

OFFER AND DEMAND OF GOAT'S MILK PRODUCTS IN PELAGONIA REGION R. MACEDONIA

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ABSTRACT

Goat breeding in the Republic of Macedonia is a sector of husbandry industry that has a good basis for improving the genetic capacity of livestock breeding, increasing the volume of production and creating opportunity for economic profit of the farmers. Considering the climatic conditions and the experiences of other countries, the Republic of Macedonia has capacity for adequate development of goat breeding by establishing small to medium goat farms and application of intensive or semi-intensive goat farming systems. There are various breeds of goats in the Republic of Macedonia such as the Domestic Balcan Goat, Saanen and Alpina and cross-breeds between these breeds. The basic product that is obtained from goats is goat milk which is mostly processed into cheese, butter and yogurt.

Subject of research in this paper is the supply and demand of products from goat's milk in the Pelagonia region. The research includes data on supply of products from goat's milk taken from the Ministry of Agriculture, Forestry and Water Economy of the Republic Macedonia and data on demand of the products obtained using a questionnaire on a representative sample of 200 respondents chosen at random.

The largest percentage (70 %) of the respondents said that the market offers small quantities of products from goat milk. Therefore, it is necessary to take more measurements aiming the development of this industry in the future.

Key words: Goat Breeding, Supply, Demand, Products.

Introduction

The role of goat breeding in the husbandry industry is significant, there isn't a country in which they aren't grown. The prevalence of goats is due to their excellent capacity for acclimatization in different climatic and environmental conditions and production of milk, meat, wool and leather at a relatively low production cost.

There are about 490 million goats in the world represented by more than 200 races approximately 63 % of which are for milk production (10.231 million tons), 27% for the production of meat and about 5 % for the production of wool.

The development of goat breeding in the Republic Macedonia is difficult due to a number of factors such as unfavorable racial composition and fragmentation of herds, unorganized and insecure sale of milk and dairy products, shortage of labor, weak and irregular application of selective measures in the herds and more. However, compared to past years it can be concluded that there is spontaneous and continuous development of the husbandry industry growing interest of farmers for goats breeding. The total number of goats R. Macedonia is around 80,000 with a tendency of increase.

The racial composition of goats in R. Macedonia is based on the Domestic Balcan Goat following with Saanen and Alpina goat breeds and cross-breeds between them. The basic product that

is obtained from goats is goat milk that is mostly processed in white cheese, cheese, butter and yogurt. The goat milk contains vitamins, minerals, amino acids, quality protein and fat and is a good source of riboflavin. It contains much calcium which is important for maintaining strength and bone density. It also contains much potassium which is an essential mineral for maintaining normal blood pressure.

Goat breeding in R. Macedonia has the mark of traditionalism, during most of the year the goats graze. In the use of pastures, the goats are not competitors of sheep and cattle, because they prefer to browse on shrub-like, broadleaf forbs over traditional pasture grasses.

Organic farming in its components and constituents is in a mutual connection and compliance in order to create a stable and coherent whole. Within the goat breeding industry the interest in organic production is growing and therefore a greater number of organic goat farms is needed. That way it is possible to achieve the goals of organic farming, such as:

- Production of food products with high quality.
- Small load of natural resources.
- Cultivation of healthy animals and healthy food production.
- Production of healthy products without or with a reduced presence of substances harmful to the consumer's health.

Conventional production is reduced to profit, while organic despite profit has the most important components such as production of healthy and quality products.

Material and Methods

Subject of research of this paper is the supply and demand of goat milk and goat milk products in the Pelagonia region in R. Macedonia. The data is taken from the Ministry of Agriculture, Forestry and Water Economy of the Republic Macedonia as well as data obtained using a survey.

Using the methods of analysis of documentation and comparative analysis the research is based on data taken from the above-mentioned Ministry of Agriculture, Forestry and Water Economy for the number of goats and goat milk products in the Pelagonia region from 2012 to 2014.

In terms of the survey a method of a structured survey is used and the analysis of data from the survey expressed using percentage (%). The survey contains 6 questions regarding to the demand of goat milk and goat's milk products. The survey was conducted on a sample of 200 respondents chosen at random.

Results and Discussion

The obtained data for the number of goats and goat milk in the Pelagonia region are divided into two groups represented by graphs. The first group refers to the number of goats in the Pelagonija region from 2012 to 2014 presented in Figure 1.

The second group refers to the data for the number of produced liters of goat milk in the Pelagonija region from 2012 to 2014 presented in Figure 2.

