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Complex assessment of meat efficiency and quality of meat rabbit breed "Chinchilla"

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ABSTRACT

The article presents the results study of meat efficiency rabbits breed "Chinchilla". Produced meat is evaluated on physicochemical, organoleptic and technological characteristics. Recommendations are given on the use of meat rabbits for the production of dietetic foods.
Keywords: rabbit meat, dietary products, meat products

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INTRODUCTION

In recent years, more and more began to talk about rabbit breeding, as one of the most promising sectors of livestock in Russia. Rabbit meat is a dietary product, since It contains little fat, connective tissue, cholesterol, and sodium salts. Rabbit meat is rich in protein, iron, phosphorus, vitamins, close-grained and it is highly digestible.

Currently rabbits "Chinchilla" are among the most popular for breeding. Chinchilla Rabbits have a high meat productivity and very beautiful skin. Chinchillas require minimal maintenance and have a high survival rate. They eat hay, grass, twigs, vegetables, fruit, grain, feed, seed husks. In feed should be added to mineral supplements. The live weight of adults ranges from 2.5-3 kg to 6-7 kg. The breed is characterized by early maturity, high fecundity, and excellent taste of meat. The breed is adapted to the climatic conditions of the Krasnodar Territory.

However, technological properties and nutritional value of the meat of this species are poorly understood, as it was originally bred for fur.

RESULTS AND DISCUSSION

Slaughter of rabbits was carried out in a small farm, which has been breeding rabbits of this breed.

Before slaughter rabbits were weighed. Carcasses and offal of rabbits were weighed after the slaughter and processing.

Table 1: Average mass of carcasses and offals, g

Index	Value
The live weight before slaughter	3200,0
The weight of carcasses	1478,8
Weight of liver	76,0
Weight of kidney	14,2
Weight of heart	12,4
Weight of lung	13,5

The results of calculation of slaughter output carcasses and offal of rabbit are shown in Table 2.

Table 2: Results of estimation slaughter carcass yield and offals of rabbit

Slaughter yield	Index,%
Yield of the rabbit carcasses	46,2
Out offal:	
liver	5,1
kidneys	1
heart	0,8
lungs	0,9

Slaughter yield rabbit breed "Chinchilla" exceeds the yield of meat comparison with other breeds of rabbits. Next studies were carried out the chemical composition of rabbit meat.

Table 3: Physical and chemical properties of rabbit meat

Indicators	Normative documents	Norma content,%	Actual content,%
Fat content,%	GOST 23042-86	6,3	0,8
Mass fraction of protein,%	GOST 25011-81	17,5	16,81
Moisture content, %	GOST R 51479-99	75,1	72,6

Analysis of the results of physico-chemical parameters of rabbit meat indicate that all samples correspond to the parameters of GOST. Mass fraction of fat, protein and moisture of the investigated meat corresponds to the normal percentage of these indicators.

Fat rabbits mostly deposited in the abdominal cavity - nearby kidney, stomach, as well behind the scapula and can be easily separated. On the surface, the point of it is almost there. A moderate amount of fat present in muscle tissue, plays an important biological role in human nutrition.

At a high content of valuable protein rabbit meat at the same time a relatively low-calorie, which is especially important for older people and for those who are likely to be overweight.

By and large amount of moisture can be seen that rabbit meat has the most valued property as tenderness of the meat.

The quality of rabbit meat is defined by amino acids such as tryptophan and hydroxyproline. Tryptophan is found only in high-grade proteins, hydroxyproline - proteins in the connective tissue. The greater the ratio of tryptophan to hydroxyproline, the higher biological value protein rabbit meat.

In relation to the tryptophan and hydroxyproline of proteins to the inferior meat rabbit meat is superior to other animal species.

The cholesterol content in rabbit is significantly lower than the other type of meat.

Medics are increasingly concerned about the incidence of people of different ages, atherosclerosis, hepatitis, cholecystitis based is often an imbalance of nutrients in the body, impaired fat metabolism.

Rabbit meat is fully consistent with the task to improve the usefulness of the protein supply and reduce the level of fat in the diet, especially saturated.

Next studies were conducted rabbit meat on content of toxic elements.

Таблица 4: Токсичные элементы, мг/кг в мясе кроликов

Indicators	Normative documents	The permissible level	The results of tests
Lead	GOST 30178-96	Не более 0,5	Less than the detection limit (0,01)
Cadmium	GOST 30178-96	Не более 0,05	Less than the detection limit (0,01)
Mercury	MI 5178-90	No more 0,03	Less than the detection limit (0,005)

Analysis of the results of the test rabbit meat on the content of heavy metals indicate that all samples correspond to the maximum allowable concentration standards for the content of these indicators.

For characteristics of quality rabbit meat very important factors are value pH, water content and water binding capacity determining the appropriate organoleptic properties. Water binding capacity depends on several factors: the age of the animal, the ratio of moisture and fat, meat degree of autolysis, freezing

conditions, pH, the amount of proteins, including the content and the degree of solubility of myofibrillar proteins and fibrillar with high swelling capacity.

