

# MORPHOMETRIC STUDY ON THE GOBI RED BULL BACTRIAN CAMEL

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## ABSTRACT

The experimental data comes from randomly selected 40 bull camels in the 2020 Gobi Red Bull Camel Competition organised in North Urad Banner. In this study, 21 kinds of the actual body size parameters were measured in each camel with an average age of 9.28 year and the main statistical body size of bull camels include: body height 176.30 cm, body length 151.40cm, chest circumference 240.03 cm and ankle circumference 23.68 cm, respectively. At the same time, the front view and side view images of bull camel were collected by digital camera, and then the photo data of body size were obtained with Photoshop. The corresponding photo data of body height is 61.52 cm, body length is 52.13 cm, and line chest circumference is 20.48 cm, respectively. Based on on-site measurement scale  $\lambda=2.87$ , the actual body data of bull camel were obtained from the corresponding photo data with relatively small error. The three-dimensional chest circumference of bull camel was  $4\lambda$  times as the line chest circumference on bull camel photo. Many related golden ratio  $\phi$  were found in Bactrian camel body size data ratio. An optimised formula for estimating the weight of bull camel based on photo data  $LI_{PD}$  were derived:  $Y(\text{kg})=-773.57+(2.66+4.06\beta_{ABD}) \lambda LI_{PD} (\text{cm})$ .

**Key words:** Bactrian camel, golden ratio, morphometry, non-contact measurement, photo data