CURRENTS AND PERSPECTIVES IN DAIRY AND MEAT CATTLES BREEDING IN ROMANIA, WITH EMPHASYS ON APUSENI AREA

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Abstract. The present study describes the currents and perspectives of cattle breeding in Romania with emphasis on Apuseni Mountains area. Bovine growth is a basic vector in modern agriculture. Finding suitable breeds to be grown in different geographic areas is an important activity for agriculture and animal husbandry development. In Romania, due to the favorable natural conditions that exist during almost all of the year, the possibility of animal breeding is very favorable. In Apuseni area two main breeds are raised: Bălţata Românească and Pinzgau, both for their milk production and local supply of meat.

Keywords: animal breeding, cattle, breeds, Balţata Românească, Pinzgau

INTRODUCTION

Agriculture has been the oldest and continues to remain an important area of human activity. It remains the major source of food, an important supplier of raw material for industry and also an important market for its products. The relative importance of agriculture varies from one country to another, but remains the main branch of the national economy in all the states, including the developed ones.

A fundamental characteristic of Romanian agriculture is that the high natural potential can provide the basic domestic food needs for a much larger population than the current one. Food imports should only be a source of diversification and consumption. The negative effects of the agricultural reform in its first phase have a temporary negative impact on the level of vegetal and animal products, and the negative effects on the upstream and downstream industries. The decentralization of the agro-food sector, the privatization of the land, the lack of programs aimed at creating new agri-food chains generated the crisis of agriculture and affected the food security of the population.

Food security has as basic components: ensuring the availability of food per capita (calories and protein) and the purchasing power of the population, and is achieved by linking nutritional policies to food policies (Velea and Mureşan, 2012a, b). Food policy aims to ensure the necessary, quantitative and qualitative, food for the entire population at affordable prices (Onaciu, 2013). Bovine growth is a basic vector in modern agriculture. Through the productions provided by bovine animals, and in particular, cattle, it is provided essential food products with high biological and nutritional value for humans. Now and in the future, as a result of the growth rate of the human population and the growing preferences for animal food, the main aim of cattle farming is to increase and sustain the milk and meat production.

The living standard of the population and some of the processing industry are directly influenced by bovine livestock as they provide an appreciable amount of animal products of great importance to human consumption and some raw materials for industry (Velea and Mureşan, 2012b).

Due to the social role, the economic and numerical weight, relative to other farm animal species, the cattle breeding is considered to be the spearhead of the world's animal husbandry. Therefore, it is necessary to pay more attention to how each growth and exploitation variant is chosen, to organize the production for the most efficient development of this branch. In this context, alongside the cattle growth and the continuous optimization of exploitation technologies and their adaptation to the current animal husbandry requirements, a special role is played by the improvement of activity through the detailed and real knowledge of the characters and attributes of cattle breeds, fair and well-founded decisions on future cattle's growth and exploitation. In Romania, due to the favorable natural conditions that exist during most of the year, there is the possibility of raising animals of all species (horses, cattle, sheep, goats, pigs, poultry, bee families, silkworms, etc.), Romania being able to ensure from the domestic production, the entire range of products of animal origin. (Dinescu, 2002).

The dairy sector in our country is significant, stock farming is an important and traditional occupation in rural areas, especially in mountain districts; it brings regular incomes in these areas and makes good use of the pastures and hayfields that cover about 33% of the agricultural land in Romania (Mironeasa et al., 2011).

SOCIAL AND ECONOMIC IMPORTANCE OF CATTLE EXPLOITATION

The exploitation of cattle directly influences the living standards of the population by providing animal products of great importance for population consumption (Velea, 2002).

Due to the social role and the high economic weight compared to other domestic animals, the cattle exploitation is considered the main branch of world animal breeding. The economic importance of cattle came from the fact that the most important food products are made from cattle: milk, meat, leather, manure, hair and in less developed countries the traction force (Velea and Mureşan, 2012)

Milk. The social importance of milk is due to the fact that:

- cattle are the world's leading provider of milk: > 550 million tones / year
- provide 35% of total animal protein globally.

Approximately 95% of global milk production comes from cattle. For this reason, milk is considered to be the most complete natural food and is the only food for newborns in the first 2-3 years of mammals.

Meat. Beef is a source of high-quality protein and essential nutrients.

- cattle are the main source of meat for a large number of peoples. This type of meat represents 30% of the world's meat consumption, for the essential amino acids present in its chemical composition.
- cattle meat has high digestibility and dietary role. It contains mineral salts and essential vitamins for the human body.

Skin.

- provides 90% of the leather used in the leather industry. The leather is used for clothing, footwear, leather goods and harnesses.
- it is an important raw material for gelatin and collagen extraction. If gelatin is an important ingredient in food industry mainly, collagen, and beef collagen especially, is used in medicine, pharmacy, for treating different degenerative illnesses.

