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Oxidative Status and Some Serum Macro Minerals during Estrus, Anestrous and Repeat Breeding in Cholistani Cattle

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Abstract : The present study was conducted to determine the macro mineral profile and biomarkers of oxidative stress in Cholistani cattle kept at a public farm and various villages in district Bahawalpur. For this purpose 90 blood samples were collected each from estrual, anestrous and repeat breeding cattle having different age and lactation number. Reproductive tract examination of all the cattle was carried out to determine the reproductive status. Blood samples without EDTA were collected for serum separation at day of estrus (normal cyclic), repeat breeder and anestrous cows. The serum calcium levels were significantly decreased ($P<0.05$) in anestrous (7.31±0.02 mg/dl) cattle as compared to estrus. However, these values were non-significantly different between repeat breeder and cattle having estrus phase. The concentrations of serum phosphorus were significantly higher ($P<0.01$) in normal estrual (4.99±0.08 mg/dl) as compared torepeat breeder (3.90±0.06 mg/dl) and anestrous (3.82±0.04 mg/dl) Cholistani cattle. Mean serum MDA (nmol/ml) levels of repeat breeder (2.68±0.18) and anestrous (2.54±0.22) were significantly($P<0.01$) higher than the estrous (1.71±0.03) cattle. Moreover, the serum nitric oxide levels(µmol/L) were also increased significantly ($P<0.01$) in repeat breeder(58.28±4.01)and anestrous (61.40±9.40) than the normalestrous (31.67±6.71) cattle. The ratio of Ca: P in normal cyclic animals was lower (1.73:1) as compared to the anestrous animals (1.92:1). It can be concluded from the present study that the level of Ca: P should also be near to 1.5:1 for better reproductive performance.

Keywords : anestrus, cholistani cattle, minerals, oxidative stress, repeat breeder
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