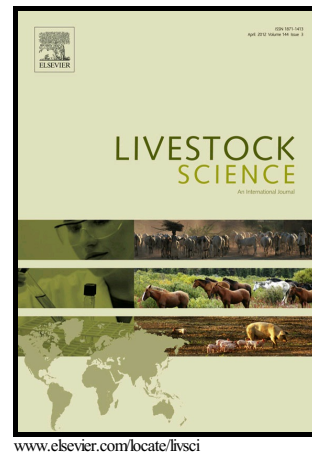


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Predicting water intake of lactating riverine buffaloes under tropical climate

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Abstract

The present investigation was carried out with the aim of determining water requirements of lactating Murrah buffaloes (*Bubalus bubalis*) under summer [August-September, 2014 with maximum ambient temperature (T_{\max}): $32.7 \pm 0.7^{\circ}\text{C}$, relative humidity (RH): $92.4 \pm 1.7\%$] and winter (December, 2014 with T_{\max} : $15.1 \pm 0.9^{\circ}\text{C}$, RH: $98.6 \pm 1.4\%$) seasons of tropical climate. Data on daily drinking water intake (DWI) were collected from 18 lactating Murrah buffaloes during summer [Average body weight (BW): 637 ± 8 kg and milk yield (MY): 9.5 ± 0.2 kg/d] and winter (BW: 626 ± 10 kg and MY: 9.3 ± 0.2 kg/d) seasons, separately. All animals were fed total mixed ration (TMR, 13.4% crude protein and 9.6 MJ/kg metabolisable energy) prepared from green maize forage, compounded concentrate mixture and wheat straw in 55:40:05 proportion (on dry basis). Daily DWI, dry matter (DM) intake (DMI) and MY were recorded along with environmental variables. The results revealed that DWI and total water intake (TWI, L/d) of lactating buffaloes were higher ($P < 0.05$) by 56.7 and 16.2% in summer than winter, whereas feed water intake (FWI, L/d) was higher ($P < 0.05$) by 13.2% in winter than summer. Furthermore, the prediction equation indicated that, for each unit increase in MY, DMI, T_{\max} and DM% of TMR, DWI (L/d) of lactating buffaloes was increased by 0.99, 1.44, 0.56 and 0.80 units, respectively. Whereas, unit increase in FWI (L/kg) caused 0.22 units decrease in DWI of lactating buffaloes. It was concluded that drinking water requirements of lactating Murrah buffaloes were influenced by the type of feed offered, DMI, level of milk production as well as

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