The manure. bovines produce between 6-10 tons of manure / year / UVM - large beef unit (cow head). It is a complex fertilizer and is superior to chemical fertilizers.

Bovine animals have an important position in the agricultural system, and farms are considered to be open ecosystems, receiving an important flow of resources, substances and energy. As a consequence, the bovine farm is closely connected to the plant farms. The flow of feed is from the vegetable farm to the cattle farm, and the natural fertilizer flow is inversely. Bovine and soil relations are reciprocal: cattle provide the necessary elements for plant growth through natural fertilizer with soil-required substances.

Bovine interrelations with other animals compete for most food sources, since all domestic animals raised for their production are phytophagus. The most important influence on cattle is the anthropoid factor, which influences the cattle's performance and performance by sheltering, feeding, breeding, harvesting their products. Although, compared to 1990, there is a generally decrease in cattle raised in our country, the dairy cows, buffalo and heifer's number have not changed significantly (Fig.1). The Operative – Technical report on cattle and cattle production from 2017 of Ministry of Agriculture and Rural Development show the strengthen of the Private Sector both in cattle breeding and in products, to the detriment of State Sector (Table 1).

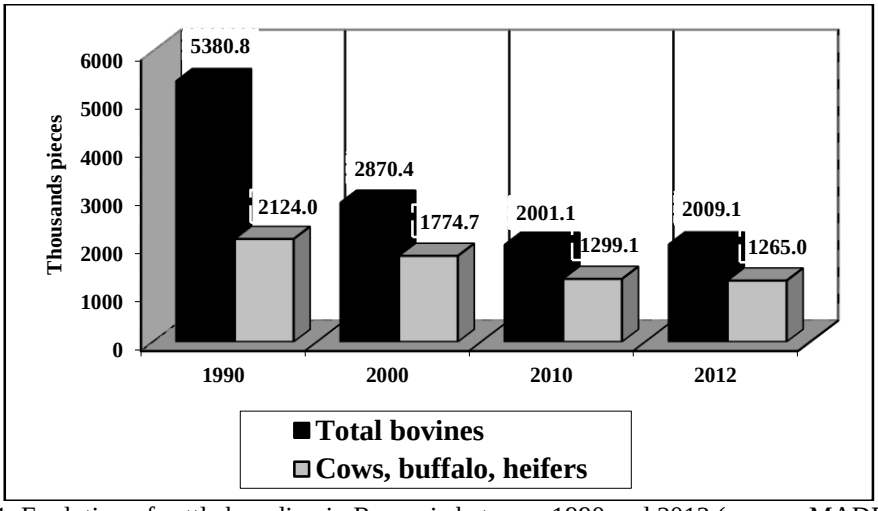

Figure.1. Evolution of cattle breeding in Romania between 1990 and 2012 (source: MADR 2014)

Table 1

Operative – Technical report on cattle and cattle production from 2017 of Ministry of Agriculture and Rural Development (source MADR 2017)

	Total	State sector	Private sector
Total bovines number (pieces)	**2231274**	**6082**	**2225192**
Cows (pieces)	1273356	2857	1270499
Heifers (pieces)	130661	296	130365
Buffalo (pieces)	18003	418	17585
Bovine meat (tons)	108913	682	108231
Cow milk (hl)	21042053	52324	20989729
Buffalo milk (hl)	124769	430	124339

CHARACTERIZATION OF CATTLE BREEDS RAISED IN APUSENI MOUNTAINS AREA

The group of the Apuseni Mountains is situated in the central-western part of the country, being the northern part of the Western Carpathians, being a part of the main branch of the Alps. Animal breeding was the main occupation of the locals during centuries ago and nowadays also. In the selection of animals the exterior appearance is one of the basic criteria (Nistor et al., 2005). By evaluating the breeds raised in our country, important information is revealed about the membership of each breed, the morphological type, the presence of defects that can reduce the value of the animals, the economic and animal reproduction, the state of health as well as the level of growth and development of the animals (Jurco et al., 2013).

Balţata Românească breed. Bălţata Românească Breed was formed after the crosses between Simmental bulls and Sura de Stepă breeds from Transylvania and Bucovina. The "simmentalisation" was initiated in the second half of the last century, when the first imports of Simmental cattle from Austria, Hungary and Czechoslovakia were made. Subsequently, and especially after the Second World War, imports came mainly from Switzerland, but also from other countries (Velea and Mureşan, 2012a, b). The complex, long-lasting and often insufficiently coordinated process of transforming Sura de Stepă breed with Simmental bulls, has led to the formation of a new Simmental like breed population, with own somatic and productive characters, relatively hereditary stable and adapted to the growth conditions in our country. Under these conditions, the Central Institute of Animal Husbandry produced the documentation for homologation in 1959 and it was recognized as a breed under the name of "Bălţata Românească". After homologation and recognition as a breed, Bălţata Românească has been improved by selection, line and family structure, and infusion with the Deutsches Fleckvieh, Alpenfleckvieh, Simmental and, more recently, with Red Holstein.

