

Phenotypic Characteristics of the Female Indigenous Zebu Cattle of Sri Lanka

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A total of 426 adult female indigenous Zebu cattle reared at Anamaduwa (n=66), Bandagiriya (n=234) and Kandalama (n=126) in the dry zone of Sri Lanka were selected randomly to study their phenotypic characteristics. Measurements were obtained on body weight; body length and body width at hip, thurls and pin bones; body circumference at the chest, last rib and loin; body height at withers, hip and pin bones; body depth at chine and loin; length and width of face and ears; length of horns and depth of dewlap. Shape of facial region, shape and direction of ears and horns, the coat colour and body markings were also recorded.

Lankan indigenous Zebu cattle were either mono colour (50.6%) or mixed-colour (49.4%). The most common mono colours were brown (25.8%), black (16.7%) and white (6.5). Among mixed coloured animals, two-colour pattern (43.2%) was common. The most prevalent combinations were brown or black with white (26%). Although, the coat colour is one of the breed characteristics in cattle, Zebu cattle indigenous to Sri Lanka appear to be different.

The mean body weight of mature females was 187.1±24 kg (range 115 - 280 kg). The animals at Kandalama were heavier ($P<0.05$) than those in the other two locations. The mean body length was 128.4±8.5 cm. Animals at Anamaduwa had the longest body ($P<0.05$) while those at Kandalama had the shortest. The mean body height at withers, hip and pin bones were 101.1±4.2 cm, 107.3±4.6 cm and 93.6±3.9 cm, respectively. Body height at withers was highest ($P<0.05$) for the animals at Kandalama and was lowest for the animals at Bandagiriya. Body height at wip and pin bones were higher ($P<0.05$) in animals at Kandalama.

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The mean body width at hip, thurls and pin bones were 33.5 ± 2.1 cm, 33.5 ± 1.9 cm and 18.2 ± 1.1 cm, respectively. Body width at hip was higher ($P < 0.05$) in animals at Anamaduwa while body width at thurls was higher ($P < 0.05$) in animals at Kandalama. Body width at pin bones was not different among animals in three locations. Mean body depth at chine and loin were 53.4 ± 3.2 cm and 48.6 ± 3.6 cm, respectively. The mean body depth at chine was not different between locations but the body depth at loin was higher ($P < 0.05$) in animals at Anamaduwa.

The mean body circumference at chine, over the last rib and at loin were 129.2 ± 6.0 cm, 162.5 ± 10.1 cm and 128.2 ± 9.2 cm, respectively. Body circumference at chine and over the last rib were highest ($P < 0.05$) in animals at Kandalama. Body circumference over the last rib was lowest ($P < 0.05$) in animals at Anamaduwa.

The dewlap was moderately prominent and 10.7 ± 2.8 cm deep. It was deeper ($P < 0.05$) in animals at Kandalama. There was no difference between those of Bandagiriya and Kandalama. The hump is not developed in the female.

The mean length of head was 39.6 ± 1.6 cm. It was highest in animals at Anamaduwa and was lowest ($P < 0.05$) in animals at Bandagiriya. The mean width of face was 15.0 ± 1.4 cm. Face was wider ($P < 0.05$) in animals at Anamaduwa while there was no difference between those of Bandagiriya and Kandalama. The ears were "kite" shaped and were held laterally at 90° to the spine. The mean length of ear was 18.1 ± 1.7 cm. It was higher ($P < 0.05$) in animals at Anamaduwa. Mean width of ear was 8.5 ± 1.2 cm and there was no regional variation.

Both horns were prominently present in 61.7% of animals, while in others they were poorly developed or absent. The mean length of horns was 9.3 ± 0.3 cm. The shape of the horns varied from curved (63.5%) to straight (27.4%). When curved, mostly they were directed upward and forward (24.1%) and a majority of straight horns were directed upward (73.2%). Both horns were similar in length, shape and direction in 41.4% of animals. These features of horns cannot be applied to polled animals.

Wide variations in coat colour and other external traits tend to suggest that indigenous Zebu cattle may not be a pure breed and is a heterogenous population, where mixing of different genotypes could have occurred since its arrival from the Indian subcontinent.