قسم الإنتاج الحيواني

The correlation between Insulin- like growth factor- 1 and Prolactin hormones with body and udder measurements in lactating Egyptian buffaloes.

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ABCTRACT

This work aimed to study the correlation between IGF-1, PRL hormones with body and udder measurements through different stages of lactation in lactating Egyptian buffaloes with different lactation lengths. Ten Egyptian buffaloes (1ST parity) were divided into two groups, at the end of lactation as retrospective study, according to the length of lactation period (LP). The first group (G1) was lactated more than 7 months (225 day) and the second group (G2) was lactated less than 7 months (175 day). IGF-1 and Prolactin hormones were determined in blood plasma 3 times in 1st week, then once a week for the rest of 1st month, followed by biweekly throughout 2nd and 3rd month, finally monthly until the end of experiment. Body and udder measurement were measured biweekly. Buffaloes with long lactation periods had higher plasma IGF-1 and Prolactin, body and udder measurements. A highly correlation ($P \leq 0.05$) was clarified between IGF-1 and body measurements [Shoulder height (SH), Height at hip bone HH] and between body measurements themselves. Plasma IGF-1 in lactating buffaloes was positively but not significant correlated to all udder measurements were significantly higher ($P \leq 0.05$). The plasma IGF-1 (ng/ml) levels through the lactation stages (early, mid and late lactation) were significantly increased steady with the advancement of lactation stages in both groups. Thigh circumference was significantly decreased in both groups from early to mid-lactation by 12.75% and 9.1 % respectively. There were significant differences between groups in all skeletal check points. On the same line, it was found that Prolactin level was higher in longer lactation group (G1), as well as, its level decreased with the progression of lactation in both groups. Positive correlations were found between Prolactin and most of the udder and teat measurements like as UD, UL, TD, TL and RR and negative with the rest. It could be concluded that Egyptian buffalo is distinguished by the fluctuations in lactation length, especially in its first parity. The longer lactation was associated with high levels of IGF-1 and Prolactin along with both body and udder measurements. Finally the ability of buffaloes to prolong the milking season can be predicted by measuring IGF-1 in plasma and Prolactin
Key words: Egyptian buffaloes, IGF-1, PRL, body and udder measurements.