

SOMATIC CELL COUNT (SCC) PADA SAPI PERAH DAN HUBUNGANNYA DENGAN PRODUKSI SUSU, LEMAK DAN PROTEIN DI BALAI PEMBIBITAN TERNAKUNGGUL (BPTU) SAPI PERAH, BATURRADEN, PURWOKERTO

R.A. Kurniawati

INTISARI

Penelitian ini bertujuan untuk mengetahui hubungan *Somatic Cell Count* (SCC) dengan produksi susu, protein dan lemak pada sapi perah di Balai Pembibitan Ternak Unggul (BPTU) Sapi Perah, Baturraden, Purwokerto. Korelasi antara SCC dengan produksi susu, lemak dan protein dapat dimanfaatkan dalam pelaksanaan seleksi secara tidak langsung. Pada penelitian ini digunakan sapi Friesian Holstein laktasi I, II, III, dan IV. Produksi susu, kadar lemak dan kadar protein diamati pada 6 ekor sapi untuk masing-masing laktasi, dan 5 ekor sapi untuk laktasi IV. Sampel susu diambil pada bulan ke-3, 4 dan 5. Untuk memastikan bahwa sapi tidak menunjukkan gejala mastitis subklinis, dilakukan pengujian menggunakan *California Mastitis Test* (CMT). Data produksi susu satu laktasi diestimasi dengan proporsi produksi, kadar lemak, protein dan SCC berasal dari 3 kali pengambilan sampel yang kemudian dirata-ratakan. Data SCC ditransformasikan ke *Somatic Cell Score* (SCS) = $\log_2 (SCC/100) + 3$. Hasil penelitian menunjukkan rata-rata jumlah SCC antara 26.133,33 sel/ml susu dan 431.200 sel/ml susu. Sebanyak 95 % sampel memenuhi persyaratan karakteristik mutu susu segar untuk di konsumsi. Rata-rata data yang digunakan di BPTU Sapi Perah, Baturraden, Purwokerto menunjukkan produksi tertinggi pada laktasi IV dan produksi terendah pada laktasi I, sedangkan kadar lemak menunjukkan penurunan dari laktasi I ke laktasi berikutnya. Rata-rata kadar protein tertinggi pada laktasi III dan terendah pada laktasi I, hal ini dapat disebabkan oleh faktor umur karena umur mempunyai pengaruh yang signifikan terhadap persentase susu dan komposisi susu. Korelasi antara SCC dengan produksi susu untuk laktasi I, II, III dan IV adalah positif (0,3; 0,4; 0,25; 0,12), antara SCC dengan kadar protein negatif untuk laktasi I, II dan IV kecuali untuk laktasi III (-0,67; -0,46; 0,32; -0,0005). Korelasi antara SCC dengan kadar lemak negatif untuk laktasi I, II dan positif untuk laktasi III dan IV (-0,18; -0,52; 0,22; 0,17). Sedangkan korelasi antara produksi dengan protein dan lemak negatif untuk laktasi I, II, III dan IV. Karena terdapat korelasi positif antara SCC dengan produksi susu maka perlu perhatian bahwa seleksi sapi perah terhadap produksi susu tinggi akan meningkatkan SCC dan indikasi mastitis, sehingga harus diimbangi dengan kontrol manajemen sapi perah yang baik. Pelaksanaan seleksi dengan menggabungkan sifat produksi susu dengan jumlah SCC dalam suatu indek seleksi akan dapat mengatasi hubungan antagonis antara SCC dan sifat produksi susu.

Kata Kunci : Sapi Perah, *Somatic Cell Count*, Produksi Susu, Lemak, Protein, korelasi.

**SOMATIC CELL COUNT (SCC) OF DAIRY CATTLE AND ITS
CORRELATION WITH MILK PRODUCTION, FAT, AND
PROTEIN CONTENT AT "BALAI PEMBIBITAN
TERNAK UNGGUL (BPTU) SAPI PERAH,
BATURRADEN, PURWOKERTO"**

R.A. Kurniawati

ABSTRACT

The study was conducted to investigate the correlations between Somatic Cell Count (SCC) and milk production, fat and protein content of milk of dairy cattle, at Balai Pembibitan Ternak Unggul (BPTU) Sapi Perah, Baturraden, Purwokerto. The correlation between SCC and milk production, percent of fat, and percent protein, could be used as indirect selection. Friesian Holstein dairy cattle at lactation I, II, III, and IV were used in this study. Data of milk production, percent of fat, percent of protein and SCC were obtained from six cows in each lactation except 5 cows for lactation IV. The milk production was obtained from the 3, 4, and 5 month of lactation with no mastitis symptom, subclinically, which were proved by California Mastitis Test (CMT). Milk production per lactation was estimated by the method of proportion. Percent of fat, protein, and SCC were calculated from 3 times sampled. The SCC data were transformed $SCS = \log_2 (SCC/100) + 3$. The results indicated that the average of the SCC was 26,133.33 cell/ml of milk and 431,200 cell/ml of milk. Ninety five percent of the samples indicated that they meet the SCC requirement for good milk consumption. The average of milk production from BPTU Sapi Perah, Baturraden indicated that the highest production was in lactation IV and the lowest was lactation I, while the fat content was decreased as number of lactation progressed. The highest protein percent was in lactation III, and the lowest was in lactation I, which was due to the animal age that significantly influenced the milk composition. The correlations between SCC and milk production of lactating I, II, III and IV were positive (0.3, 0.4, 0.25, 0.12), but between SCC and protein content was negative for lactating I, III and IV, and positive for lactating II (-0.67, -0.46, -0.0005, 0.32). Coefficient correlations between SCC and fat content was negative for lactating I, II, and positive for lactating III and IV (-0.18, -0.52, 0.22, 0.17). The correlation between milk production and protein and fat were negative for lactating I, II, III and IV. Since there were a positive correlation between SCC and milk production attention should be paid as selection for high milk production would increase SCC and incidence of mastitis a good management program is required to balance the situation. Selection using an index that combined milk production and SCC was suggested to overcome the antagonistic relation shift between SCC and milk yield traits.

Key words : Dairy Cattle, Somatic Cell Count, Milk production, Fat, Protein, Correlation.