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WHY ARE BUFFALOES REARED LIKE CULTURAL CATTLE IN ITALY?

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Abstract
This article provides information on the role of buffalo in the zoological system, the history of domestication of Asian and Indian buffaloes, their distribution, biological, economic and useful properties of buffalo, specific aspects of storage and care, characteristics of buffalo milk and world-famous Italian mozzarella cheese. Many local buffaloes were brought to southern European countries, especially Italy, by the Arabs in the VIII-IX centuries. Just as you can't imagine Italy without mozzarella cheese, you can't imagine mozzarella cheese without buffalo milk.

Keywords. Buffalo, Asian Indian buffalo, natural and biological properties of buffalo, lifestyle, buffalo in Italy, storage and care, description of buffalo milk, products made from buffalo milk, mozzarella, mozzarella species, composition, useful properties.

In the framework of the European Union Erasmus Plus program project BUZNET "B-learning Uzbekistan Veterinary Network" in 2019 we visited a farm where buffaloes are reared in Italy. Here we have found the answer to the question of why it was engaged in cattle-breeding, not cattle-breeding. Buffaloes are the common name of two generations that belong to the family of hollow horns. These generations include several species:

- African black buffalo; (Syncerus)
- Asian black buffalo; (Bubalus bubalis)
- Tamorau; (Bubalus mindorensis)
- Anoa. (Bubalus depressicornis)

Various researchers acknowledge that there are 6 species of Asian buffalo. At present, there are 4 subspecies of the wild Asian buffalo:

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▪ Bubalus arnee (= B. bubalis arnee) - distributed in East India and Nepal;
• Bubalus arnee fulvus (= B. bubalis fulvus) - the largest subspecies, living in Assam and surrounding areas;
• Bubalus arnee theerapati (= B. bubalis theerapati) - occurs in the western and southern parts of the Indo-Chinese Peninsula;
• Bubalus arnee migona (= B. bubalis migona) - Ceylon water buffalo - found on the island of Sri Lanka;
Domestic Asian buffaloes:
• Asian buffalo. Bubalus bubalis is a domesticated form of the Asian buffalo, known as the "River Type," with 50 chromosomes;
• There is the Asian buffalo Bubalus bubalis. kerabau is a "swamp type" of domesticated Asian buffalo, with 48 chromosomes.
The Asian buffalo, or Indian buffalo, Indian water buffalo, arni (Latin: Bubalus bubalis) is one of the bipedal mammals. The body length of large mature bulls exceeds 3 m, the height of the bull reaches 2 m and the live weight can reach 1000 kg, in some cases up to 1200, the average large bull is 900 kg, the horns reach 2 m in length, the horn is triangular , oriented in both directions and backwards, has a crescent-shaped and flattened part. The horns of the cows are smaller or absent altogether.
In Asian countries, the habitat and number of Indian buffalo are steadily declining. The main reason for this is that as a result of land reclamation, plowing and crop placement, the number of areas where wild buffalo can live in their natural environment is declining. In cows, calving lasts 300-340 days, usually a single calf is born. The body of a newborn buffalo calf is covered with wool with yellow-brown-brown fur. The milking period of calves lasts 6-9 months. Buffaloes have very few natural enemies. However, many calves die from heat and various diseases. The buffalo species was first recorded in 1792 by Scottish historian and naturalist Robert Kerr. The Indian buffalo has been domesticated since ancient times. The domestic buffalo differs from the wild buffalo in its gentle demeanor and short horns, and the belly part of the domestic buffalo is slightly drooping. Domestic buffaloes are one of the main farm animals in Southeast Asia, India, southern China, the islands of the Malay Archipelago.
Productivity of buffaloes. Almost all the main indicators of productivity of buffaloes are much lower than those of private cattle, meat yield usually does not exceed 47%, while in ordinary cattle this figure varies between 50-60%. [3] The meat of large buffaloes is very firm and smells of musk, so it cannot be used as ordinary beef. The

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average milk yield is 1400-1700 kg, which is 2-3 times less than the productivity of private cattle. However, the advantage of buffalo milk is that their milk is very fatty. While normal cow's milk contains 2 to 4% fat, buffalo milk has an fat content of 8%.

The obvious advantages of buffaloes are:

1. High fat content of milk. The average fat content is a little more than 8%, and according to certain nutrition rules, it is easy to have a figure of 10% or more. Thus, buffalo milk is an ideal raw material for the production of butter and cheese. If you need 30-35 l of cow's milk to produce 1 kg of fat, you will need only 10-15 l of Buffalo milk;
2. Buffaloes are not demanding on fodder. Cheap, coarse fodder, which is not suitable for cows, is loved by buffalo, which significantly reduces their costs, especially in winter;
3. Good, stable health, disease resistance. Buffaloes are rarely infected with infectious diseases. In addition, they can live in humid, hot climates.

Asian buffalo females reach sexual maturity at 1.5 years of age and bulls at around 3 years of age. Calves are born with a live weight of 35-40 kg at birth.

Domestic buffalo milk is high in protein, fat, calcium, phosphorus and lactose. The indication of these dry substances indicates that buffalo milk is ideal for cheese production. [4]

Buffaloes and mozzarella. Buffalo milk contains more protein, calcium and phosphorus than cow's milk, less cholesterol and milk sugar, and buffalo milk has a porcelain-white color due to the lack of enzymes that give it a yellowish color. Mozzarella (Motsarella di Bufala) is one of the most popular and widespread Italian cheeses. Mozzarella is a soft, young cheese that can be consumed immediately after production.

