INFLUENCE OF AGE AND WEIGHT AT SLAUGHTER OVER MEAT QUALITY IN CONDITIONS OF OPTIMUM AMBIENT TEMPERATURE

INFLUENȚA VÂRSTEI ŞI GREUTĂȚII LA SACRIFICARE ASUPRA CALITĂȚII CĂRNII ÎN CONDIȚII DE TEMPERATURĂ AMBIENTALĂ OPTIMĂ

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Abstract *Meat produced from pigs is characterized by its nutritional value, due the existence in its chemical composition, of protein and fat which gives it special properties. Its distinguished by taste and tenderness being required of his consumers both in fresh and preserved stage by different methods. For the low hygroscopicity degree, having high fat is well suited to producing a wide range of products with long conservation and taste qualities much appreciated by consumers. Animals slaughtered at a weight of 115 kg produce top quality meat, protein percentage being 21.88% and 2.21% fat. Meat has the largest amount of water 74.66 which prints a juicy tenderness and pH has good absolute value of 5.70.*

Key words: *pigs, slaughter, age, weight, optimum temperature, meat*

INTRODUCTION

Fattening pigs in small family farms to more over 115 kg weight changes the ratio meat/fat by increasing the animal fat on the backs of animals and large deposits on muscle fiber, which although improving meat quality, it is produced with high energy costs, which contributes to inefficient operation of this system of pig breeding and exploitation, in family farms, which generally only provide their own consumption and sometimes only the excess is sold on the market [1,4].

Swine growth is a tradition for Romanian area, they capitalizing on optimally existing resources in private farms and small family exploitations providing energy and protein source for this, in economic efficiency, conditions, because feed resources are obtained at reasonable prices.

Swine have the biological and economic special value and if the biological material is purchased from large farms producing valuable genetic material, it is obtained from this species 24 to 28 piglets per year due to high prolificacy and early precocity (of 6-7 months reach sexual maturity) and good adaptability to environmental conditions, sometimes precarious, due to special resistance obtained during generations, to the diseases that cause significant damage to other farm species [2].

Because of changes that have occurred in human food, animal fat consumption reducing in detriment of vegetal ones appeared a new trend in growth of pigs for meat, which aims to slaughter animals on smaller weights to obtain carcass with a smaller proportion of fat and higher amounts of meat.

Use for fattening in family farms of a valuable genetic material obtained in specialized units witch performing large protein increases in carcass in detriment of fat, making that weight on killing to reduce and the meat - fat report to improve and age at slaughter to be 8-10 months [3,5].

Knowledge of genetic and environmental factors witch affects pig production exploated in small family farms, for own meat consumption and for sale, including weight and age at slaughter are of great importance for both genetic material manufacturers and of meat producers from small farms, because achieving daily higher average in economic terms positively influence the meat in carcass level, carcass quality and reduction of fat percent by shortening the fattening period.

MATERIAL AND METHOD

Studies were conducted on commercial pigs in a specialized unit with closed circuit in witch we have followed some quality indices of shell and meat according to slaughter weight and age, trying to find the optimal age in terms of farm for slaughter, depending on age and weight of the animal.

Were determined: - the percentage of water in meat, fat, protein from meat of pigs slaughtered at weights of 115-135 kg, meat pH, dry matter content, protein, fat and minerals.

RESULTS AND DISCUTIONS

Achieving some quality carcass, with high percentage of meat is a major concern for growers who want to capitalize on market the surplus of production, because the current rules provide that assessment of meat to be made in specialized units, with respect of veterinary procedures, and payment to be made in terms of percentage of lean meat in carcass and not by the living animal weight.

Were slaughtered 50 head commercial pigs of different ages and weights, aiming to influence these parameters on meat quality. The results obteind are are presented in Table 1.

