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THE QUALITY OF MEAT IN SOME HYBRIDES PIG

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Abstract

Aspects commonly found in the literature on meat quality of swine, shows the fact that, in a large number of qualitative peculiarities of muscle tissue, it can select the Napole Technological Yield as some of the most important genetic elements. These parameters are closely interdependent with pH at 24 hours in the meat after slaughter. In this work, the research has been conducted on 40 samples, taken from the semimembranos muscles from Perhib, F1 hybrids (Marele AlbxLandrace) xPietrain and F1 (Marele AlbxLandrace) xSeghers for the determination of Napole Technological Yield. Methods used to analyze the parameters listed are those in the literature. Age of the animals on slaughter was 183-185 days. The results put in evidence that the F1xPietrain hybrid have RN- in their genotype.

Key words: *Genetic type, pig meat, quality of meat*

INTRODUCTION

Quality of pork is conditioned by many factors. Some of them act in the animal's life, others after killing it. Thus, race, sex, age, state of maintenance, etc., are decisive factors on meat quality, and nature, direction and speed of development of biochemical processes in muscle tissue after suppression of animal life, have an important role. Factors influencing meat quality can be grouped into: farmed factors, genetic factors, factors related to preparing pigs for slaughter (transport, fasting, etc.) and factors in the slaughterhouse. Pig meat consumption presents a significant growth and at the same time establishes a growth of consumer preferences for a good quality, to satisfy the tastes of the refined and more of them and to ensure a healthy and balanced nutrition.

Technological and sensory quality of pork meat is influenced by various factors including genetic.

Thus, the pH of meat recorded after slaughter, which has a strong effect on indices of meat quality is mainly influenced by genetic factors, major genes N/n and RN^-/rn^+ [6] . Since 1985, RTN is, due to correlation with the index of meat quality, selection criteria for certain populations of swine [1,2].

RN^- gene has been reported since 1985 by using an original method for measuring the efficiency of boiling, a method called "Napole Technological yield" (RTN).

Based on this method were considered to gene RN-free animals, animals which attained a value of 91% higher RTN and animals-the carrier of the RN gene whose RTN was of less than 91%.

RN-gene effect is to abnormal increase the amount of glycogen after slaughtered by decomposition to the level of lactic acid, causing a decrease of pH in meat at 24 hours, thus reducing the efficiency of meat technology [5].

Knowing the influence of genetic factors on meat quality in pigs, we have proposed in this paper to study the effect of major genes on meat quality from some populations of swine and commercial hybrid in Romania.

In this work, the research has been conducted on 40 samples, taken from the semimembranos muscles from breeds Marele Alb, Landrace, Syntetic Line 345 Periş, Duroc, Hampshire, Perhib, F1(Marele AlbxLandrace)xPietrain and

F1 (Marele AlbxLandrace)xSeghers for the determination of RTN. Methods used to analyze the parameters listed are those in the literature (Georgescu, Banu, Oţel, 2000, 1986). Age of the animals on slaughter was 183-185 days. Also, it was determinate pH of meat at 24 hours after slaughter (pH_{24}) and the phenotipical correlation between pH_{24} and RTN (using classical statistic methods).

MATERIAL AND METHOD

In this work, the research has been conducted on 40 samples, taken from the semimembranos muscles from hybreeds Perhib, F1(Marele AlbxLandrace) x Pietrain and F1 (Marele AlbxLandrace)xSeghers for the determination of RTN. Methods used to analyze the parameters listed are those in the literature [3,4]. Age of the animals on slaughter was 183-185 days. Also, it was determinate pH of meat at 24 hours after slaughter (pH_{24}) and the phenotipical correlation between pH_{24} and RTN (using classical statistic methods).

RESULTS AND DISCUSSIONS

In Table 1 are presented RTN values for samples of semimembranosus muscle from pig genetic types studied.

Table 1. RTN values from studied genetic types

Genetic type	n	RTN $\bar{X} \pm S_{\bar{X}}$
Perhib	40	95.85 ± 1.023
F1xPietrain	40	89.07 ± 1.112
F1xSeghers	40	94.90 ± 0.879

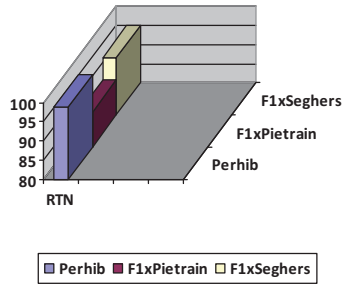

Fig.1. RTN values from genetic studied hybreeds

From results presented in Table 1 and Fig. 1 we can see that most analyzed pig genetic types presents higher RTN values of 91%, which advocates for the absence of RN^- gene. The commercial hybrid F1xPietrain (89.07 ± 1.112) based on RTN values can be suspected the presence of RN^- gene, with all the consequences of technological properties of meat.

RTN values confirm the results of other studies that have concluded that this breed is genetically predisposed to exudative myopathy and settled by other methods that is the bearer of the RN gene.

According to previous research reports that between different genotypes for susceptibility to stress the important difference in the quality indices of the meat registers in the pH, making it, in many breeding companies, selection criteria (in slaughterhouse) to identify animals susceptible to stress.

Thus, we present in Table 2 the values of pH at 24 hours for samples of semimembranosus muscle from pig genetic types studied.

Very important to finalize the selection criteria is the degree of interdependence between RTN and pH value at 24 hours [7]. Thus, we present in Table 3 phenotypic correlations between the two parameters.

Analyzing correlations between RTN and pH_{24}, their values advocates RN gene absence from most types of analyzed genetic type, except hybrid F1xSeghers.

Table 2. pH at 24 hours values from studied genetic types

Genetic type	n	pH_{24}
Perhib	40	5.700
F1xPietrain	40	5.380
F1xSeghers	40	5.216

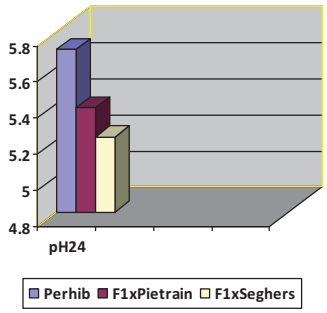

Fig.2. pH_{24} values from genetic studied hybreeds

Table 3. The interdependence between RTN and pH_{24}

Genetic type	n	r_F RTN/pH_{24}
Perhib	40	0.67
F1xPietrain	40	0.57
F1xSeghers	40	0.55

All breeds has a high quality of meat that allows using of those carcasses to achieve various preparations, such as ham of "Paris" type. Regarding hybrids, the RTN good values were obtained to Perhib and F1xSeghers. To combination F1xPietrain, RTN has a low value, due to race Pietrain, which is known to be stress gene bearer.

CONCLUSIONS

RTN values, pH_{24} and correlations between the two parameters of studied breeds and hybrids, places these animals in category "animals that produce quality carcasses," except F1xSeghers hybrid.

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