

Andaman wild pig (*Sus scrofa andamanensis*): A preliminary report on phenotypic and haematological characteristics

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Abstract

The Andaman wild pig (*Sus scrofa andamanensis*) is found in the Jarawa reserve forest area of Andaman and Nicobar Islands. They are hunted by the primitive Jarawa tribes and are their main source of protein. The aim of the present study was to understand phenotypic and haematological characteristics of Andaman wild pig. The RBC concentration, Packed Cell Volume and Haemoglobin concentration in Andaman wild pig were found very high.

Introduction

The Andaman & Nicobar Islands are a group of 572 big and small Islands & Islets in the South eastern part of Bay of Bengal. Pigs constitute 27.26 % of the total livestock of Andaman and Nicobar Islands and mostly reared by the tribes and native people of Andaman and Nicobar Islands (Kundu *et al.* 2010). There are four different genetic groups of pigs available in these Islands- Andaman wild pig, Nicobari pig, Andaman desi pig and pure and cross breeds of Large White Yorkshire. The Andaman wild pig is a feral population found in Jarawa reserve forest area of Andaman and Nicobar Islands. Presently, this pig comes under schedule I Part I of the Wildlife (Protection) Act, 1972. In the present study, phenotypic and haematological characteristics of an Andaman wild pig were investigated.

Materials and methods

All the present experiments comply with all relevant institutional and national animal welfare guidelines and policies. The Andaman wild pig (one no.) was maintained in mini zoo of Andaman and Nicobar Islands. The Andaman wild pig is protected



Fig 1: Andaman Wild Pig

under Wildlife Act 1972 and therefore official permission from the Department of Environment and forest, A & N Administration was obtained to record phenotypic characters and blood sample collection from the Andaman wild pig.

The phenotypic measurements were taken by a measuring tape. The animal was restrained properly and measurement of body length, body height and different body parts (neck, ear, snout, hoof, tail, testicles, abdomen and chest) was recorded. Body weight was deduced from girth weight.

For haematological analysis, 10 ml blood was collected *via* external jugular vein in a collection tube containing anticoagulant EDTA (2 mg EDTA/ml of blood).

Haematological parameters which consist of mainly three components; erythrocyte, leukocyte and platelet were

measured. The blood parameters include 6 erythrocyte traits (Red Blood Cell Concentration (RBC in $10^6/\mu\text{l}$), Haemoglobin (Hgb in g/dl), Packed Cell Volume (PCV in %), Mean Corpuscular Volume (MCV in fl), Mean Corpuscular Haemoglobin (MCH in pg) and Mean Corpuscular Haemoglobin Concentration (MCHC in g/dl)), 7 leukocyte traits (White Blood Cell Concentration (WBC in $10^3/\mu\text{l}$), Lymphocyte percentage (Lym%), Monocyte Percentage (Mon%), Neutrophil percentage (Neu%), Eosinophil percentage (Eos%), Basophil percentage (Bas%) and ratio of Neutrophil and Lymphocyte (N:L)) and 4 platelet traits (Blood Platelet count (PLT in $10^3/\mu\text{l}$), Mean Platelet Volume (MPV in fl), Platelet Distribution Width (PDW), Plateletocrit (Pct in %). All these

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Table 1: Phenotypic characteristics of an Andaman wild pig (n=1)

Parameters (in inches)	
Sex	Male
Castrated/Uncastrated	Uncastrated
Body length (From shoulder to base of tail)	23
Body height at shoulder level	20
Neck width	15.5
Ear length	3
Ear width	3
Snout width	4
Leg length	9
Hoof circumference	2.5
Tail length	4.0
Abdomen width	20.5
Chest width	21.5
Testis length	2.5
Testis width	2.0
Body weight based on chest girth	16 kg

Table 2. Haematological parameters of an Andaman Wild Pig

Erythrocytic Parameters	
RBC ($10^6/\mu\text{l}$)	9.72
MCV (fl)	63.1
PCV (%)	61.3
MCH (pg)	17.77
MCHC (g/dl)	28.17
Hgb (g/dl)	17.27
Leucocytic Parameters	
WBC ($10^3/\mu\text{l}$)	35.12
Lym%	62.80
Mon%	8.37
Neu%	4.80
Eos%	21.37
Bas%	0.70
Thrombocytic Parameters	
PLT ($10^3/\mu\text{l}$)	696.00
MPV (fl)	6.83
Pct (%)	0.43
PDW	11.90

haematological parameters were measured by a Cell Counter Analyzer MS9-5V (Melet Schloesing Laboratories).

Results

The Andaman Wild Pig was measured to have a body height of 20 inch at shoulder level and has compact body (Fig 1). The pig was very active, alert and a fast runner. The data on phenotypic characteristics are given in Table 1.

The haematological parameters of the Andaman wild pig are presented in Table 2. The RBC concentration, PCV and Haemoglobin concentration were found very high.

Discussion and Conclusion

Boden Kloss (1903) observed that the pigs (*Sus scrofa andamanensis*) in Andaman islands appeared were diminutive in stature and the fully grown boar was only 20 inches high at the shoulder. On the contrary, adult wild boar of England is large and can weigh up to 300 kg but more typical weights are around 100 kg for males and 75 kg for females (Pepin *et al.* 1987). Higher values of RBC, Hgb and PCV were also reported in wild boar by Harapin *et al.* (2003) and in wild piglets by Tusek *et al.* (1994). Higher PCV value was also reported in Javan warty pig (*Sus verrucosus*) of Java and Bawean Islands (Semiadi and Nugraha, 2009). Excitement caused by handling and restraint can induce spleen contraction and an increase in PCV by 10% (Brenner and Gurtler, 1981). High value of MCV in wild pigs indicates an enhanced need for oxygen (Tusek *et al.* 1994).

Haematological traits are essential parameters for evaluating the health status of individual animals and herds (Gong *et al.* 2010). The WBC was also found high in Andaman wild pig. The WBC count of Andaman wild pig was higher than that reported in wild boar of Croatia (Harapin *et al.* 2003). Leucocytosis in animals has been attributed to stress (Buckham-Sporer *et al.* 2008) in pigs. The elevations of Hgb, PCV and RBC might be due to physical exertion resulting into hemoconcentration (Delgiudice *et al.* 1990). The PLT count of Andaman wild pig was similar to that of reported in minipigs of Denmark by Olsen *et al.* (2000).

The present preliminary report describes about the physical appearance, phenotypic characters and hematological parameters. These pigs are native to these islands and are well adapted to island ecosystem over the centuries. Extensive survey on population status and studies on characterization should be taken up with effective conservation (*in situ* / *ex situ*) measures to protect this protected breed and scientific breeding methods should be adopted.

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