Table 5: Technological characteristics of rabbit meat

Index	Value
Water retention capacity%	57,2
pH (1 hours)	5,7

The table shows that the meat has a high water holding capacity and pH value in this case is the determining factor in the preservation of meat.

The pleasant smell and taste inherent in meat rabbits are caused by a relatively high content of nitrogenous extractives, the content of which is 2%. These include creatine, creatinine, carnitine, purine base, inosine oic acid and others.

Among the nitrogen-free extractives the most important is glycogen, sugars and acids. This group of organic compounds proceeds when cooked in broth, has physiological importance, as is having a positive effect on the secretory activity of digestive glands of human organs.

The composition rabbit meat include minerals and vitamins. High mineral content due to the presence of sufficiently large amounts of potassium, magnesium and phosphorus. High concentrations of these elements, as well as iron and iodine favorably affects bioavailability of this type of meat.

A significant vitamin content in rabbit meat can be recommended for the production of special foods.

Sensory evaluation was conducted in accordance with GOST 20235.0-74 "Meat rabbits. sampling methods. Sensory methods for the determination of freshness".

The results of organoleptic evaluation of meat carcasses rabbits compared with the characteristics given in Table 6.

Table 6: Characteristic features of rabbit meat

Name of indicators	Attributes of meat (carcasses) rabbits		
	fresh	questionable freshness	stale
Appearance and color: the surface of the carcass	Has crust drying pale pink	Some pieces moistened slightly sticky, slightly darkened	Slimy grayish-brown
and the inner casing adipose tissue	Yellowish-white	Yellowish-white	Grayish-white
serous membrane of the abdominal cavity	Wet, shiny	No gloss, sticky, there may be a small amount of slime and mold	Without shine, covered with slime mold
Muscles on the cut	Slightly moist, do not leave wet spots on filter paper, light pink color	Wet, wet stain is left on the filter paper, slightly sticky, dark red	Wet, wet stain is left on the filter paper, sticky, red-brown
Consistency	Muscles tight, elastic, pressure-sensitive fingers the way quickly leveled pit; fat tight	Muscles are less dense and less elastic than that of fresh carcasses, while pressing a finger formed pit is leveled slowly; soft fat	Muscles flabby, pressure-sensitive fingers the way the fovea is not aligned; soft fat
Smell	Specific, characteristic fresh meat rabbits	A musty, most pronounced in the abdominal cavity	Putrid, is most pronounced in the

			abdominal cavity
Transparency and flavor broth	Transparent, aromatic	Clear or cloudy, with a slight unpleasant odor	The cloudy, with a lot of flakes, with a sharp, unpleasant odor

As a result of sensory evaluation, it was found that the product complies with the requirements of the standard.

The information on the physico-chemical composition of rabbit meat allows to prove the feasibility of the most complete of its use for the production of a wide range of meat products with high biological value.

Analysis proteins of rabbit meat has shown that it is characterized by the highest (16.81%) protein content among the most common types of meat raw materials with low fat content (0.8%), which defines it as a low-calorie raw materials for the production of health food.

CONCLUSION

Based on this analysis, we can conclude that rabbit meat has high technological characteristics and nutritional value, and recommend for small farmers to grow rabbits breed "Chinchilla" for the production of dietary, high protein and safe meat raw materials for the manufacture of meat products, including functional purpose.

REFERENCES

[1] Natalja Jurevna Sarbatova, Vladimir Jurevich Frolov, Olga Vladimirovna Sycheva, and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2015;6(4):962-965.
[2] Vladimir Jur'evich Frolov and Denis Petrovich Sysoev. Res J Pharm Biol Chem Sci 2016;7(1):1264 -1271.
[3] Natal'ja Jur'evna Sarbatova, Vladimir Jur'evich Frolov, Olga Vladimirovna Sycheva and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2016;7(2):534-538.
[4] Sadovoy, V., Omarov, R., Shlykov, S., Shchedrina, T. Assessment compliance of qualitative food characteristics to standard requirements. Engineering for Rural Development Volume 2016-January, 2016, Pages 360-363.
[5] Sergei Nikolaevich Shlykov, Ivan Fedorovich Gorlov, Viktor Ivanovich Guzenko, Vladimir Anatol'yevich Meshcheryakov, and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2016;7(4):1715-1719.
[6] Sergei Nikolaevich Shlykov, Ivan Fedorovich Gorlov, Viktor Ivanovich Guzenko, Anna Viktorovna Morgunova, and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2016;7(4):1714-1717.
[7] Ivan Fedorovich Gorlov, Anatolii Timofeevich Lebedev, Vitaly Yurievich Galkov, Alexander Viktorovich Orlyanskiy and Sergei Nikolaevich Shlykov. Res J Pharm Biol Chem Sci 2016;7(5):2518 -2522.
[8] Ivan Fedorovich Gorlov, Vladimir Ivanovich Trukhachev, Alexandr Vasil'evich Randelin, Marina Ivanovna Slozhenkina and Sergei Nikolaevich Shlykov. Res J Pharm Biol Chem Sci 2016;7(3):2323 -2329.