

ASSESSMENT OF BODY SIZE AND BREEDING PERFORMANCE IN OLD EUROPEAN PIG BREEDS

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Abstract

The study aimed an evaluation of body size and growth performance in the Mangalita breed which were compared with results obtained in different old pig breeds in Europe. The experimental group included 30 individuals, divided into 2 groups of 15 individuals, castrated males and females. The following characteristics were determined: body length, height at withers, live weight, age at slaughter weight, average daily gain, carcass weight and yield at slaughter. The results were compared with literature data from the East-Balkan Pigs, Iberic Pigs and Nero Siciliano breeds. The highest average weight and the largest body length was recorded in Mangalita males with 141.2 kg respectively (115.2 cm). The highest carcass weight was recorded at Iberic pigs (108.1kg). Although the production performances are not very high, the very good organic resistance, the great adaptability to various growing conditions and the excellent qualities of the meat are arguments in favor of the further growth of these two breeds.

Key words: old breed, pigs, body, performance

INTRODUCTION

When we talk about traditional breeds, we are talking about the old pig breeds whose phenotypes originate in the 19th century or older. Their appearance still presents a great variety in terms of length or height and, most obviously, color. In addition, traditional breeds have advantages in terms of high organic resistance, adaptability to different environmental conditions, good use of different sources of food, very good quality characteristics of the meat, such as juiciness, smell, appearance, and color, properties that are closely associated with a certain intramuscular synthesis of fat, which, in turn, is closely linked to the overall synthesis of body fat. Because productivity in pork production today focuses on improving daily average growth, food conversion, lean meat content and the proportion of valuable body regions, it is clear that traditional pork breeds are no longer competitive and have therefore

become populations, more or less rare in the meantime.

Mangalitsa is an old breed, specializes in the production of fat, formed in the Balkans, which was operated in Romania in large herds until 1950. Although in the past, there were four varieties of color, the breed currently has three color varieties: Blonde (the largest), Red (formed by crossing the breed Hungarian Szalontai and breed Mangalitsa, blonde variety) and Swallow Bellied (the back and flanks are black, the belly, chest and goiter are white or yellowish, made by crossing Mangalitsa, blonde variety with Szerémség breed). In Romania, research on Mangalitsa breed are few. Most [2], [5], [8], [9] refer to the reproductive potential of the breed and genetic characterization. They are very few papers that relate to the quality of meat of the Mangalitsa breed [10], [11].

The Iberian pig is a breed of pigs derived from the populations of ancestral domestic pigs in the Iberian Peninsula. For centuries, it has been widespread throughout Spain. At present, it is mainly grown in the southwest of the Peninsula: the west of Andalusia,

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Extremadura and the province of Salamanca. It is accepted that the Iberian pig is a single breed, but includes a large number of pig lines with red or black skin ("Negra Entrepelada", "Negra Lampina", "Valdesequera", "Retintas", "Torbiscal", "Alentejano" etc.), all perfectly adapted to the ecological environment of" Dehesa[4].

East Balkan swine, similarly to wild forms, are characterized with a late onset of maturity and their growth end by the age of 2.5 years. They reach a live body weight of 100 kg for about a year [6]. Danchev, 1984 [3] pointed out that East Balkan swine was phylogenetically able to utilize natural trophic resources with a low nutritive value.

The Nero Siciliano breed is a pig breed on the Mediterranean island of Sicily in southern Italy. It is one of the 5 indigenous breeds of pigs recognized by the Italian Ministry of Agriculture and Forestry that have survived the industrialization of commercial pigs. Of these, the Nero Siciliano pig is cultivated today in a small area of Sicily, with about 700 sows. Its survival is due both to the possibility of obtaining very good quality meat products and to adapting to difficult climatic and breeding conditions [1]

Considering the above we consider that it is absolutely necessary to know the productive parameters of the old pigs breeds. Knowing the values of these parameters will increase the productivity of these breeds by improving the growth conditions.

MATERIAL AND METHOD

In accordance with the stated purpose, one family farms from Iași county were studied the growing of the Mangalița breed. The research has been done on 30

individuals, 15 barrows (male pig castrated) and 15 gilts.