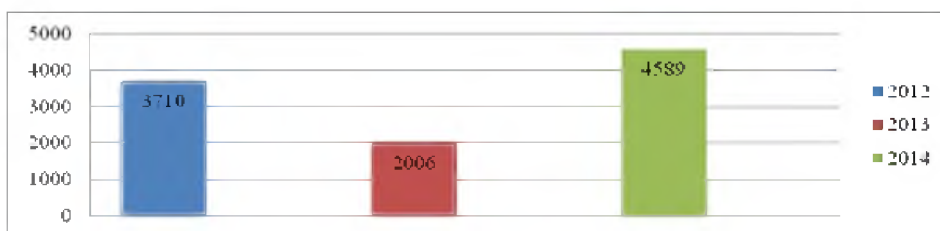


Figure 1: Number of goats in Pelagonia region.

From the data presented in Figure 1 it can be seen that in the period from 2012 to 2013 there is a downward trend in the number of goats, while from 2013 to 2014 there is an increase in the number of goats that are grown in the Pelagonia region.

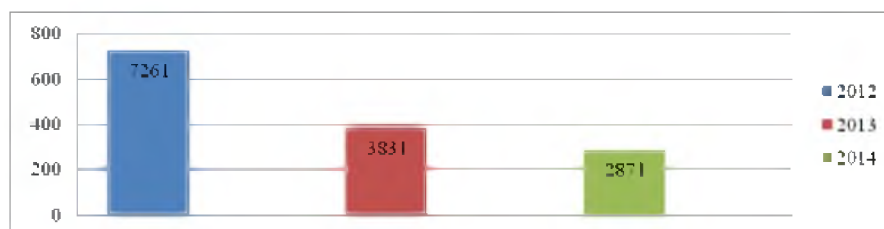


Figure 2: Production of goat milk Pelagonia region.

The data on production of goat milk presented in Figure 2 shows a downward trend in the production of goat's milk in the period from 2012 to 2014 in the Pelagonia region. This trend is due to the reduction in the number of dairy goats whose number in 2012 was 3038, in 2013 it was twice lower amounted to 1413 and in 2014 it was further reduced and amounted to 993 dairy goats.

Regarding the second part of the research the analysis of the data from the survey showed the following:

In Figure 3 is presented as a percentage the total number of respondents who answered the question: What kind of milk do you usually consume in your diet?

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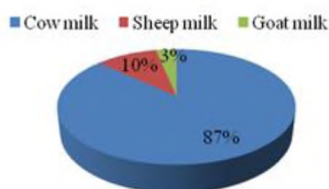


Figure 3: Consumption of milk.

From the data presented in Figure 3 it can be seen that from the total number of respondents (200) the majority of respondents 87 % said they usually consume cow milk versus 10 % of respondents who said they consume sheep milk. The smallest number of respondents 3 % said that they consume goat milk.

From the presented data it can be concluded that that goat milk is not sufficiently used in the diet of the respondents.

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In Figure 4 is presented as a percentage the total number of respondents who answered the question: How much are goat dairy products included in your diet?



Figure 4: Usage of goat dairy products in the diet.

From the data presented it can be concluded that very few of the respondents often use goat milk products in their diet.

In Figure 5 is presented as a percentage the total number of respondents who answered the question: Which products from goat milk do you use?

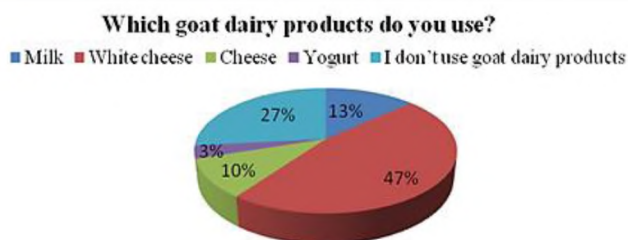


Figure 5: Goat dairy products.

From the data presented in Figure 4 can be seen that the majority of respondents, 63 % rarely use products from goat milk versus 20 % of respondents who said that they never use goat milk products. Only 17 % of the respondents stated that they often use goat milk products in their diet.

From the data presented in Figure 5 can be seen that the highest percentage of respondents 47 % mostly use goat white cheese, 13 % use goat milk, 10 % use goat cheese and lowest percentage 3 % use goat yogurt. Opposite to these data 27 % of the respondents do not use goat dairy products.

