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STUDIES ON SELENIUM STATUS OF SUCKLING BUFFALO CALVES: I- EFFECT OF SELENIUM AND/OR VITAMIN E ADMINISTRATION ON GROWTH PERFORMANCE, PLASMA SELENIUM CONCENTRATIONS, ENZYME ACTIVITIES AND THE PREVENTION OF WHITE MUSCLE DISEASE

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ABSTRACT

Thirty two newborn buffalo calves with an average live body weight of 40 kg were divided into four experimental groups: control group, without any treatment; selenium group, was injected with 5 mg selenium (Se)/head biweekly; vitamin E group, supplemented with 2000 IU of vitamin E weekly in milk and Se+E group, treated with both Se and vitamin E. All calves were fed whole milk, concentrate starter and berseem. Blood samples were collected from jugular vein of calves at 1, 3, 5, 9 and 13 weeks of age. The experiment continued until weaning calves at 105 days of age. The average daily gains were improved nonsignificantly by 6.4, 14.5 and 8.1% for Se, vitamin E and Se+E groups, respectively compared with control. Also, the respective treatments improved feed conversion by 17.99, 17.45 and 18.83%. Plasma Se concentrations of calves injected with Se or Se+E were significantly (P<0.01) higher than those treated with vitamin E or control group (32.9, 31.1 vs. 19.6, 18.7 ng/ml). Plasma creatine phosphokinase (CPK) and glutamic oxaloacetic transaminase (GOT) activities of the control group were significantly (P<0.05) higher than those of the treated groups. Lactic dehydrogenase (LDH) activity was fluctuated among groups. The hemoglobin, hematocrit, total protein, albumin and globulin levels were unaffected significantly by treatments. No clinical signs of white muscle disease appeared on any experimental animals.

Keywords: *Sukling, Vitamin E, Selenium, growth, while muscle disease, buffalo*