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Relationship between milk yield and somatic cell count

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The study was carried out on 2591 test day data of 941 Holstein cows. The effects of somatic cell count (SCC) on milk yield were determined by the investigation of daily milk yield and SCC of cows.

Average daily milk yield was 27.67 lt. In terms of lactation parity, average daily milk yields were 21.26 litres for parity 1, 28.25 litres for parity 2 and 33.49 litres for parity 3 (P<0.001). Average daily milk yields with regard to SCC groups were 28.75 litres for group 1 (0-200 000), 27.48 lt for group 2 (200 001-500 000) and 26.78 litres for group 3 (500 001 and higher) (P<0.001). In SCC groups the differences between group 1 and the other groups were significant, while the differences between group 2 and group 3 were not significant. It was concluded in the present study that the increase in SCC resulted in significant decrease in milk yield.

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The evaluation of the effect of somatic cell count on raw milk composition

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Introduction: Somatic cell count (SCC) is an indicator of the quality of milk. There is general agreement on the values of less than 100.000 cells/ml for uninfected cows. A threshold SCC of 200.000 would determine whether a cow is infected with mastitis. Cows with a result of greater than 200.000 are highly likely to be infected on at least one quarter and those greater than 300.000 are infected with significant pathogens.

Milk from mastitic cows may have off-flavors and may undergo deterioration of the milk fat and protein more quickly than milk from healthy cows. The aim of this study was to evaluate the relationships between SCC and some raw milk parameters (total dry matter, fat, protein, lactose and urea nitrogen).

Material and methods: Raw milk samples were collected from Brown Swiss cattle (n=30) in two different dairy companies, in Bandirma District of Balikesir Province of Turkey, in the period between November 2013 to March 2014. Totally 360 (180 in Farm-1 and 180 in Farm-2) raw milk samples divided into two groups, according to the mean levels of SCC in farms (Group-1: low SCC ≤ 107.000 cells/ml and Group-2: high SCC > 107.000 cells/ml in Farm-1, and, Group-1: low SCC ≤ 172.512 cells/ml and Group-2: high SCC > 172.512 cells/ml in Farm-2. All the analysis were performed by Bentley FTS 400 Combi used FTIR technology. Statistical analysis was performed by Excel-2010.

Results: The mean levels of SCC were determined as 41.944 ± 28.184 cells/ml for the first group and 211.358 ± 205.279 cells/ml for the second group in the Farm-1, respectively. In the first group, mean levels of dry matter, fat, protein, lactose and urea nitrogen were determined as 11.89 ± 0.96%, 3.28 ± 0.83%, 2.96 ± 0.29%, 4.81 ± 0.23% and 14.05 ± 5.31%, respectively. In the second group, same parameters were calculated as 11.99 ± 0.97%, 3.3 ± 0.63%, 3.01 ± 0.43%, 4.75 ± 0.39% and 14.86 ± 5.14%, respectively. The mean levels of SCC were determined as 55.117 ± 38.229 cells/ml for the first group and 507.929 ± 429.385 cells/ml for the second group in the Farm-2, respectively. In the first group, mean levels of dry matter, fat, protein, lactose and urea nitrogen were determined as 11.93 ± 1.38%, 3.39 ± 1.21%, 3.02 ± 0.36%, 4.67 ± 0.33% and 10.11 ± 4.05%, respectively. In the second group, same parameters were calculated as 11.97 ± 1.45%, 3.53 ± 1.17%, 3.1 ± 0.49%, 4.58 ± 0.32% and 12.71 ± 5.08%, respectively.

Conclusion: It was concluded that, by the increase of SCC, milk dry matter, milk fat and urea nitrogen contents were determined to be affected, significantly ($p < 0.05$) in Farm-1 (Group-1 : low SCC ≤ 107.000 cells/ml and Group-2 : high SCC > 107.000 cells/ml), while milk lactose, and urea nitrogen contents were determined to be affected, significantly ($p < 0.05$) in Farm-2 (Group-1: low SCC ≤ 172.512 cells/ml and Group-2 : high SCC > 172.512 cells/ml).

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A study on the method validation of LC-MS/MS reference method to determine the amphenicol residues in the samples of feedstuffs

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Introduction: Antibiotic residues in foods produced by animals may be the cause of numerous health hazards in humans. In the European Union and also Turkey, the usage of antibiotics in feedstuffs have been prohibited since January 1st, 2006.

Antibiotic residues in edible animal products are of great concern to regulatory agencies and consumers, so reliable methods for selective and sensitive detection of these residues are necessary to ensure food safety. The