Table 1. Meat quality depending on of pigs age and weight at slaughter

Age	**Medium weight kg**	**Heads Nr.**	**pH-ul of meat**	**Meat content:**			
				Water	**Proteins**	**Fats**	**Ash**
				%			
175	115	15	5,70	74,66	21,88	2,21	1,25
185	120	7	5,72	74,65	21,75	2,32	1,28
200	125	7	5,75	74,60	21,68	2,68	1,30
210	130	13	5,75	74,52	21,08	3,10	1,30
215	135	8	5,80	74,40	21,00	3,30	1,31

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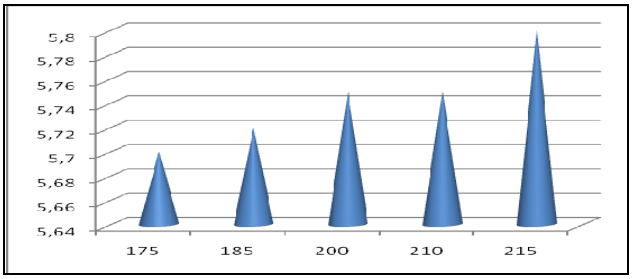


Figure 1. Meat pH depending on the age and weight at slaughter

The results reveal that as the owners increasing age and weight of animals for slaughter the meat quality is deteriorating and economy of exploitation decreases, which leads us to conclude that to get a good price for delivery at slaughter and objective appraisal of carcass, to sacrifice pigs at 115 kg weighing when the economic and quality results of the meat are the best.

Note that by increasing the weight and age at slaughter over the weight considered by us to be optimal, animal body content changes in the share of components (dry matter, protein, fat) and energy value of meat. (Table 2).

Table 2. The weight of some body components according to age and body weight at slaughter

The living weight kg	**Age days**	**Body components**		
		Dry substance	**Proteins**	**Fats**
115	175	51,63	14,42	31,75
120	185	51,88	14,38	31,88
125	200	52,07	14,32	32,29
130	210	52,35	14,01	32,58
135	215	52,80	13,88	32,62

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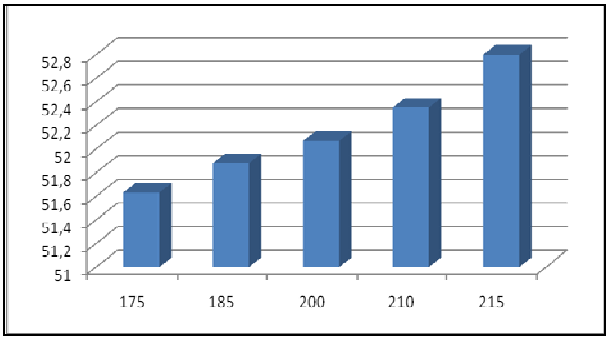


Figure 2. The dry substance content of meat by the age of slaughter

At the age of 175 days and average weight of 115 kg dry substance represents 51.63% to 52.80% by most weight at slaughter. Although at the slaughter weight of 135 kg dry substance rate is highest level the quality meat is not the best, because the amount of fat percently increased in detriment of protein and for realization of a kg of fat is consuming more resources comparison with protein which leads to higher expenses for body weight of animal until fattening up so high.

The percent of protein register decreasing content with age and weight gain of animals, this component reducing its share of increased growth in the formation of fat deposits, because at this age animals have completed their growth. The optimal ratio is recorded at about 175 days when the percentage of protein reached 14.42% and fat 31.71% and dry matter are 51-52% of animal body.

Even if from the pigs slaughtered at weight of 135 kg traditional products are obtained, in particular ham, at higher weights the quality of this is lower than those obtained by sacrificing animals at lower weights and ages.

Age of 175 days and average slaughter weight of pigs form pig farms, 115 kg, are considered to be optimal to satisfying needs, when making the best indicators of feed conversion and meat is obtained meat witch is satisfying the requirements of processing for obtaining traditional products.

The percentage of water in meat reduces with animals shrink in age and with increased slaughter weight and pH recorded an upward trend in the weight at slaughter of pigs, reaching 5.80 by the average weight of 135 kg when and the amount of dry meat reaches 52.80%.

CONCLUSIONS

Increase the percentage of dry substance in body not resulted an improvment of meat quality but increase its energy value by the higher percentage of fat at the expense of protein deposits, action that takes place with high energy costs in detriment of the economic efficiency exploitation in pigs operation fattening household farm system to ensure readiness for self-consumption of meat market.

With older animals subject fattening increase the percentage of dry substance by weight gain, protein has a declining trend. However the amount of fat it has a growing trend.

Superior meat quality is obtained when the animals are sacrificed at the 115 kg weight when carrying the maximum values for protein and lower fat.

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