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Yield and quality of brine-ripened cheeses, production from the milk of Jersey and Simmental cows

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Research has been conducted in Lusadzor community of Tavoush province in Armenia to determine the processability of milk samples collected from Jersey and Simmental cows for cheese manufacturing. The chemical composition as well as physical–chemical and technological parameters of the milk samples have been analyzed experimentally. In addition, the researchers estimated physical, chemical and organoleptic parameters as well as the yield of the cheese produced from the bulk milk collected from Jersey and Simmental cows. The results of the research proved that the milk samples collected from Jersey and Simmental cows possess the necessary physical–chemical and technological properties and can be used as high-quality raw material for manufacturing brine-ripened (pickled) cheese. The highest content of dry matter, observed in the milk collected from Jersey cows, stemmed from the high contents of fat, protein and minerals. The content of lactose (milk sugar) and physical characteristics (density, freezing temperature) did not vary significantly across the samples. The rennet clots formed in the milk collected from Jersey cows were characterized by higher structural–mechanical parameters and syneresis. Jersey milk possesses the qualitative characteristics that best contribute to high cheese yield, which allows for the most efficient cheese production. Cheese manufactured from Jersey milk is distinguished by less water content, higher fat and protein contents and higher organoleptic indicators, which all together improve the quality of cheese turning it into a highly competitive product.

Table 2 – Cheese-making technology parameters.

Characteristics	Breed of the cows	
	Simmental	Jersey
Bulk milk quantity, kg	12.0	12.0
Fat, %	3.6	4.9
Protein, %	3.2	3.8
Casein, %	2.5	3.0
Milk clotting time, minutes	28	23
Post-pressing weight of the cheese, kg	1490	2165
Post-pressing cheese yield, %	12.42	18.04
Post-ripening weight of the cheese, kg	1427	2086
Post-ripening cheese yield, %	12.27	17.38
Milk consumption per 1 kg of cheese, kg	8.15	5.75
Water content in ripened cheese, %	48.3	47.8
Weight ratio of fat in cheese dry matter, %	47.2	47.0

Recent Publications

1. Zh. Chitchyan. Analysis of milk productivity of femael ancestors of imported Jersey heifers. Bulletin of National Agrarian University of Armenia, Yerevan N1,2015.p.49-52
2. Zh. Chitchyan, A. Grigoryan. Influnee of hipokinesia on carbohydrate metabolism in two-month-old pigs. Agrosince /scientific journal/ 7-8 (683-684), Yerevan, 2015, p. 298-301
3. Zh. Chithcyan. L. Minasyan, A. Simonyan, A. Khechoyan. Age-related changes of milk productivity in Simmental breed cows imported from Austria in conditions of LLC „Agroholding Armenia,,. Bulletin of National Agrarian University of Armenia, Yerevan N 4, 2016. p.33-37
4. Zh. Chithcyan. L. Minasyan, A. Simonyan. Exterior features of cows of different ages simmental cattle under conditions of the farms LLC „Agroholding Armenia,, and fund development „Himnatavush,,. Agrosince / scientific journal/ 1-2, Yerevan, 2017, p. 22- 25
5. Zh. Chitchyan. Characteristics of the the reproductive indicators of the cows of Jersey breed in the conditions of North-Eastern zone of Armenia. /ANAU International Conference, Yerevan 2017, p.371-374/
6. Zh. Chitchyan, L. Minasyan, T.Chitchyan, A. Simonyan. Milk productivity of Brown Swiss cows of domestic reproduction in conditions of "Agroholding Armenia" LLC. /Bulletin of Armenian National Agrarian University, Yerevan N 2, 2018. p.27-30/

Biography

Zhirayr Chitchyan is a Lecturer of the Chair of Animal Husbandry and a Research Scientist in Armenian National Agrarian University (2016-present). He received a Doctor of Philosophy in Agricultural Sciences in Animal Husbandry, Armenian National Agrarian University (2014-2017). He completed Bachelor's Degree in Agricultural Economics, Armenian National Agrarian University (2008-2012) and Master's Degree in The Insurance job in Agri food system, Armenian National Agrarian University (2012-1014). He is Research worker in The Appear project Building Organic Agriculture in Armenia BOAA, responsible for organic animal production in ICARE Armenia (2018-present). He is a Coordinator of training courses within the frames of the program of State Assistance to construction of "smart farms" in the Republic of Armenia (2019-2021). He was the Research Scientist of the project << The research of biological and economic characteristics of imported cattle breeds to the Republic of Armenia>> in Scientific Center of Risk Assessment and Analysis in Food Safety Area SNCO (2016-2018).

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