

STUDI KONSENTRASI KALSIUM, FOSFOR, DAN MAGNESIUM DALAM SUSU SAPI PERAH PERANAKAN FRIESIAN HOLSTEIN (PFH) PENDERITA MASTITIS SUBKLINIS

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Intisari

Mastitis adalah peradangan pada kelenjar susu yang sering menyerang sapi perah. Terdapat dua bentuk mastitis yaitu klinis dan subklinis dimana bentuk subklinis memiliki prevalensi yang lebih tinggi. Pada mastitis subklinis tidak ditemukan adanya tanda-tanda klinis pada sapi serta susu yang dihasilkan karenanya perlu pemeriksaan baik di lapangan maupun secara laboratoris untuk peneguhan diagnosa. *California Mastitis Test* (CMT) dan penghitungan jumlah sel somatik (SCC) diperlukan untuk mendeklarasi mastitis subklinis. Beberapa faktor risiko yang dapat berdampak pada mastitis, salah satunya adalah nutrisi. Mineral adalah kelompok nutrisi yang memiliki efek pada fungsi sistem imun sehingga defisiensi terhadap kelompok ini mampu memicu kejadian mastitis. Tujuan dari penelitian ini membandingkan konsentrasi kalsium (Ca), fosfor (P), dan magnesium (Mg) di dalam susu sapi perah sehat dan yang menderita mastitis subklinis. Penelitian ini menggunakan 20 ekor sapi perah laktasi yang dibagi ke dalam empat kelompok yaitu kelompok CMT negatif, CMT +1, CMT +2, dan CMT +3. Semua sapi diperiksa kondisi fisiologis meliputi temperatur rektal, frekuensi pulsus, dan frekuensi respirasi. Sampel susu semua sapi dilakukan pemeriksaan CMT dan penghitungan jumlah sel somatik, serta diukur konsentrasi Ca, P, dan Mg. Hasil penelitian menunjukkan bahwa nilai fisiologis tidak berbeda nyata antara sapi perah sehat dan penderita mastitis subklinis. Konsentrasi Ca dan P di dalam susu sapi penderita mastitis subklinis lebih tinggi sedangkan konsentrasi Mg lebih rendah dibanding susu sapi sehat, tetapi tidak memberikan pengaruh terhadap jumlah sel somatik. Rasio Ca:P di dalam susu sapi mastitis lebih rendah sampai 50% dibanding dengan susu sapi sapi sehat.

Kata kunci: sapi perah, mastitis subklinis, kalsium, fosfor, magnesium

Study of Concentration of Calcium, Phosphorus, and Magnesium in Milk of Friesian Holstein Crossbreed Dairy Cattle in Subclinical Mastitis Condition

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Abstract

Mastitis is an inflammation of the mammary glands that often affects dairy cows. There are two forms of mastitis, which are clinical and subclinical where the subclinical form has a higher prevalence. In subclinical mastitis, there are no clinical signs in cows and the milk they produce, so it needs examination both in the field and in the laboratory to confirm the diagnosis. California Mastitis Test (CMT) and somatic cell count (SCC) count are required to declare subclinical mastitis. Several risk factors that can have an impact on mastitis, one of them is nutrition. Minerals are a group of nutrients that have an effect on the function of the immune system so that a deficiency in this group can trigger mastitis. The purpose of this study was to compare the concentrations of calcium (Ca), phosphorus (P), and magnesium (Mg) in the milk of healthy and subclinical mastitis-suffering cows. This study used 20 lactating cows which were divided into four groups, namely the negative CMT group, CMT +1, CMT +2, and CMT +3. All cows were examined for physiological conditions including rectal temperature, pulse frequency, and respiratory rate. The milk samples of all cows were examined for CMT and counted the number of somatic cells, and the concentrations of Ca, P, and Mg were measured. The results showed that the physiological values were not significantly different between healthy and subclinical mastitis dairy cows. The levels of Ca and P in the milk of cows with mastitis were higher whereas levels of Mg was lower than the milk of healthy cows, but had no effect on the number of somatic cells. The Ca:P ratio in the milk of mastitis cows is up to 50% lower compared to the milk of healthy cows.

Keywords: dairy cow, subclinical mastitis, calcium, phosphorus, magnesium