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# The Nebrodi Black Pig: description of the regional situation with particular attention to the environment and the techniques and types of farming

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**Abstract.** The Black Pig, bred in the Nebrodi, represents a familiar cultural heritage passed from previous generations. Although the breeding of modern breeds represents significant economic benefits, it is thanks to interventions of Department for Agriculture and Forestry of Sicily Region that it was possible to avoid the loss of the genetic heritage and the extinction. The peculiar sensory characteristics of the meat and specifically of the fat, combined with the typical of seasoning, make that the products are particularly appreciated by consumers. The objective of this search, that is part of a wider context, is to estimate the spread and the numerical abundance of the agricultural companies, in the productive categories in regional zone. The research involved 36 farms. From data obtained it is shown that the number of pigs is 4273, of which 526 sows (43.1%), 58 boars (1.36%), 1693 piglets younger than 4 months (39.6%), 1394 pigs between 4 and 12 months (32.6%), 602 pigs older than one year (14%), and an estimated average of an annual production of 4573 pigs. On this basis, it seems interesting to observe how the Nebrodi Black Pig farming it's becoming an economic reality in expansion. It is hoped that in future this may represent an added value to promote the area.

**Keywords.** Nebrodi black pig – Management – Livestock system.

**Le Porc Noir des Nebrodi: Description de la situation régionale avec une attention particulière à l'environnement et les techniques et modes d'élevage.**

**Résumé.** Le porc noir, élevé sur les Nebrodi, est un héritage familial transmis par les générations précédentes. Bien que l'élevage des races modernes présente un important avantage économique, c'est grâce aux interventions du Département pour l'agriculture et les forêts en Sicile, qu'il a été possible d'éviter la perte et l'extinction de ce patrimoine génétique. Les caractéristiques organoleptiques distinctives de la viande et de la graisse en particulier, combinées avec l'assaisonnement typique, font que les produits soient particulièrement appréciés par les consommateurs. L'objectif de cette recherche, qui s'inscrit dans un contexte plus large, est d'évaluer la diffusion et la quantité d'exploitations agricoles dans les différents secteurs productifs de la région. L'enquête a porté sur 36 exploitations agricoles et il en résulte que les porcs sont au nombre de 4273, dont 526 truies (43,1%), 58 verrats (1,36%) 1693 porcelets de moins de 4 mois (39,6%), 1394 porcs entre 4 et 12 mois (32,6%), 602 porcs de plus d'une année (14%), et on estime une production moyenne annuelle de 4573 porcs. Sur cette base, il semble intéressant de noter que l'élevage des porcs noirs des Nebrodi va devenir une réalité économique en expansion. On espère qu'à l'avenir, cela puisse représenter une valeur ajoutée pour promouvoir le terroir.

**Mots-clés.** Porc Noir des Nebrodi – Gestion d'entreprise – Modes d'élevage.

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## I – Introduction

The Black Pig bred in the Nebrodi's area represents a cultural heritage that has been

transmitted by previous generations. In the last decade, Sicilian Region's Agriculture and Forestry Department has been sensitive to issues related to breeding, processing and marketing of products that are obtained from this breed of pig. Already in 2005, it initiated a project to improve the breeding system, defense of livestock biodiversity as a factor for territory development. This particular interest has found its international expression in Qubic Animal Breeding project: Quality Biodiversity Innovation Competitiveness included in the 2007-2013 MED Programme. For nearly two decades, in order to obtain a major productivity and consequently a revenues higher, the pig farmers have used commercial pig breeds, and local breeds have been relegated to a breeding to more amateur type than economic. This situation, of course, has led to a reduction in the number of local breed. Today, the Black Pig is included in the list of breeds at risk of extinction. Besides, the Nebrodi's Black Pig is a slow food presidia that is particularly popular for both the processed products than fresh meat, for which since 2005 the procedure to have the PDO quality sign has been initiated.

According to data of ANAS, the Black Pig breeding in Sicily has a different distribution in the provinces of Enna, Messina, Palermo, Ragusa and Siracusa (Table 1).

**Table 1. Distribution of black pig breeding in Sicily**

District	Farms Number	Percentage
Enna	2	5.1 %
Messina	24	61.5 %
Palermo	6	15.4 %
Ragusa	3	7.7 %
Siracusa	4	10.3 %
Total	39	

In the province of Messina there are the greatest number of officially recorded breedings (24 - 61.5%), but it is estimated that in territory they are present over a hundred. The spread of these breedings has its larger place in the territory of the Nebrodi' s Regional Park. The Nebrodi' s Black Pig find the best conditions for adaptability in the orographic and climate features of this region.

