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Effect of somatic cell count on physicochemical properties of Shal breed Ewe milk

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Milk is a very complex colloidal dispersion and the quantities of its main components differ tangibly in various races of mammals. All milk contains some levels of somatic cells. When there is a bacterial infection, tissue damage or other inflammatory processes affecting the mammary tissue the number of somatic cell count in milk increases dramatically. This study was conducted to investigate the effect of somatic cell count of ewes' milk from Shal breed on chemical and physicochemical properties of raw milk. Fifty pure-breed 3-year old ewes of Shal breed in their late lactation were randomly selected. In physicochemical properties (pH, Titratable acidity) and chemical composition (fat content, crude protein, lactose) and the content of nitrogen fractions of raw ewes' milk samples were determined in two somatic cell levels (low<500,000 cells/ml and high>500,000 cells/ml). Results showed that increases in somatic cell count significantly improved its pH (P<0/01). Milk fat was also increased as the number of somatic cells increased (P<0/05). Milk protein was also increased by increasing of somatic cell count (P<0/01). But lactose content significantly reduced (P<0/01) and had no tangible effect on the acidity or on nitrogen fraction. The present research showed that the number of somatic cells during milk secretion has a significant relationship with the protein, fat, and lactose content which alter during udder infection. This change in the main components of milk can create different conditions in raw milk both during its production and subsequent processing. Therefore, close attention must be paid to these infections and must say So far no one has reported the effects of somatic cells in the raw milk of this specific breed.

Biography

Mina Nasiri has completed her BSc and MSc in Food Science and Technology in Department of Food Science and Technology, Faculty of Food Science and Technology, Science and Research Branch, Islamic Azad University, Tehran, Iran. She is pursuing her PhD in Food Science and Technology, Department of Food Science and Technology, Islamic Azad University, Tehran, Iran. She is working as Lecturer in Department of Food Science and Technology, Faculty of Agriculture, Takestan Islamic Azad University.

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