# STUDY REGARDING THE MAIN SKILLS OF SPECIALIZED ANIMALS FOR MILK PRODUCTION

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***Abstract:*** *Of the breed of origin of the cows some milk quality indices depend (the fat content of milk, which may vary between 2,8 and 3,5% low-fat milk, between 3,5 and 4,0%, in milk with an average fat content of between 4,0 and 5, 0% high-fat milk, and between 5.0 and even 6.5% very high fat content. In the case of milk obtained from buffalo species, it is found to be the richest in fat, and due to the large amount of calcium and protein, it is recommended for the manufacture of dairy products, especially cheese. Domestic sheep breeds produce relatively low amounts of milk, between 70-150 liters per lactation, but there are also specialized breeds that can produce even over 400 liters of milk per lactation, the percentage of fat of this type of milk can vary between 6 and 8%. Donkey's milk has the lowest fat percentage, but is the most expensive on the milk market, due to the very low production per animal and especially due to the many beneficial properties of the body, being considered a natural antibiotic that cures many diseases.*

***Key words****: skills, milk, animal, origin*

## INTRODUCTION

Milk comes from the secretion of the mammary glands, of female mammals and is the only food for chicks in the first part of life.

If the species of origin is not specified, by the simple concept of milk, the animal as source associated with this product is the cow [6,7]. When it comes to another species, the name of that animal will accompany and complete the simple notion of milk. Therefore, when the milk comes from the cow, its name will be simple: milk, but when it comes from the buffalo, sheep, goat, or donkey, the correct name used will be: buffalo milk, sheep's milk, goat's milk, respectively donkey milk [3,10,15].

Due to its heterogeneous composition, milk is an indispensable product for a balanced diet, providing the body with important components for maintaining its health.

Being considered a strategic product in the agri-food market, milk has a very high biological importance, due to its content in amino acids, proteins, lactose, fats, vitamins and minerals.

Milk is the main product obtained from cattle. Each breed or hybrid of cow has an individual genetic potential [2,4], with an individualized productive power, which were outlined following repeated series of crosses, respectively improved generations [13]. In order to develop the productive capacity of dairy cows, it is imperative that their exploitation be carried out rationally, meaning that all necessary technical and organizational measures concerning the maintenance, feeding [5,8] and use of these animals for various purposes be complied with.

The potential of dairy cattle is, on average, between 1500 and 12,000 liters of milk per lactation [9, 12]. These are followed by buffaloes, with an average lactation production of 800-7,500 liters of milk, and then zebu, which produces an average of 600 to 2,000 liters of milk in a single lactation period.

The breed to which the animals belong, has a great influence in terms of the amount of milk produced, but also its quality, more precisely, the percentage of fat and protein contained in it [11,14]. Depending on the breed, cows can be divided into three categories, classification based on the amount of milk produced in a lactation period. So we have the following categories of breeds:

- breeds of cows producing small quantities of milk, between 1 000 and 3 000 liters of milk per year;
- breeds of cows producing medium quantities of milk, between 3 000 and 6 000 liters of milk per year;
- breeds of cows producing large quantities of milk, between 6 500 and 13 000 liters of milk per year.

## MATERIALS AND METHODS

In order to carry out this scientific paper, we undertook bibliographic studies, analyzing works by local and foreign authors in order to present the characteristics of types of milk, depending on the species of animal from which it comes.

## RESEARCH RESULTS

The breed of the cows also contributes to the quality indicators of the milk, namely the fat content of the milk, which varies from 2,8 to 3,5% for low-fat milk-producing cows, between 3,5 and 4.0%, in the case of those who produce milk with a medium fat content, then between 4.0 and 5.0% in dairy cows with a high fat content, and finally a percentage of 5,0, even 6.5% in the case of cows producing milk with a very high level of fat contained.

As a conclusive example, from the Jersey breed, large milk productions can be obtained, through a rational exploitation, for 6-7 lactations, unlike the Frisian breed, which is efficiently exploited, in this way, only a period of 3-4 lactations. The increase in the efficiency, from an economic point of view, of the exploitation of dairy cows is directly related to the prolongation of the productive longevity.

There is also an important link between milk production and the body shape of cattle. Therefore, cows with a trapezoidal body, large udder and globular shape, with symmetrically divided quarters, are preferred by breeders, due to the high milk production offered, compared to other cows, which do not fall into this description [6].

Milk obtained from buffaloes is the richest in fat, their percentage being double compared to cow's milk. Due to the sufficient amount of calcium and protein, buffalo milk is recommended for the manufacture of various dairy products, especially cheeses. The production of milk obtained from buffaloes can vary from 1500 liters to 2500 liters, and the percentage of fat between 7% and 12% in certain improved foreign breeds [1].

In the case of sheep, the maximum milk production is recorded in the second and third months of the lactation period, respectively, out of the total of 200-210 days that the total period has. By crossing and obtaining new hybrids and specialized breeds, the aim is both to increase the amount of milk obtained per sheep, and to extend their lactation period to 250, even 300 days.

