

Morphometrical Measurements of Thoroughbred Horses (*Equus caballus*)

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ABSTRACT

The present study was conducted on 10 Thoroughbred (geldings) horses of R & V Unit in Nagpur, Maharashtra. Body weight and five parameters of body measurements were analyzed by using descriptive statistics. The average size were: body weight 404.05 ± 52.02 kg, front cannon circumference 20.08 ± 0.08 cm, cannon circumference at rear leg 22.02 ± 0.48 cm, girth circumference 174.03 ± 2.88 cm, height at wither 155.00 ± 1.70 cm and body length 158.00 ± 1.85 cm respectively. It can be concluded that Indian Thoroughbred horses is almost similar to other Thoroughbred horses raised in other countries.

Key words: Thoroughbred, Gelding horse, Body measurements.

INTRODUCTION

The Thoroughbred horse is a breed of horse that is known for its use in horse racing. Thoroughbred is one of the most easily recognizable horse breeds in the world. Though the word of thoroughbred is generally used to refer to any breed of purebred horse, this word technically refers only to the Thoroughbred. Identifying patterns of equine anatomy for different horse breeds could be helpful in predicting how successful the animals will be in performing the set tasks. Therefore, metric features of the exterior can become a selection tool used with different

horse breeds¹. Body shapes measured objectively could improve selection for growth by enabling the breeder to recognize early-maturing and late-maturing animals of different size.

MATERIALS AND METHODS

The present study was conducted on 10 Thoroughbred (geldings) horses of R & V Unit in Nagpur, Maharashtra. In this study, a total of 10 Thoroughbred (geldings) horses were used for present work. The sampled horses were aged between 7 to 15 years. All traits were recorded from the left side of the horses.

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The recorded body measurements were (a) body length, (b) height at withers, (c) front cannon circumference, (d) cannon circumference at rear leg and (e) girth circumference (Table 1 and Fig. 1). A graduated measuring stick was used for the height measurements, the length and circumference measurements were measured with the help of flexible tape. The all dimensions were recorded in centimeters. Approximate age of the horse was estimate by using dentition formula Dyce *et al.*² and approximate body weight of the horse was estimate according to Carrol and Huntington³.

RESULTS AND DISCUSSION

The average body weight of the horse was 404.05 ± 52.02 kg. The mean values of the five basic measurements are presented in (Table 1). Average body length was recorded as 158.00 ± 1.85 cm. Similar finding were recorded by Vlaeva *et al.*⁴ and Martinson *et al.*⁵. Average height at wither was recorded as 155.00 ± 1.70 cm. Martinson *et al.*⁵ reported that the 157 ± 3 height at withers in

Thoroughbred horses and Thongsri *et al.*⁶ reported that the height at withers 161.54 ± 6.00 cm. in Thoroughbred gelding Horses. The average value of the cannon circumference at front and rear leg was recorded as 20.08 ± 0.08 cm and 22.02 ± 0.48 cm, respectively. Similar observations were made in adult brood mares from Hungary by Bene *et al.*⁷. Yilmaz and Ertugrul⁸ reported that front cannon circumference of the 20.1 ± 0.18 cm in Thoroughbred horses of Turkey. These values were similar to body measurements of in this study.

Average girth circumference was recorded as 174.03 ± 2.88 cm. These findings are similar with the findings of Hacan and Akcapinar⁹ in Turkish Arabian horses and Vlaeva *et al.*⁴ in Thoroughbred sire lines of blacklock and touchstone. However, in this study, girth circumference for horse was lower than 193.3 ± 0.43 cm, reported in Yilmaz and Ertugrul⁸. It can tentatively be concluded that Thoroughbred horses is almost similar to other Thoroughbred horses raised in other countries.

Table 1: Means (cm) with standard error of different morphometric measurement of horse

| Traits | Measurement | Mean \pm SE | Standard deviation |
|----------------------------------|---|-------------------|--------------------|
| Body length | Horizontal distance between Caput humeri and Tuber ischii. | 158.00 ± 1.75 | 5.55 |
| Height at withers | Vertical distance between the highest Point of shoulders (withers) and level surface. | 155.00 ± 1.70 | 5.39 |
| Front cannon circumference | measured at 1/3 of the height of the upper metacarpal bone, at its thinnest point | 20.08 ± 0.44 | 1.40 |
| Cannon circumference at rear leg | measured at 1/3 of the height of the upper metatarsal bone, at the thinnest point | 22.02 ± 0.48 | 1.53 |
| Girth circumference | Peripheral distance around chest just behind shoulders. | 174.03 ± 2.88 | 9.10 |

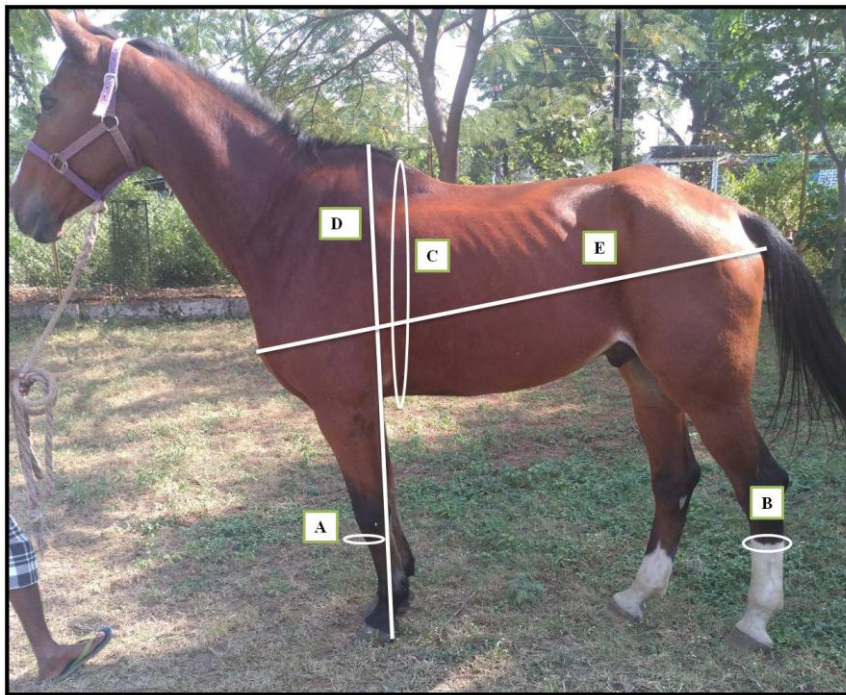


Fig. 1: Morphometrical measurements: A. Front cannon circumference, B. Cannon circumference at rear leg, C. Girth circumference, D. Height at withers, E. Body length

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