Within the farm, the semi-intensive breeding system is practiced, the pigs being fed with mixtures of concentrated feed, unbalanced energy-protein, with access to pasture. The individuals in the experimental group were tracked from weaning to the weight of about 145 kg. The experimental lot was raised in a large paddock, of about 500m², provided with a common storage, made of wood, where the pigs were given concentrated feed. Feeding was restricted, pigs receiving concentrated feed in the morning and evening, throughout the breeding period. The animals were weighed at weaning (about 50 days), 150 days, 350 days and 450 days. In order to determine the productive results obtained in Mangalița youth, the following productive indicators were calculated: body weight dynamics and average daily weight gain and fresh carcass weight.

The recorded data were analyzed and processed using the factorial ANOVA test.

The working method involved organizing lots of individuals, with weights and ages close. The experimental conditions were those commonly used in the semi-intensive growth system.

The results obtained were compared with experimental data from the literature related to breed: East-Balkan from Bulgaria, Iberic from Spain and Nero-Siciliano from Italy.

RESULTS AND DISCUSSION

The Mangalitsa pigs that were used in the experiment were growing at approximately 15 months old with an estimated weight of 141 kg. The results were compared with data from the literature.

Table 1 Average body size in old pig breeds

	Breeds						
	Mangalita		Iberic Pigs		East –Balkan Pigs		Nero Siciliano
	Male	Female	Male	Female	Male	Female	
Live weight (kg)	141.1	126.2	140.5	128.0	105.2	96.8	103.7
Days of age (days)	450		470		450		450
Body length (cm)	115.2	109.7	84.1	84.6	110.0	104.5	74.1
Height at withers (cm)	105.7	101.4	79.8	77.3	70.8	70.2	67.3

From the data presented in table 1 can be observed:

- The highest average weight was recorded in Mangalita males with 141.2 kg followed by Iberic males with 140.5 kg. The lowest weight was recorded in Nero-Siciliano individuals who weighed 103.7 kg at 450 days.

- The largest body length was recorded in Mangalita males (115.2 cm) followed by East-Balkan males (110 cm). The shortest

body length was recorded in the Nero-Siciliano race;

- The highest height at withers was recorded in Mangalita males with 105.7 cm. It is found that the differences from the other breeds are 20 or 30 cm.

The breeding performances registered in the Mangalita breed are presented in table 2. The results were compared with data from the literature.

Table 2 Breeding performance in old pig breeds

	Breeds						
	Mangalita		Iberic Pigs		East –Balkan Pigs		Nero Siciliano
	Male	Female	Male	Female	Male	Female	
Days of age (days)	450		470		450		448
Live weight (kg)	141.1	126.2	140.5	128.0	105.2	96.8	103.7
Average daily gain (g)	313	280	298	272	233	215	231

From the data presented in table 2 we can see a great variety of the average daily gain. The explanation may be due to the fact that traditional pig breeds are maintained on pasture and are fed small amounts of concentrated feed, which are usually not energy-balanced.

It is observed that the highest average daily increase was recorded in the Mangalita

breed (313 g at male) and the lowest in individuals at Nero-Siciliano breed (231 g).

For an overview of the studied breeds, the slaughter yield and the carcass weight of the Mangalita breed were calculated, the results being compared with the specialized literature.

Table 3 Carcass weight, in kg and %, at old pig breeds

	Breeds						
	Mangalita		IbericPigs		East –Balkan Pigs		Nero Siciliano
	Male	Female	Male	Female	Male	Female	
Live weight (kg)	141.1	126.2	140.5	128.0	105.2	96.8	103.7
Weight of carcass (kg)	106.3	94.2	108.1	95.4	78.1	70.8	77.3
Slaughter yield (%)	75.4	74.7	76.9	74.6	74.3	73.2	74.6

From the data presented in Table 3 it is observed that the data on slaughter yield were relatively close. The best slaughter yield was recorded in Iberic pigs (76.9%) and the lowest in East-Balkan pigs (74.3%). Similar results were recorded in terms of carcass weight. The highest carcass weight was recorded in Iberic pigs (108.1kg) and the lowest in Nero Siciliano pigs (77.3%).

CONCLUSIONS

From the data presented in the paper it is observed that these breeds do not excel in terms of productive characters. The Mangalita and other old pigs breed are a representative example for preserving endangered breeds. Due to the very good qualities of the meat and for the preservation of the diversity of the swine breeds, it is necessary to continue to grow these old pig breeds.

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