

## Milk and Dairy Products Consumers Behavior and Preferences in Vojvodina – Republic of Serbia

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### Abstract

Aim of the current research was to evaluate milk and dairy derived consumer's behaviour and preferences in Vojvodina (Central Banat District) from the Republic of Serbia, in order to be able to further formulate advice and strategies to farmers, farm-advisors and policy makers, to help improve the overall farmer's competitiveness and increase the economic returns of dairy enterprises. Data was collected following questionnaire based-interviews, between January and June 2016. There were 76 persons who answered a face-to-face interview, and had to answer to a 15 questions based questionnaire, all respondents were from Vojvodina (Central Banat District), Republic of Serbia. The main five categories of products purchased were pasteurized milk (11.33%), yogurts (23.44%), sour cream (18.75%), butter (10.55%) and cheeses (21.48%). The least dairy derived products categories purchased and consumed were UHT milk (4.30%), refrigerated milk (3.91%), raw milk (5.86%) and frozen milk (0.00%). The most important selection criterions of the surveyed consumers were 'freshness' (21.72%), expiring date (13.64%), taste characteristics (10.10%), price/quality ratio (13.13%) and nutritive value (16.16%). Results of the current study should be taken into consideration by both farmers and dairy factories, in order to possible identify niche markets, in order to add value to the food chain and improve their economic returns by producing and selling products that have among higher demands from consumers.

**Keywords:** consumer preferences, dairy sector, milk, Republic of Serbia.

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### 1. Introduction

The Republic of Serbia economy relies considerably on agricultural production and economic returns of the sector. The share of agriculture in total GDP of the country is of 10.8%, while alongside the entire food processing chain, accounts for approximately 20% of the total GDP [1].

However, the sector is slowly declining, as it is reflected in the last 20 years GDP estimates, from

20.5% in 1995 and 20.8% in 2000 to 12.8% in 2006 [2]. For comparison reasons, the share of milk in GDP of some European Union's countries ranged from 6% in Spain to 32% in Luxembourg [3].

Employment rate in the Serbian dairy sector accounts for 120,000 dairy farm workers, 30,000 dairy plant workers and over 1,000 support service workers [4], in addition, bringing secure incomes to many small family holders in less favored areas, which practice extensive dairy farming, with production being used mainly for own consumption [5].

As a strength point, Serbia has one of the lowest costs of production of milk in the Balkan region,

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due to low prices for grain and food, high pasture quality, climate and relatively low wages. However, average milk production per cow is low, being on average less than 3,000 kg/lactation, with even lower values for the family holdings [6]. Such yields are not comparable or competitive to those in the most of the EU countries (e.g. Sweden 9,000 kg, Austria 7,000 kg), being roughly with 50% lower than the EU average.

One of the weakness of the industry is that the average size of a dairy herd in Serbia (3.5 cows/farm unit), considerably lower than the EU average (roughly 40 cows/farm unit) [7].

Cow milk accounts for roughly 92% of the milk produced in Serbia, also the sheep and goat milk production predominates in some regions. Moreover, farms owning dairy animals are being involved in the processing of milk themselves, producing cheese, cream, etc., in order to meet their own requirements and family needs, while the surpluses are sold on green/farmers markets. With small quantities of raw milk (roughly 1 million litres) are being sold on green markets [8]. Aim of the current research was to evaluate milk and dairy derived consumer's behavior and preferences in Vojvodina (Central Banat District) from the Republic of Serbia, in order to be able to further formulate advice and strategies to farmers, farm-advisors and policy makers, to help improve the overall farmer's competitiveness and increase the economic returns of dairy enterprises.

## 2. Materials and methods

The study was conducted within the frame of the project 'Improving Sustainability, Competitiveness and Quality of Milk in the Romanian-Republic of Serbia Cross-Border Region', project MIS ETC number 1233, supported by European Union through a grant of the Romania – Republic of Serbia IPA Cross-Border Cooperation Programme.

Data was collected following questionnaire based-interviews, between January and June 2016. There were 76 persons who answered a face-to-face interview, and had to answer to a 15 questions based questionnaire, all respondents were from Vojvodina (Central Banat District), Republic of Serbia.

Out of the total respondents, 52.63% were women and 47.37% men, while 50.65% were living in urban areas and 49.35% in rural areas. From the

76 respondents who agreed on taking up the survey, 92.1% were milk and dairy derived products consumers, while 7.9% replied that do not consume milk or dairy products. Out of the persons who participated in the survey, 15.79% graduated the elementary school (mainly farmers), 57.89% secondary studies (high school) and 26.32% had a university degree or were students at the moment of the interview. In the questionnaires, personal data was evaluated, such as: age, sex, access to media (e.g. television, written press, and internet), place of living (urban/rural), average monthly income, and current occupation.

In order to evaluate the milk and dairy derived products consumer's behavior, a set of 8 questions were given, as follows: do you consume milk and milk derived products?; which dairy products you are consuming?; which type of milk do you prefer?; how often do you consume milk?; how often do you consume milk derived products?; which are the reasons for consuming milk and milk products?; which are the main selection criteria when purchasing milk/milk products?; and where do you buy your milk and dairy products?. For all questions, multiple answers allowed. To ensure that as much as possible the respondents are able to formulate their answers, the questionnaire and the interviews were in Serbian.

## 3. Results and discussion

Data regarding general dairy products consumed by the respondents from Central Banat district and their preferences as consumers of milk and dairy derived products are shown in Table 1. The main five categories of products purchased were pasteurized milk (11.33%), yogurts (23.44%), sour cream (18.75%), butter (10.55%) and cheeses (21.48%). The least dairy derived products categories purchased and consumed were UHT milk (4.30%), refrigerated milk (3.91%), raw milk (5.86%) and frozen milk (0.00%). Results of the current study should be taken into consideration by both farmers and dairy factories, in order to possible identify niche markets, in order to add value to the food chain and improve their economic returns by producing and selling products that have among higher demands from consumers.