Bălţata Românească breed represents approx. 36% of the country's total cattle population, being spread in Banat, Crisana and some counties from Transylvania. This race has mixed productive skills of milk-meat, with the mention that there are sub-populations of meat-dairy (in Banat and the center of Transylvania). Depending on the feed and maintenance conditions, milk production varies widely. On average, the production is 3000-3500 kg of milk / lactation, with a fat content of 3.7-3.8%. In elite farms and in those where appropriate exploitation conditions are obtained, yields of over 4500 kg of milk / lactation are obtained. (Onaciu, 2013). As far as the meat production is concerned, Bălţata Românească breed shows pronounced skills (especially the type of meat-milk) for this appropriation. Various authors, with concerns in this field, highlight in their works the special qualities of this breed for meat production, as follows:

- high adaptability to natural growth conditions;
- compatibility with the specifics of fodder produced in our country;
- has a high consumption capacity and makes efficient use of the volume feed;
- exceptional quality of meat;
- small deposits of subcutaneous fat and internal organs;
- good biological and productive longevity;
- very good quality skins;
- slaughter index (quantitative and qualitative) very good.

At the same time, some of the defects of Bălţata Românească breed are highlighted:

- general body development is still below the desired parameters;
- satisfactory productive and reproductive precocity;

- relatively frequently the udder is defective, with relatively low utility for mechanical milking;

- conformation defects (insufficient thoracic depth, 52% of the waist), sometimes croup is narrow and weakly dressed in muscles, protruding sacrum, aplomb defects, etc.) with negative effects on the economy in exploitation;

- relatively high frequency of dystocia at calving;

- relatively large heterogeneity for the main morpho-productive attributes.

These defects are generally inherited from Sura de Stepă but also from insufficient tracking for morphological attribute improvements. Regarding the suitability of Bălţata Românească breed to the systems of breeding and exploitation, the special abilities of this breed for meat production were highlighted by many researchers who initiated a series of cross-breeding variants of Bălţata Românească breed with other breeds for testing of its combined capacity (Cârcu et al., 2010a,b; Feştilă et al., 2011). In the meat production, good results are produced by crossing Bălţata Românească with milk breeds, mixed breeds and meat breeds. The half breeds resulting from the crossing of Bălţata Românească breed with other Simmental like breeds, behave very well during fattening. In meat production, good results are obtained by crossing Bălţata Românească with milk production breeds (Velea and Mureşan, 2012b).

Pinzgau breed. This breed was formed by the absorption crossing between the local unimproved cows (mainly Mocanita and Sura de Stepă) with the Pinzgau breed imported from Austria starting from 1860 in Bucovina and Transylvania (the area of Mediaş and Sibiu). Pinzgau cows from Moldova and southern Transylvania have a width of 127-130 cm and a body mass of 450-500 kg, and those in the Apuseni Mountains have a lower body development (the size of 123-125 cm and the body mass of 400 kg), due to the fact that in these areas mainly the Mocăniţa breed contributed, at the base of the breed and also the feeding conditions are not very high due to specific landscape. In the past Pinzgau of Transylvania was spread in Bucovina, southern Transylvania and the Apuseni Mountains area. Gradually, the breeding area of this breed was restricted to the pre-montane and mountainous areas of western Bucovina and Transylvania (Sibiu, Haţeg, Cluj and Bihor). It is appreciated that in present the Pinzgau of Transylvania breed represents approx. 4% of the total cattle population of our country (Velea, 1999).

Pinzgau breed is endangered in our country and in other places from Europe, due to small size development in populations during the last periods and also due to crossbreeding (Kadlecik et al., 2013). In the first 200 days of lactation, Pinzgau breed is producing 75% of the total milk production and also another two genetic characteristics: the average productive longevity and maximum level of milk synthesis during lactations (Mang, 2011).

CONCLUSION

Bălţata Românească is the most popular cattle breed in Romania. It is renowned for good meat and milk production as well as for its resistance and growing suitability. This breed is well adapted to the environment, with good results all over the country, as we have continental climate. It is a long productive animal, suitable for growing in small farms as well as is intensive breeding. Due to its qualities, resistance to the specific environment mostly in mountains areas, the productive longevity, expression of its genetic properties, Pinzgau breed must be considered a valuable genetic resource.

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