We were introduced to an enterprise that feeds, breeds and grows buffalo milk, as well as all kinds of products from buffalo milk and meat. This company is located in the province of Venice in northern Italy. Historically, it has been an agricultural, livestock region that has always produced many wonderful cheeses and meat products. [5]

According to historians, black buffalo were brought to Italy by the Arabs in the VIII-IX centuries. At first they were mainly used as an animal to be added to a cart in agriculture, and later they began to be valued for their very tasty and healthy milk.

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Buffaloes are fed on the farm without tying. Buildings, passages, and barns are much wider than ordinary cows.

The animals are milked twice a day and the milking lasts about three hours. The company pays special attention to the process of raising young calves. Because calves digest milk well, they are fed from ordinary cow's milk. For 90 days, one cow can be fed in a "nanny" way by attaching two or ten calves. As we were told on the farm, real plain Italian mozzarella cheese is made only from buffalo milk. This cheese hasbeen known since ancient times and the process of making cheese has hardly changed. The name of the mozzarella cheese comes from the Italian word "mozzare" (shredded, sliced or sliced) and a portion of the finished mass is cut and separated. Every morning, fresh buffalo milk from the farm is pre-tested for acidity, protein and lactose levels, etc., and only then is it brought to the plant for processing. Mozzarella is a classic Italian soft pickled cheese. Mozzarella is very popular in Italy and all over the world. The farm has a shop that sells all the products of this enterprise. Needless to say, everything we tried there was fresh and surprisingly delicious. Although the shop is far from the settlements, Italians and other tourists also come here.

Mozzarella varieties: The homeland of this cheese is the Campania region of Italy. Homemade homemade mozzarella - jornata cheese is produced without the addition of

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salt, so it does not keep long. To prolong the shelf life of this cheese, it is stored in salt water, but such cheese is no longer considered jornata. The delicate delicate taste of mozzarella made it very popular. Modern Italian cheese makers have changed the classic recipe for mozzarella. Therefore, at the same time, there are many varieties of mozzarella due to the appearance on sale, the raw materials used, the presence of additives in the recipe, as well as differences in production stages.

By shape: The classic mozzarella always has an irregular shape resembling a ball or a large egg. But there are other, less popular forms of it. In Italy, under the name bokkonchini, mozzarella is produced in the size of a chicken egg, known as a large cherry-shaped-chilenji, and a small ball - a pearl, i.e. a pearl. Freshly made cheese has a fibrous, elastic texture, so many manufacturers wrap it like women's hair and call it trechchi.

According to the recipe: Campania real cheese is made only from black buffalo milk, so it is called "mozzarella di buffala campaign". If the cheese is made from buffalo milk of a different color or made from other parts of Italy, it is called mozzarella "Di latte di buffalo". To increase the production of this cheese, the food industry began to produce mozzarella from cow's milk or a mixture of buffalo and cow's milk. The names of this species of mozzarella are called "Fior di latte" and "Kon latte di buffalo". The casein present in cow's milk impairs the intestinal absorption of nutrients from cheese, so these cheeses are much less expensive than buffalo cheese.

Chemical composition: The chemical composition of mozzarella depends on its recipe. The most useful and nutritious motserella is a jornata variety, but it can be purchased only in the Campania region of Italy. Mozzarella Di Buffala Campania cheese contains 22 g of protein and fat and 2 g of carbohydrates per 100 g. Such a high amount of protein and fat makes cheese high in calories: its energy value is 300 kcal.
The amount of essential amino acids in 100 g of mozzarella is so high that it provides 65% of tryptophan, 57% of isoleucine, 50% of valine, 40% of leucine and threonine, 29% of methionine, 24% of lysine, 23% of phenylalanine for daily human needs.
Casein in buffalo milk is very important for some people due to the lack of a large molecular protein that can be a strong food allergen. Therefore, real Italian mozzarella can be consumed even by people who have an individual sensitivity to casein.

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Mozzarella is an oily product. Its fat content is mainly characterized by saturated fatty acids and cholesterol. But this is not to be feared, as these lipids are part of cell membranes, steroid hormones, and many enzymes. In addition, saturated fatty acids are sources of fat-soluble vitamins A, D, E, K.

These carbohydrates are mainly represented by glucose, fructose, galactose, lactose, maltose, sucrose. Mozzarella made from buffalo milk contains many vitamins, macro and micro elements.

Useful properties: Metabolism of proteins and fats in the human body is a plastic-building material for cells involved in metabolism. Antibodies, hemoglobin, blood plasma proteins, hormones and enzymes are synthesized from amino acids. The presence of mozzarella in the human diet nourishes the body with protein and prevents anemia, immune system, hormonal disorders, edema, disorders of protein metabolism. For example, due to the participation of amino acids in the synthesis of protein-containing elements of the musculoskeletal system, mozzarella strengthens bones, joints and joints, amino acids that are part of the myelin molecule - the shell of nerve nodes, help improve brain function, especially in people with memory impairment.

Mozzarella is especially beneficial for athletes. These cheese proteins help build muscle mass, increase endurance, and improve the composition of synovial fluid between joints.

Group B vitamins in cheese normalize the digestion of nutrients consumed and restore the damaged biocenosis of the intestine. Regular consumption of mozzarella prevents the development of bowel cancer tumors. Mozzarella is very important for pregnant and lactating women, as well as children.

Harmful properties: Although mozzarella has a number of beneficial properties, it is harmful to people with lactose, casein (if the cheese is made from cow's milk) or food allergies. This cheese is contraindicated for people with phenylketonuria. In cardiovascular disease and impaired secretory function of the kidneys should refrain from consuming salty cheese. This can lead to high blood pressure and swelling. High-calorie mozzarella should not be consumed for people on a diet.

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