

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

ANTIOXIDANT ACTIVITY OF MILK FROM THE NORTHWESTERN, SOUTHWEST AND CAMPOS GERAIS OF PARANÁ

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The control of the oxidative process in milk depends basically on the balance between the production of free radicals and the presence antioxidants compounds. Antioxidants act by donating or sequestering electrons from free radicals inactivating them or slowing oxidation reactions. Considering the several factors that contribute to milk oxidation, our goal was to evaluate the factors that may be related to the natural antioxidant activity in milk. For this, milk samples were collected in bulk tanks of 97 properties from the northwest, southwest and Campos Gerais of Paraná, and the results were correlated with informations obtained by questionnaires that characterized the production systems. The conjugated dienes (CD) concentration and thiobarbituric acid reactive substances (TBARS), which are indicative of lipid peroxidation, were analyzed to estimate the presence of antioxidants in milk. The results were analyzed using the statistical program SAS 9.4 using the PROC CLUSTER, PROC MIXED and PROC FREQ packages, the averages were compared by the Tukey test at 5% significance. In the analysis of clusters formation as a function of the antioxidant activity in milk, the formation of four clusters was observed. It was possible to observe a significant difference in the TBARS and CD concentration, and cluster 4 was the group with the lowest concentration of lipid peroxidation products with a mean of 22.05 mmol/kg of fat. That is, considering the average of both tests we can suggest that the cluster 4 had a milk with higher concentration of antioxidants or, in other words, that they suffered less oxidation. The results showed that the characteristic of the properties with lower concentration of CD and TBARS are those with a higher frequency of pre and post-dipping procedures, with predominance of Holstein cows, maintenance of the animals in a semi-confinement system, higher frequency of pastures of the genus *Brachiaria* and *Cynodon*, with supply of concentrate, soybean meal, silage, incidence of hoof problems and non metabolic diseases, less frequency of manual milking, feeding exclusively on pasture and supply of mineral salt.

Keywords: Conjugated dienes, TBARS, Lipid peroxidation, Milk Quality

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