

MILK QUALITY AND ITS TECHNOLOGICAL PROPERTIES WITH INTENSIVE PRODUCTION TECHNOLOGY

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ABSTRACT

Innovative technologies are currently widely used in dairy cattle breeding, which make it possible to get more milk from cows, and most importantly – high-quality milk. The purpose of the research is to study milk productivity, milk quality, and its technological properties when used with different methods of preparing cows for milking. The research was conducted based on the Russkaya Niva LLC in the Sarapulsky district (Russia) in the period from 2019 to 2021. The object of research is the first-calf cows of a black-and-white breed. The control group included cows where traditional technologies were used in preparation for milking, a scrubber was used in the experimental group. Milk yield for 305 days of lactation in cows of the experimental group was 6853 kg, which is higher than in the control group by 386 kg or 6.0% ($P \leq 0.95$). The first-calf cows of the experimental group have a high fat and protein content in milk by 0.12% ($P \leq 0.95$) and 0.02%, respectively. Evaluation of the morphological and functional properties of the udder showed that modern methods of preparation had a positive impact. The udder depth in the experimental group was 33 cm, which is 5% more than in the cows of the control group. When using a scrubber, the milking time of one cow is on average 5.8 minutes, which is 1.3 minutes or 22.4% less than in the control group ($P \leq 0.999$). The coefficient of lactation constancy in the experimental group was 88.5%, which is 2% higher than in the first-calf cows of the control group. According to the content of somatic cells, milk obtained using a scrubber is better, because their level was 176.6 thousand/cm³, and 289.4 thousand/cm³ in the control group. Milk of both groups is suitable for the production of fermented milk products, but in the experimental group, yogurt retains moisture better during storage and is thicker. Milk consumption per 1 kg of cottage cheese in the control group is 73.2 liters, which is 2.1 liters higher than milk consumption in the experimental group. Milk consumption was 71.1% in the experimental group.

Keywords: milk productivity, milk composition, technological properties, preparation of cows for milking, scrubber.