

Effect of vitamin E and selenium supplementation on lactation performance and blood parameters of Holstein cows during plum rain season ⁽¹⁾

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Abstract

The purpose of this study was to evaluate the effects of dietary supplementation of vitamin E and selenium on lactation performance and blood parameters response of Holstein lactating cows during the plum rain season (the East Asian rainy season, April and May). A complete randomized design with 10 days covariate adjustment was adopted. A total of 24 Holstein lactating cows were assigned into two groups according to their body weight, milk yield, parity and days in milk. Cows received diets containing 0 (control) and 500 IU vitamin E and 8 mg Selenium (head/day) for 20 days. The average temperature-humidity index (THI) was 78.0. Results showed that it had trend to increase dry matter intakes ($P = 0.11$) by adding vitamin E and selenium, but not affect in milk production and milk efficiency (milk/intake). Adding vitamin E and selenium did not significantly affect milk composition, but it had trend to decrease 47.7% milk somatic cell counts. There was a trend of decrease with chromium supplementation, compared with control in blood urea nitrogen ($P = 0.15$), phosphate concentrations ($P = 0.11$) and glutamate-pyruvate transaminase ($P = 0.18$), and it significantly decreased creatine phosphokinase ($P = 0.04$), but blood glucose, total protein, albumin, globulin, calcium concentrations, glutamic oxaloacetic transaminase, alkaline phosphatase, and lactate dehydrogenase enzyme activities were not significantly affected by adding vitamin E and selenium. In conclusion, adding vitamin E and selenium to the diet of lactating cows had a tendency to relieve stress during the plum rain season.

Key words: Holstein lactating cows, Milking performance, Selenium, Vitamin E.

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