The aim of the survey, which is part of a broader study, is to provide informations on the area where the Nebrodi's Black Pig is bred mainly, on its distribution and abundance of animals in the involved farms.

## **II – Materials and methods**

The survey involves 36 farms of Nebrodi's Black Pig located in municipalities of Sinagra, Mirto, Militello Rosmarino, S.Fratello, Longi, Frazzanò, Ucria, Castell'Umberto, Tortorici, Alcara Li Fusi, Naso, Caronia, Floresta, Capizzi and S. Lucia del Mela. A large part of them are located within the protected area of the Nebrodi Park (Fig.1 ).

The data collection of the farms of the sample involved was obtained through an interview to the Nebrodi black pig farmers.

The structured interview consists of the following areas of investigation:

- data about the environment (orographic description, type of vegetation zone elevations);
- data about management system;
- data on the number of animals on farms.



Fig. 1 Georeference of farms and area of Nebrodi Park.

### III – Results

#### 1. Environment

Nebrodi's Regional Park, established in 1993, with its 86,000 ha is the largest protected natural area of Sicily. The Nebrodi, Madonie and Peloritani mountains constitute the Sicilian Apennines. They border on the north by the Tyrrhenian Sea, while its southern boundary is marked by Etna mountain, in particular from the Alcantara and Simeto rivers. Altimetric profile changes from few meters to 1847 meters (Soro mountain). Other mountains are Serra del Re (1754 m), Pizzo Fau (1686 m) and Serra Pignataro (1661 m). The elements characterizing the Nebrodi's landscape are the asymmetry of each slope, the different shaping of the mountains, the lush vegetation and wetlands and the presence of extensive areas of clay rocks and sandstone. Where there are the limestones, the landscape takes on aspects Dolomites like, with irregular outlines. This is the case of San Fratello mountain, and especially the Rocche of Crasto (1315 m).

The presence of forest has a significant impact on the climate of the Nebrodi area, which is characterized by long and harsh winters, and warm summers but not sultry weather. Temperatures in the hinterland generally remain between 10 and 12°C in the middle and high mountains, while the rainfall has a range from a minimum of 600 mm to a maximum of 1400 mm. The Nebrodi flora is related to slope (Table 2).

Table 2. Nebrodi vegetation

<b>Plain</b> Coastline and hills behind, up to 700-800 meters above sea level band thermomediterranean	The vegetation is represented by forests of evergreen <i>Quercus suber</i> alternating areas of Mediterranean scrub, which includes heather, the gorse ( <i>Calycotome spinosa</i> ), strawberry tree ( <i>Arbutus unedo</i> ), myrtle ( <i>Myrtus communis</i> ), euphorbia ( <i>Euphorbia dendroides</i> ), mastic ( <i>Pistacia lentiscus</i> ) and oak ( <i>Quercus ilex</i> ).
<b>Hill</b> Vegetative strip above, up to an altitude of 1000-1200 m above sea level band mesomediterranean	Formation of deciduous forests of <i>Quercus gussonei</i> , and a type of oak, <i>Quercus</i> and congested in some areas, the oak ( <i>Quercus ilex</i> ). In areas not forested blackthorn ( <i>Prunus spinosa</i> ), hawthorn ( <i>Crataegus monogyna</i> ), <i>Rosa canina</i> , <i>Rosa sempervirens</i> , the wild apple ( <i>Malus sylvestris</i> ), <i>Pyrus</i> and <i>Rubus amygdaliformis ulmifolius</i> .
<b>Mountain</b> Beyond 1200 we enter the mountain area proper band supramediterranea.	Extensive woodlands of oak ( <i>Quercus cerris</i> ) and beech ( <i>Fagus sylvatica</i> ) and the presence of mountain maple ( <i>Acer pseudoplatanus</i> ). The luxuriant underwood has a number of plant species among which are the holly ( <i>Ilex aquifolium</i> ), butcher's broom ( <i>Ruscus aculeatus</i> ), hawthorn ( <i>Crataegus monogyna</i> ) and yew ( <i>Taxus baccata</i> ).

# 1. Management system

The pasture management is structured as following (Table 3, A): 10 farms use a permanent agronomic system (38%), while 16 farms use a turnover system (62%). In the farms, where is present forest, it is an important source of nutrition. In none of farms is observed soil erosion.

