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RESEARCH ON THE EVOLUTION OF THE ABERDEEN ANGUS BREED IN ROMANIA

Ioan Teodor GOCIMAN, Gheorghe Emil MĂRGINEAN, Stelian BĂRĂITĂREANU, Carmen Georgeta NICOLAE, Livia VIDU

University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd, District 1, Bucharest, Romania

Corresponding author email: gociman.ioan@yahoo.com

Abstract

The purpose of this paper is to make an analysis of the evolution of the Aberdeen Angus breed in Romania. This research paper desire to be a first response to the many questions about accommodation, advantages, disadvantages, bio-acclimatization and profitability of the Aberdeen Angus cattle breed at national level, compared with the country of origin Scotland and with the countries with great success in raising this breed. The first embryo transfer was performed in 2000 and at the end of 2008 there took place the first cattle import of 120 heifers Aberdeen Angus breed from Germany. Now in 2019 we have in the Aberdeen Angus Romanian Herdbook 45.000 cattle in all area of Romania. During this research we noticed that the Aberdeen Angus breed is accommodating well in the Romanian pedoclimate conditions.

Key words*: beef cattle, evolution, Aberdeen Angus.*

INTRODUCTION

Cattle breeding is considered a main branch of livestock farming which contributes in a large percentage for providing animal originated food for the population of the globe. The investigations made over time by different research institutions specializing in human population, it is noted that the index of growth of the human population is in constant development both in the short and for the next 3-4 decades.

These factors indicate that there will be a sharp increase in demand for food resources to feed people.

Representing an important source for food with high biological value, but also appreciated as a means of labor, increasing and improving of the cattle subfamily is for mankind a surplus food, providing about 55-57% of the animal protein consumed daily. The set of technical and organizational measures in cattle exploit operation involves several processes of feeding, growth, reproduction, breeding, which helps to increase the productive potential.

The importance of cattle in economy results from the fact that the animals in the cattle family provide the following products: milk, meat, leather, manure, hair, and in countries with underdeveloped agriculture, they are used as labor force. From the historical data, the worldwide cattle existence dates back to Mesopotamia in the Middle East region, which currently belongs to the part of Iraq, Syria and Turkey.

Domestication occurred together with the development of prehistoric peoples as evidence of the Sumer people in the Mesopotamia region in the 6th millennium BC cattle have a well-developed service, which can be seen from various mosaics bequeathed to humanity. With the human population migration from rural to urban areas, in the modern era (starting with the 18th century) it was stimulated the cattle development in order to increase the production of animal origin food (David, 1976).

The massive exports of these Aberdeen Angus (Figure 1) breed began at the end of the 19th century when they competed with the local meat breeds. Compared with other meat breeds such as Shorthorn and Hereford, the migration and success of the Aberdeen-Angus breed has so far increased about 18 times since 1920.

Figure 1. Aberdeen Angus cattle in Romania

MATERIALS AND METHODS

The Aberdeen Angus breed specialized in beef production was imported for the first time in the 1960s but the results obtained were unfavorable.

After 2010, imports of animals (heifers) from Germany started. The breed has adapted very well in Romania.

The limiting factors for the increase of cattle production in Romania are mainly the following: reduced animal herds, non-assurance and quality of the forage base, maintenance and exploitation technology, reduced cow breeding index, low growth rates, low body mass at slaughter and a low slaughter yield

This study aims to review the statistical data and research carried out in this field, both at national and international level.

The working method was based on the analysis of data recorded over time in Aberdeen Angus Romania's database and on their statistical interpretation using the consecutive methods.

RESULTS AND DISCUSSIONS

Romania is a country with high agricultural potential given that the geographical configuration and climate are favorable. Our country is not part of countries that have to import substantial amounts of food because, under normal circumstances, this land can meet the food needs of a population of three and a half times higher than the current population.

At the end of 2008, the first massive import of German-born Aberdeen Angus cattle took place. It was a group of 120 heifers who found their new shelter at a newly established farm near Sibiu (Marpod Commune. This meat bovine nucleus has grown continuously through its own calves and imports, thus becoming the largest breeding and fattening farm for meat taverns in Romania.

Due to the fluctuation and lowering of the price of milk, many farmers started to opt for crossbreeding and purchases of cattle having the morpho - productive type of meat.

The formation and expansion of the Aberdeen Angus meat consumption market in Romania would lead to the education of consumer taste for good quality beef and the support of local breeders of this breed. Initially, industrial crosses with low-yielding cows from local breeds were used to obtain hybrids with good skills for meat production (Figure 2).

