lasts. In December, temperatures in Ranchi typically range from approximately 10 °C (50 °F) to around 24 °C (75 °F). The spring season lasts from the middle of February until the middle of April.

Pig raising, on the other hand, is nearly totally in the hands of impoverished people, primarily tribal people with little means who continue to use traditional techniques of upbringing. Domestic pigs in this area are thought to have descended from the wild pig *Sus scrofa*. Physical differences across subgroups are minimal, and they are sometimes referred to as "local pigs" or "desi pigs."

In the state of Jharkhand, a good pig genetic resource with clearly improved productivity and reproduction traits has been found.

Farmers, academics, planners, and development professionals refer to this as indigenous/desi pig.



**Fig 1:** Distribution of Indigenous pigs throughout the Jharkhand state

There isn't any documentation on the physical attributes of the local Jharkhand pig. As a result, the current study was carried out to investigate the physical characteristics of the Jharkhand native pig.

**Materials and Methods**

The present study was conducted on data about 274 adult local pigs maintained at District Ranchi, Dumka, and Simdega of Jharkhand state. Mean values for physical were estimated.

**Results and Discussion**

**Physical characteristics**

The animals were black with a slightly concave snout profile, (Figure 2, 3). The ears were erect (Figure 4.), with full hoof placement, (Figure 7.) concave top line small erect, vertical ear orientation, straight tail shape (Figure 5.), and short bristle size.



**Fig 3:** Slightly concave snout profile



**Fig 2:** Indigenous pig with black coat color



**Fig 4:** Erect ears





**Fig 5:** Straight tail



**Fig 6:** Long bristle size



**Fig 7:** Full hoof placement

**Table 1:** Physical characters of local pigs of Ranchi, Dumka, and Simdega district of Jharkhand

Particulars	Characters	Ranchi (78)	Dumka (77)	Simdega (119)	Overall (%) (n=274)	X <sup>2</sup>
Coat colour	Black (B)	100%	100%	100%	100	
Snout profile	Slightly concave (SC)	100%	100%	100%	100	
Ear shape	Small erect	74.36% (58)	72.72% (56)	64.70% (42)	70.59	40.2**
	Medium Erect	25.64% (20)	27.28% (21)	35.30% (77)	29.41	
Ear orientation	Vertical (V)	94.87% (74)	92.20% (71)	89.07% (106)	92.04	3.86
	Horizontal (H)	3.84% (3)	2.60% (2)	5.04% (6)	3.83	
	Dropping (D)	1.29% (1)	5.20% (4)	5.89% (7)	4.13	
Tail shape	Straight (S)	87.17% (68)	92.20% (71)	92.43% (110)	90.6	1.80
	Curled (C)	12.83% (10)	7.80% (6)	7.57% (9)	9.4	
Bristle size	Short (S)	52.56 (41)	50.64 (39)	44.53 (53)	49.25	2.65
	Medium (M)	37.17 (29)	42.85 (33)	47.05 (56)	42.35	
	Long (L)	10.25 (8)	6.49 (5)	8.40 (10)	8.38	
Hoof placement	Full(F)	100%	100%	100%	100	
Topline	Concave (C)	100%	100%	100%	100%	

In parentheses indicate no. of pigs,  $p \leq 0.01$  (\*\*),  $p \leq 0.05$  (\*)

Males were hostile, while sows were excellent mothers. Nesting behavior was typical in village sows prior to farrowing, and after farrowing they were extremely violent. The current investigation discovered that the coat color of all Ranchi, Dumka, and Simdega District pigs was black. The current findings were similar to several of the features seen in local pigs by researchers (Zaman *et al.* 2013; Khargharia *et al.*, 2022) [7, 1].

The snout profile of all the local pigs of Ranchi, Dumka, and Simdega district were observed to be slightly concave (100%). Yaetsu *et al.* (1987) [6] conducted experiments on local pigs in multiple regions of Bangladesh and concluded that native pigs had a straight face, a pointed nose, and upright ears.

The study showed that the ear shape of local pigs of Ranchi, Dumka, and Simdega districts was observed small erect (74.35%), (72.72%), (64.70%) and medium erect (25.64%), (27.28%) and (35.30%). The ear orientation of the local pigs was vertical (94.87%), (92.20%), (89.07%) horizontal (3.84%) (2.59%), (5.04%) and dropping ears (1.28%), (5.19%), (5.88%) respectively. Subalini *et al.* (2010) [5] reported that the village pigs could be found with drooping ears as well white the majority (77%) had erect ears.

The local pigs of Ranchi, Dumka, and Simdega had tail shapes as straight (87.17%), (92.20%), (92.43%) and curled tails (12.83%), (7.80%), (7.57%) respectively. According to Ritchil *et al.* (2013) [2], narrow-straight as well as curved tails were observed in indigenous pigs. He also stated that 98.5%

of the pigs had narrow-straight tails and 1.5% had curled tails that were typically thin and displayed an upward curve creating one circle.

The bristle size of most of the local pigs of Ranchi, Dumka, and Simdega Districts were observed to be short (52.56%), (50.64%), (44.53%) followed by medium (37.17%), (42.85%), (47.05%) and long (10.2%), (6.49%), (8.40%) respectively. Similarly, Sahoo *et al.* (2012) [3] reported that the bristle length of Niang Megha pig (50-100 g/adult of about one year of age) varies from 5-10 cms and the diameter varies from 20-24 micrograms.

The study showed that the hoof placement of all the local pigs of Ranchi, Dumka, and Simdega Districts was observed to be fully placed and the top line of all the local pigs of Ranchi, Dumka, and Simdega districts was observed to be concave. Sangli *et al.* (2017) [4] studied the different districts of Tamil Nadu to evaluate the phenotypic attributes of indigenous pigs for the first time. He found that the top line was concave (100%) and hoof placement was full in all the animals surveyed.

### Conclusion

Local pigs in Jharkhand have distinct physical and morphological traits that must be recorded in order for them to continue to exist. Farmers in rural Jharkhand have long reared native pigs with little or low input, resulting in high mortality, low productivity, and reproductive performance. In this case, encouraging raising under a semi-intensive management style will boost development and reproductive success.

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