From the data presented it can be concluded that the usage of goat dairy products in the participants diet is low despite the fact that the highest percentage of the respondents use goat white cheese.

In Figure 6 is presented as a percentage the total number of respondents who answered the question: Are goat dairy products available in the market?



Figure 6: Availability of goat dairy products in the market.

From the data presented in Figure 6 can be seen that majority of respondents 46 % said that goat dairy products can be found mostly in larger supermarkets versus 37 % of respondents who answered that goat dairy products are rarely available in the market. The lowest percentage of respondents

17 % said that goat dairy products are not available in the market.

From the data presented it can be concluded that there is insufficient availability of goat dairy products in the market.

In Figure 7 is presented as a percentage the total number of respondents who answered the question: How familiar are you with the nutritional value of goat dairy products?



Figure 7: Nutritional value of goat dairy products?

From the data presented in Figure 7 can be seen that majority of respondents 50 % are only partly familiar with the nutritional value of goat dairy products. The rest of the respondents 37 % are familiar with the nutritional value of goat dairy products, as opposed to 13 % of respondents who are not familiar with the nutritional value of goat dairy products.

From the data presented it can be concluded that the respondents are insufficiently familiarized with the the nutritional value of goat dairy products.

In Figure 8 is presented as a percentage the total number of respondents who answered the question: According to you do goat dairy products have an affordable price?

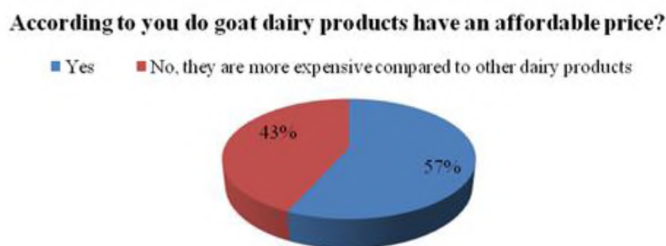


Figure 8: Price of goat dairy products.

From the data presented in Figure 8 can be seen that the answers of the respondents were almost equally divided, the majority 57 % of respondents said that goat dairy products have affordable prices as opposed to 43 % of participants who said that goat dairy products are more expensive than other dairy products.

From the data presented it can be concluded that goat dairy products are slightly more expensive than other dairy products in the market.

From the analysis of data obtained from the questionnaire can be concluded that goat dairy products are insufficiently represented in the diet due to insufficient education on their nutritional value, insufficient representation of the products in the market and their relatively higher prices than other dairy products.

Conclusions

From the analysis of the results for the supply and demand of products from goat milk can be concluded that despite the increased number of goats that are breed in the Pelagonia region from 2012 to 2014 there is a significant reduction of the production of goat's milk. With the reduction of goat's milk, the production of goat dairy products is reduced as well. The decrease in production is also due to the low demand of dairy goat products. Because of that goat dairy products can be found only in larger supermarkets with higher prices than other dairy products. From dairy products which are sold in major supermarkets there is an offer only for goat white cheese and cheese as follows:

- Spicy goat white cheese – Grdovci, Kocani.
- Osogovsky white and yellow cheese.
- Organic goat white cheese – Kicevo.
- Pelister goat white cheese.

For these products only Pelister goat white cheese produced in the Pelagonia region.

Production of goat milk in Pelagonia region is concentrated only in the private sector.

The structure of farms is unfavorable, ie dominated by small farms with unfavorable racial structure for milk production. Low yields of milk in the goat industry are indicative of low efficiency of the farms. The distribution of processed milk is mainly implemented through private distribution networks in major supermarkets and only a smaller part in small retail centers.

In the future a greater development of the goat breeding industry is needed which would increase the production of milk and dairy products. The development of the dairy sector should contribute to the production of quality milk at affordable rates which would increase the domestic and international competitiveness of milk production.

To achieve this goal, the Ministry of Agriculture, Forestry and Water Economy of the Republic of Macedonia developed a strategy in 2012 for improving and monitoring the quality of milk for the period from 2013 to 2020. The strategy whould provide the following:

- quality and safety of raw milk;
- providing continued purchase of raw milk (in terms of quality and quantity);
- optimizing transport costs from collection center to the processing facilities;
- efficient organization of work processes and the proper use of the available labor force;
- optimizing the level of general and fixed costs and lowering the product unit, through better utilization of installed capacities.

Dairy industry R. Macedonia must be competitive in terms of price of basic dairy products. Production of dairy products is recommended to concentrate on several major dairies while smaller facilities need to streamline the production of specialized products.

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