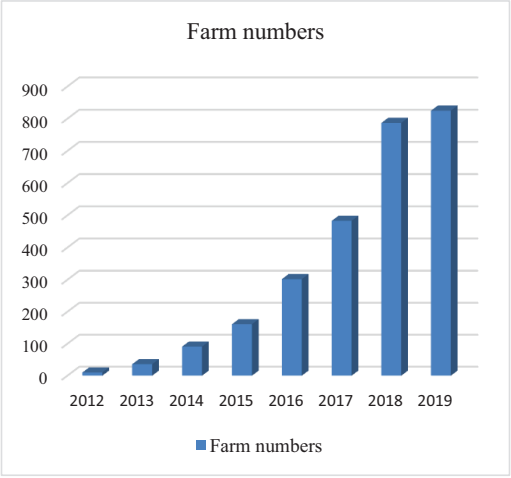

Figure 2. Evolution of Aberdeen Angus farms in Romania

The dramatic decrease in agricultural production has led us in the paradoxical situation of import, when we should have to export more, a key to the success of getting Romania's population and its economy out of the impasse. This neglect of the agricultural potential has resulted in the decline of the living standards of the population, especially in the rural area (Acatincai, 2004).

Aging of the rural population, the strong rural poverty, the poor infrastructure, the lack of production, the lack of markets, the lack of a strong and coherent agricultural policies do not support constructive few farmers left the farms to go out of state of subsistence (Marginean, 2012).

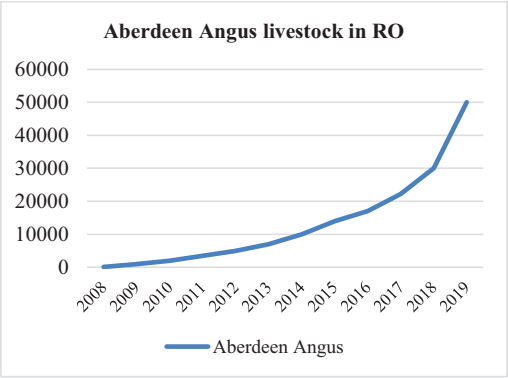

Figure 3. Evolution of Aberdeen Angus livestock cattles in Romania

By increasing the number of cattle specialized in the production of meat, it can become an important sector of agriculture in Romania (Figure 3, Table 1), with reference to meat quality requirements demanded in Europe and worldwide.

Table 1. World cattle inventory

Rank	Country	2018	% of world
1.	India	305.000.000	30,44%
2.	Brazil	232.350.000	23,19%
3.	China	96.850.000	9,67%
4.	U.S.A.	94.399.000	9,42%
5.	European Union	88.445.000	8,83%
6.	Argentina	53.765.000	5,37%
7.	Australia	25.500.000	2,55%
8.	Russia	18.380.000	1,83%
9.	Mexico	16.584.000	1,66%
10.	Turkey	14.500.000	1,45%
TOTAL		1.001.841.000 heads	

Since the worldwide population is alarmingly growing, the animal protein quality is increasingly sought after, especially in the developed countries where livestock meat is one of the sectors of agriculture considered to be an industry with huge potential for economic development and research (Ulrich, 2009).

Romania has got 237,500 km^2 area, consisting of a symmetrical relief, concentric and varied, with the main features of relief proportioned as follows: 31% mountains, 36% hills and plateaus, and 33% plains.

My conclusion is that Romania with the second surface of pasture in Europe, have a big potential to became a beef brand producer in Europe (Figure 4).

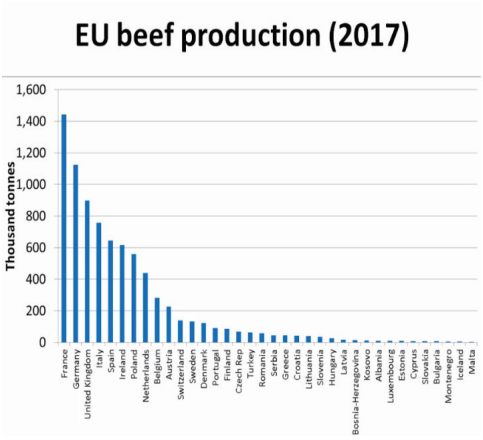

Figure 4. European beef production in 2017

Of the total Aberdeen Angus cattle population worldwide, 75% of this breed is in Australia, North America and South America. Cattle breeds directed towards meat production are in constant development, and their 70% of the population belong to the breed Angus cattle.

