DETECTION OF BLOOD UREA NITROGEN AND PROGESTERONE SERUM CONCENTRATION IN DAIRY COW WITH UNBALANCED MILK YIELD AND CALVING INTERVAL

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ABSTRACT

The objective of this study was to identify the levels of Blood Urea Nitrogen (BUN) and its relation to the reproductive efficiency and progesterone serum concentration in the lactating Friesian Holstein dairy cattle. Data were obtained by stratified random sampling from population to get 18 dairy cows to be divided into three groups. The first, second, and third groups each with milk yield of less than 17, between 17-21, and over 21 liters, and with Calving Interval of less than 365, between 365-450 and more than 450 days. Blood sample was collected from coccygeal vein at the time of dairy cow insemination (D0), seventh day (D+7) and 22 (D+22) thereafter. BUN level assay was done by Berthelot method, while the progesterone concentration by ELISA method. Data analysis showed no significant difference ($p>0.05$) on the observed parameters. Regrouping data was done for further analysis of BUN, progesterone, and pregnancy correlation. Regrouping was performed on the basis of combination critera of BUN concentration (BUN ≥18 and BUN <18 mg/dL) and per rectal examination results (pregnant and non-pregnant) into three new groups namely G1 (BUN concentration <18 mg/dL; pregnant) G2 (BUN <18 mg/dL; not pregnant), G3 (BUN ≥18 mg/dL; not pregnant). The result of statiscical test showed that the highest concentration of BUN was found in G3 and was signifiantly different ($p<0.05$) with G1 and G2. In this study, there was a pattern of increasing progesterone concentration in G1 (BUN <18 mg/dL; pregnant) of D0, D+7, and D+22. In G2 (BUN <18 mg/dL; not pregnant), the progesterone concentration increased from D0 to D+7 and decreased again at D+22, whereas the progesterone concentration in G3 (BUN ≥18 mg/dL; not pregnant) had similar pattern with G1, ie gradually increasing from D0, D+7, and D+22 although not significantly different ($p>0.05$). This study concluded that concentration of BUN does not directly affected by the amount of milk production, does not extend Calving Interval rate, and BUN concenration ≥18 mg/dL affected to increases progesterone concentration in the estrous cycle (D+22) on dairy cow.

Keywords: Reproductive efficiency, Progesterone, BUN, milk production