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Prediction of Bodyweight of Cattle by Artificial Neural Networks Using Digital Images

Authors : Yalçın Bozkurt

Abstract : Prediction models were developed for accurate prediction of bodyweight (BW) by using Digital Images of beef cattle body dimensions by Artificial Neural Networks (ANN). For this purpose, the animal data were collected at a private slaughter house and the digital images and the weights of each live animal were taken just before they were slaughtered and the body dimensions such as digital wither height (DJWH), digital body length (DJBL), digital body depth (DJBD), digital hip width (DJHW), digital hip height (DJHH) and digital pin bone length (DJPL) were determined from the images, using the data with 1069 observations for each traits. Then, prediction models were developed by ANN. Digital body measurements were analysed by ANN for body prediction and R2 values of DJBL, DJWH, DJHW, DJBD, DJHH and DJPL were approximately 94.32, 91.31, 80.70, 83.61, 89.45 and 70.56 % respectively. It can be concluded that in management situations where BW cannot be measured it can be predicted accurately by measuring DJBL and DJWH alone or both DJBD and even DJHH and different models may be needed to predict BW in different feeding and environmental conditions and breeds

Keywords : artificial neural networks, bodyweight, cattle, digital body measurements
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