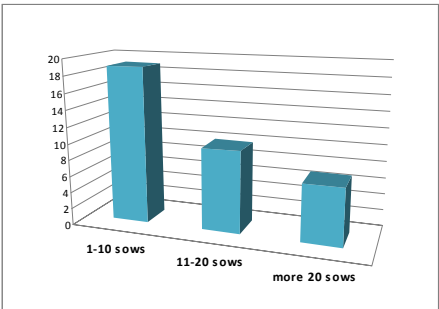
In farms with forest area (Table 3, B), 19 of them (58%) use to let the pigs in forest during all year, while 14 of them (42%) use to let the pigs in forest only in autumn-winter period or spring-summer, depending from climate conditions.

**Table 3. Agronomic management system of pastures and permanence in forest areas**

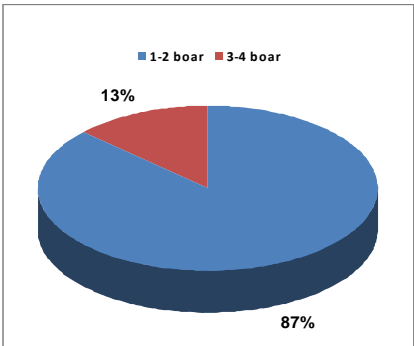
<b>A</b>	Pasture agronomic system permanently	38 %
	Pasture agronomic system turnover	62 %
<b>B</b>	Season	42 %
	All year	58 %

# 2. Number of animals in farms

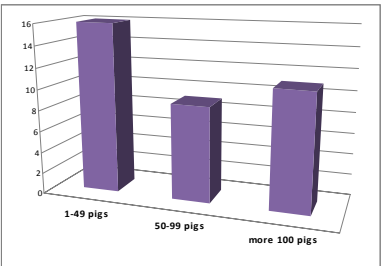
The farms are divides by number of sows (Fig. 3 A), boars (Fig. 3 B) and production annual average (Fig. 3 C).



**Fig. 3 A. Farm sizes expressed as the number of sows per class.**



**Fig. 3 B. Number of boar in farm.**



**Fig. 3 C. Breeding size annual average.**

As shown in Fig. 3, 83.3% of farms have fewer than 20 sows, while 87% have 1 or 2 boars. The average number of sows by farm is 14.6. Most farms have a production about 50 pigs by year.

At the time of the survey, in the farms there were about 4573 pigs of different commercial category and classified by class number of sows.

**Table 4. Average annual production**

	Number of sows			Total
	0 – 10 (M ± SD)	11 – 20 (M ± SD)	> 20 (M ± SD)	
Pigs < 4 months	23,2 ± 11,5	47,5 ± 23,3	111 ± 48,5	1693
Pigs between 4 and 12 months	17,4 ± 11,3	34 ± 21,4	103,5 ± 61,3	1394
Pigs > 12 months	3,5 ± 7,7	24 ± 24,1	42,1 ± 60,1	602
N° of boars	1,1 ± 1,04	1,7 ± 0,64	2,85 ± 0,84	58
Sows / Boars	4,52 ± 1,76	9,85 ± 3,43	14,98 ± 6,15	526/58=9,06
Estimated average annual production	44,36 ± 15,1	131 ± 65,8	345,7 ± 169,2	4573

The average annual production by sow is 8.7 piglets. The average of annual production by farm is 127 pigs. The rate sows/boars by farm is 9.1. The 89% of the farmers do not make crossbred with other races.

## IV – Conclusions

Thanks to the interest of the Sicilian Region's Agriculture and Forestry Department and to the initiative carried out to the protection of this local breed, it is interesting to note that this data suggest a productive reality rather satisfactory. It is certainly a point of starting for a real push towards an increase in the chain of production and marketing of excellence local products obtained from this autochthonous breed.

The survey, in fact, shows a growing awareness of the farmer towards genetic resources, as well as data highlight:

89% of farmers are aware that it is extremely important to keep the animals in purity not crossbreeding them with other races. This is certainly in favor of "quality". On the other hand, the road is still long in order to recognize fully the products derived by this animals. It is necessary, however, a deeper understanding of reality and of the territorial and economic management in order to define the parameters most relevant to the achievement of high quality products. Proper visibility of these products also means protecting and ensuring food security that consumer requires increasingly persistence.

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