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Studies on some Metabolic disorders in Bovine During Transition Period Under Egyptian Conditions

Thesis presented

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List of abbreviation

The abbreviation	The scientific term
MF	Milk fever
RFM	Retained fetal membrane
NEB	Negative energy balance
EB	Energy balance
BCS	Body condition score
HB	Hemoglobin
WBCs	White blood counts
NEFA	Non esterified fatty acids
SEM	Stander error of mean
DO	Days open
NSPC	Number of services per conception
P4	Progesterone

The transition period is important in terms of its influence on the health and the subsequent reproductive performance. The present study was carried out on 120 crossbreed cows (Egyptian Baladi X Tarentaise; a dual purpose breed) and 60 buffaloes all raised for both the milk and meat production) were used from Veterinary Practice in Beni Suef governorate (***Seds Station***), Animal Production Research Institute (APRI), Egypt. All cows were subjected to full clinical, as well as gynecological examination before being included in the study. This study was based on the study of metabolic disorders during the transition period to follow up the occurrence of metabolic and puerperal disorders in the postpartum period, which show problems such as (milk fever - ketosis, as well as retention of placenta and uterine infection) and follow-up fertility indicators till conception and their relationship to the postpartum period. The animals were examined and the data for each animal were recorded and placed in a table containing body condition and some blood measurements, namely hemoglobin, white blood cell count, blood glucose, calcium, total phosphorous, potassium, sodium, cholesterol, triglycerides, NEFA, progesterone hormone, albumin, protein. As well as, the level of urea in the blood, as indicators of fertility (first postpartum period, number of insemination times, period between birth and fertilization). The cows and buffaloes suffering from milk fever and ketosis had lower Hb concentrations in the partum and postpartum periods. In the present study, the BCS was significantly lower in postpartum period in cows and buffaloes. This study reported significant ($P<0.05$) lower plasma glucose levels in the cows and buffaloes with ketosis at partum, 1st week postpartum and 2nd week postpartum. The lowest levels were recorded at 1st weak postpartum periods in cows (18.63 mg/dl) and buffaloes (16.8 mg/dl).

The present study revealed a strong relation between the occurrence of milk fever and the energy status of the cows during the transition period, the level of the blood parameters related with the energy status significantly changed in milk fever cows in the current study. In this study the serum Ca levels (mg/dl; mean± SEM) in the milk fever cows and buffaloes were significantly decreased at partum and sharp decrease at 1st week postpartum (in cows 5.98±0.05mg/dl and in buffaloes 5.46± 0.19). In the present study the elevated levels of plasma NEFA coupled with low Ca and low glucose were associated with the increased risk of postpartum uterine infections. In this study, ketosis, milk fever, RFM and metritis had negatively affected the fertility parameters in the affected cows and buffaloes than control animals, the days open was

significantly higher (P<0.05) in the RFM than metritis cows compare to the control cows with 107.33 ± 3.08, 99.21 ± 3.99 and 42.10 ± 1.80 days, respectively. Moreover, the required number of services was significantly higher (P<0.05) in RFM than metritis 2.05 ± 0.15 than the metritis cows (1.79 ± 0.16) compare to the control cows (1.2 0± 0.09). Both Metritis and RFM buffalo-cows was significantly (P<0.05) prolonged the duration to 1st estrus (d; mean± SEM) with recorded values of 81.20± 7.27 and 81.80± 4.98 in the metritis and RFMs buffalos, respectively. And the days open was significantly higher (P<0.05) in the RFMs and metritis buffaloes compare to the control buffaloes with 110.0 ± 5.23, 105.0± 5.57and 46.50± 3.36 days, respectively. Moreover, the required number of services was significantly higher (P<0.05) in RFMs (2.40± 0.27) and in metritis buffaloes (2.10± 0.23) compare to the control buffaloes (1.30± 0.15). This study revealed early identification of measures associated with disorders (such as milk fever, ketosis, and puerperal metritis, as well as RFMs) to avoid possible productive and reproductive losses.