Main selection criteria for milk and derived dairy products are being presented in Table 2. Thus, the most important selection criteria of the surveyed consumers were ‘freshness’ (21.72%), expiring date (13.64%), taste characteristics (10.10%), price/quality ratio (13.13%) and nutritive value (16.16%). While, the least important aspects when purchasing dairy products seemed to be presentation/label (0.00%), price (7.58%), general aspect of the product (1.52%), smell (7.58%) and origin (8.59%).

Regarding the reason for consuming milk and derived products, 29.58% of the respondents perceived that ‘it is a main product in my diet’, 67.61% answered ‘it is a healthier product than other animal derived foods (e.g. meat, eggs)’ and 2.82% answered ‘it was recommended by my doctor as curative treatment’.

Out of the respondents, 82.67% preferred cow milk and derived products, 12.00% sheep milk and

derived products, 5.33% goat milk and derived products and 0.00% buffalo milk and derived products (Figure 1).

As for the frequency in consuming milk, 56.06% of the respondents seem to consume milk daily, 19.70% on a weekly basis, 18.18% twice a week and 6.60% monthly (Figure 2). While for the dairy derived products, most (64.18%) of the respondents consume daily, 11.94% weekly, 22.39% twice per week and 1.49% monthly (Figure 3).

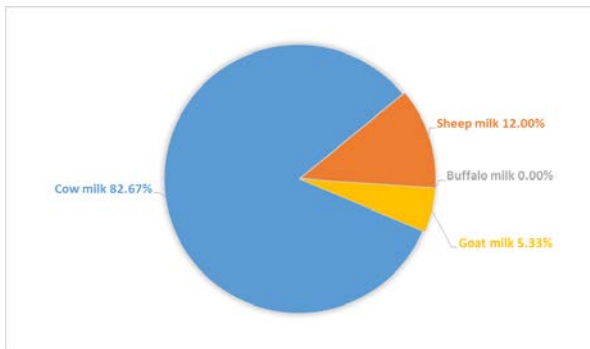
Being asked where they purchase their milk and dairy derived products from, 27.50% of the subjects answered that from private producers, 33.75% from commercial centres (super-markets), 36.25% from groceries stores (local, small businesses) and 2.50% other sources (neighbors and local semi-subsistence producers).

**Table 1.** Dairy products categories and consumers preferences in Central Banat district

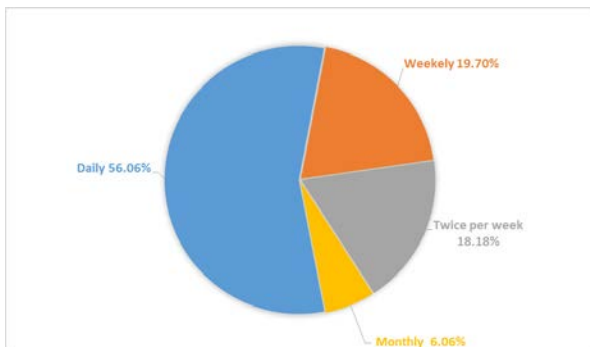
Category	No of respondents	% of respondents
Raw fresh milk	15	5.86
Pasteurized milk	29	11.33
UHT milk	11	4.30
Refrigerated milk	10	3.91
Frozen milk	0	0.00
Yogurts	60	23.44
Sour cream	48	18.75
Butter	27	10.55
Cheeses	55	21.48
Other	1	0.39

**Table 2.** Selection criteria for purchasing milk and dairy derived products in Central Banat district

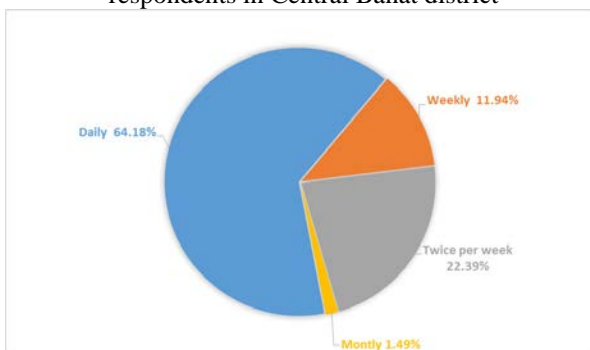
Selection criterions	No of respondents	% of respondents
Freshness	43	21.72
General aspect	3	1.52
Expiring date	27	13.64
Smell	15	7.58
Taste characteristics	20	10.10
Origin	17	8.59
Quality/price ratio	26	13.13
Price	15	7.58
Nutritive value	32	16.16
Presentation	0	0
Others	0	0



**Figure 1.** Species preferences of consumers for milk and dairy derived products in Central Banat district



**Figure 2.** Frequency of consuming milk among respondents in Central Banat district



**Figure 3.** Frequency of consuming dairy derived products among respondents in Central Banat district

#### 4. Conclusions

Having into consideration the nowadays threats facing the dairy producing sector from the Republic of Serbia, such as the decline in the numbers of dairy cows and the competition with other neighboring countries on one hand. And the high production potential of the country in producing high quality milk and derived products, at a competitive price/unit, on the other. The implementation of the current study was considered necessary, in order to aid future local strategies and plans concerning the production

potential and the consumer's preferences in Central Banat district.

Current results have highlighted the main drives that consumers use in choosing and purchasing milk and derived dairy products, and also their behavior regarding the consumption of such products.

#### Acknowledgements

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