Therefore, if domestic sheep breeds produce relatively low amounts of milk, ranging on average between 70-150 liters per lactation, there are specialized breeds, such as the Friesian sheep breed, compared to the Holstein cow breed, which even produces over 400 liters of milk per lactation. The fat of sheep's milk is much higher compared to cow's milk, its percentage varying between 6% and 8%. For this reason, sheep's milk is not intended for fresh consumption, but mainly for its processing, with a view to obtaining various dairy products and cheeses.

The composition of goat's milk is similar to that of cow's milk, except that, due to the varied consumption of plants, the goat is highly valued for its high content of minerals and vitamins beneficial to the body. The average production of goat's milk is in the range of 300 liters for local breeds and over 1000 liters, with a record of over 2000 liters for improved breeds.

Donkey's milk has the lowest fat and protein percentage. However, it is the most expensive on the milk market, due to the very small amount produced per donkey, between 100 liters and 400 liters per lactation, respectively due to the many extremely beneficial properties of the body, being considered a natural antibiotic that cures many diseases. It is not processed to obtain cheese; it is eaten either fresh or fermented.

If the species of origin is not specified, by the simple concept of milk, the source animal associated with this product is the cow. When it comes to another species, the name of the animal will accompany and complete the simple notion of milk: buffalo milk, sheep's milk, goat's milk, and donkey's milk (figure 1).

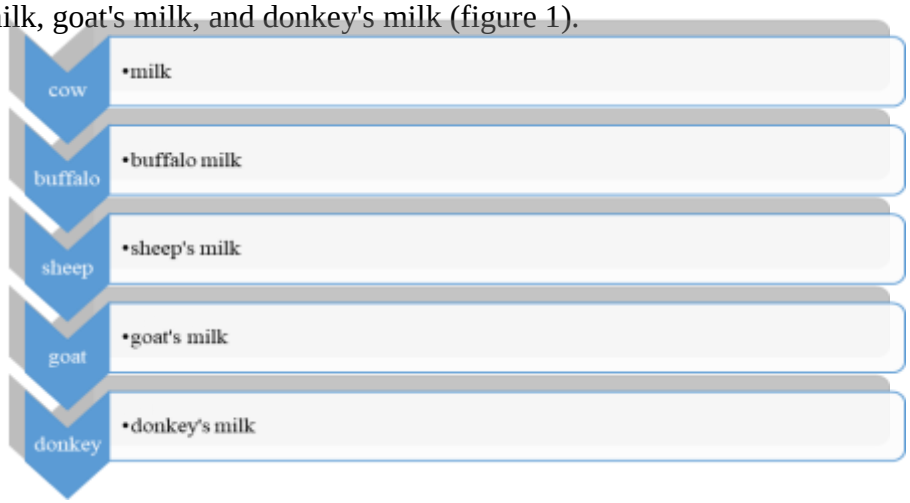


**Figure 1. The name of the milk according to the species of origin**

In the following Table (Table 1) are highlighted the main information of interest, regarding the fat, protein, lactose, casein and ash content of milk from animal species specialized for this purpose and exploited in our country: cow, buffalo, sheep, goat, donkey.

**Table 1.**

**The chemical composition of the milk according to the species of origin**

| Species of origin of the milk: | % | | | | |
|---|---|---|---|---|---|
| | fat | protein | lactose | casein | ash |
| Cow | 3,8 | 3,6 | 4,8 | 2,9 | 0,7 |
| Buffalo | 7,5 | 4,3 | 5,2 | 0 | 0,7 |
| Goat | 4,1 | 3,7 | 4,2 | 2,9 | 0,8 |
| Sheep | 6,2 | 5,4 | 4,8 | 4,3 | 0,9 |
| Donkey | 1,4 | 1,8 | 6,2 | 0 | 0,5 |

*Source: Processing different authors*

Regarding the percentage of fat, it is found that the buffalo species produces the milk with the highest percentage of fat, namely 7.50% while at the other extreme is the milk donkey with only 1.40%, but this type milk has the highest percentage of lactose, namely 6.20%.

## CONCLUSIONS

Milk from the five animal species, which is found in the agri-food markets, is extremely different, both in terms of its fat percentage and in terms of protein, lactose and casein content. In terms of the quantity used in the first place is cow's milk, which can have a percentage of fat between 2.8 and even 6.5%, depending on the breeds of animals exploited.

The milk obtained from the buffalo species is the richest in fat, meaning 7.50%, but it also contains sufficiently large amounts of calcium and protein, being recommended for processing various dairy products.

The best rated, from the point of view of the capitalization price is donkey's milk, which although has the lowest percentage of fat, but the production is very low per animal and especially due to its properties particularly beneficial to the human body, being considered a Natural antibiotic that cures many diseases, causes this price quite high.

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