Worldwide, if we consider only the population growth and economic development of China where estimates predict an increase in meat consumption from 50 kg per capita / year currently being estimated in 2030 to reach consumption 70 kg per capita / year, the required annual required meat increased significantly.

The physiological and morphological-productive characters specific to Aberdeen Angus breed cattle are very suitable climatic condition of Romania (Mirita, 1982).

Romania should not be part of the countries that have to import substantial amounts of food, and the geographical configuration and the climate are favorable for the production to meet the needs of a population of two and a half times larger than the current population of Romania (Figure 5).

Producing beef on natural grasslands concomitantly with nature conservation may present a method to provide with a huge part of these demands. However, beef produced in this environment should not only show ecological value, but also have the basic quality attributes desired by consumers: shiny red color, little fat covering, tenderness, juiciness and a pleasant taste (Felicio, 1998).

Figure 5.Aberdeen Angus bull in Romania

In the most important reproduction farm for the Aberdeen Angus breed in Romania, the dynamics of body development are presented in Table 2.

Table 2 Dynamics of body development in reproduction females

Age	Average weight (kg)	Size at withers (cm)	Average daily gain (g)
Birth	35	70	-
Weaning (8months)	200	100	700
18 months	375	125	584
24 months	400	130	250
Multipurpose cows	550	135	850

A study by Personen et al. (2012) on the characteristics of the carcass and the quality meat of the Aberdeen Angus revealed the special potential of this breed (Table 3). In this experiment, the animals were fed *ad libitum* grass silage and concentrates based on barley and oats. The duration of the experiment was 345 days and the slaughter age 526 days. From the table 3 we note that the animals had a body weight of 285 kg at the time of fattening, and at the end of the experiment 705 kg, with a daily average gain of 1224 grams.

Table 3. The fattening parameters for Aberdeen Angus breed (Personen et al., 2012)

No.	Parameter	Value
1	Duration of the experiment (d)	345
2	Initial live weight (kg)	285
3	Final live weight (kg)	705
4	Live weight gain (g/day)	1224
5	Age of slaughter (d)	526
6	Carcass weight (kg)	391
7	Conformation score, EUROP	7.4
8	Fat score, EUROP	3.8

Moldovan (2012) tested the combining ability of the Aberdeen Angus breed in Romania. The results of the experiments on the ability to combine indigenous breeds (Bălţată Românească-BR, Brun de Maramureş B, Bălţată cu Negru Românească-BNR) with the Aberdeen Angus meat breed have led to different results (Table 4).

Table 4. Growth parameters of half breed obtained between Aberdeen Angus breed and local breeds in Romania (Moldovan, 2012)

Age	Birthweight (kg)	Final live weight (kg) at 14 months	Average daily gain (g)	Specific consume UNC/kg
BRXAA	30,11	633,03	1436	6,32
BXAA	30,53	644,11	1460	6,21
BNRXAA	28,58	597,89	1424	6,38

It is noted that half breed between the Aberdeen Angus breed and Brown of Maramures have achieved the best growth parameters. So, the final live weight at 14 months age was 644.11 kg, with 11 kg more than at Bălțată românescă X Aberdeen Angus (Figure 6).

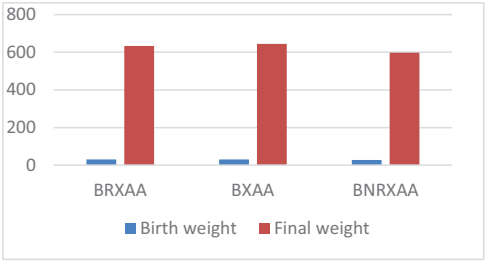

Figure 6.Growth parameters of half breed (local Romanian breeds and AA breeed)

These results lead to the conclusion that local cattle breeds in Romania show very good skills for meat in combination with the Aberdeen Angus breed.

The quality of carcasses obtained from the metisses can be improved by using the Aberdeen Angus breed using an industrial hybrid production scheme

CONCLUSIONS

Aberdeen Angus calves have low weights at birth (35 kg), but have a very good compensatory growth rate, which results in high weights at slaughter (700 kg). Average daily growth averages are on average 1200-1300 grams. It is a disease resistant breed and adapts very easily to different environmental

conditions. The carcasses weigh more than 390 kg, the slaughter yield is around 55%.
Due to the fat deposits between and within the muscle fibers, the meat is savory, and the look is marooning and preservation.
Romania is not one of the cattle meat consuming countries, with a meat consumption of 11 kg per person in 2010, but with such a natural potential, we can become producers and exporters of top countries in Europe and of the overpopulated countries from the other continents.

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