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Morphometric Properties Of The Shoulder Bone In The Postnatal Ontogenesis Of Rabbits In The Meat Direction

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Summary

The linear dimensions and absolute values of the veight of the humerus in the postnatal ontogenesis of rabbits of the gray giant, vhite giant and flander breeds vere studied. The specific dynamics of grovth of morphometric parameters of the humerus of rabbits in postnatal development vas revealed. It vas observed that the absolute indicators of the mass of the shoulder bone, especially in rabbits of the 1st and 3rd groups after 21 days of postnatal ontogenesis, are greater than in the 2nd group

Keywords: rabbit, gray giant, vhite giant and flander, humerus, postnatal ontogeny, length, veight, grovth rate, linear parameter, absolute index, absolute veight.

Introduction. Today, the demand for meat and meat products in our country is growing. Therefore, special attention is paid to the field of rabbit breeding, especially the feeding and breeding of rabbits for meat. Rabbit breeding is currently the fastest growing sector of animal husbandry, providing the population with the largest percentage of products that are a complete source of valuable animal protein. Due to this, the rapid growth and high productivity of modern gray giant rabbits is characterized by low resource consumption and low cost of rabbit meat compared to other types of meat production.

The study of their biological properties, the laws of development in postnatal ontogenesis and their rational use are of great scientific and practical importance for obtaining quality and more products from agriculture and domestic animals. In particular, taking into account the morpho-physiological changes in the rabbit's body at different physiological stages of postnatal development in the production of high quality products from the rabbit network allows to set this field on a scientific basis. In addition, rabbits are also important in conducting experimental research experiments as a laboratory animal.

Rabbits play a major role in the world economy and consumption. For example, despite the low consumption of rabbit meat in China, the country is a world leader in its production. In Chinese rabbit breeding, special attention is paid to the care of fur and tivit breeds. The second place is taken by Italy. The rate of consumption of rabbit meat per capita (5.5-6 kg per year) also belongs to the Italians. This

figure is 2.5-3 kg in France, Germany and Hungary, and in these countries 65% of the product is produced by the cluster method [4, 9].

"According to the current trend of healthy eating and the recommendation of the World Health Organization on the norm of dietary meat consumption, 5% of the meat consumed by a person during the year, or 4.5 kilograms, should be rabbit meat," he said. Therefore, there is a theoretical demand for 150,000 tons of rabbit meat a year in the domestic market [3, 7, 8].

According to the data, 1 kg of rabbit meat in terms of nutrition is equal to 1.45 kg of the best beef. It also differs from sheep, cattle and other animals in the low cholesterol content of its meat. 90% of the protein in it is fully absorbed by the human body. It is also rich in mineral salts, calcium and phosphorus, and has good taste. Due to similar positive properties, rabbit meat is recommended for people with diseases of the liver, stomach, cardiovascular system, diabetes, allergies [2, 5, 6].

It has been scientifically proven that the maintenance of physiological homeostasis in rabbits during puberty occurs with changes in the activity of enzymes of the antioxidant system of the blood [1].

Specific features of the morphometric parameters of the hip bone of rabbits were studied by researchers, and according to the authors, no visual differences in terms of the anatomical structure of the hip bone in the right and left legs were identified from written data on the skeleton of domestic rabbits. Rabbits were characterized by a high bulge in the femur, with the semicircular head of the bone below its height. It has been reported that the hip bone is slightly smaller than the posterior as a result of the attachment of the superficial muscle of the sacrum, which occurs when the back leg is supported and the bone develops strongly into the third humerus. The upper part of the proximal epiphysis of the bone forms a large bulge, head, small and third bulges, the size of which is observed to be larger than the distal epiphysis [10].

Studies have shown that a number of factors affect the structure of the hip bone in rabbits. One of the factors influencing bone structure is body weight, flexion and extension movements of the pelvic joint [11].

Materials and methods. The research was carried out on the front and hind legs of 1-day-old gray giant, white giant, flander rabbits from Samarkand region's Pastdargom district "Agro velikan", Taylak district "Orzunur" and Akdarya district "San'at" LLC. Divided into 3 groups with 10 rabbit cubs in each. All groups of rabbit babies were fed the same ration. Morphometric measurements were taken on days 1, 21, 51, 81, and 120 of the experiment.

Used by NP Chirvinsky to determine the linear dimensions and weights of bones and scientists of the Samarkand Institute of Veterinary Medicine (DH Narziev, MH Allamurodov, AS Daminov, RM Tashtemirov, NB Dilmurodov) general morphological methods improved and introduced by were used.

All numerical data obtained as a result of scientific research were mathematically processed by the method of EK Merkureva.

Mathematical-statistical analysis was performed on a computer's Microsoft Excel spreadsheet using Student and Fisher criteria.

Results and their analysis. The absolute value of shoulder length in gray giant rabbits in the first group was 1.61 ± 0.057 cm on day 1 of postnatal ontogeny, with a rapid increase to 21 days (3.28 ± 0.047 cm, $r < 0.02$; $K = 2.041$) and subsequent to continue this process in stages until the 120 days studied, ie at 51 days - 5.14 ± 0.1 cm ($r < 0.03$; $K = 1.56$), at 81 days - 7.53 ± 0.14 cm ($K = 1.46$), at 120 days - 10.08 ± 0.26 cm ($r < 0.03$; $K = 1.33$). It was found that the growth rate of this figure of the femur was 6.33 times during the period from 1 day to 120 days in rabbits.

The absolute value of shoulder bone weight in the first group of rabbits increased from 0.71 ± 0.009 g to 1.39 ± 0.09 g (K = 1.94) from the first 1 to 21 days of postnatal development, with a slight acceleration from 21 days to 51 days. (2.75 ± 0.06 g, r <0.03; K = 1.97) and continued periodically until the next 120 days, i.e., at 81 days - 4.65 ± 0.1 g (r <0.03; K = 1.68) and at 120 days - 6.75 ± 0.11 g (K = 1.45). The absolute coefficient of growth of bone mass was found to be 9.42 times during the studied stages of postnatal ontogeny in rabbits.

The second group - white giant rabbits, the absolute value of shoulder length was 1.5 ± 0.04 cm on day 1 of postnatal ontogeny and increased to day 21 (3,026 ± 0.04 cm, r <0.02; K = 2, 01) and the continuation of this process in stages until the next 120 days of study, ie at 51 days - to 4.6 ± 0.12 cm (r <0.03; K = 1.52), at 81 days - 6.63 ± 0 , 07 cm (r <0.02; K = 1.43), and at 120 days - 9.06 ± 0.21 cm (r <0.03; K = 1.36). It was found that the growth rate of this shoulder bone was 6.03 times during the period from 1 day to 120 days in rabbits.

The absolute value of shoulder bone weight in the second group of rabbits increased from 0.68 ± 0.009 g to 1.3 ± 0.03 g (r <0.04; K = 1.91) from the first 1 to 21 days of postnatal development, from 21 days. This process is accelerated up to 51 days (2.56 ± 0.056 g, r <0.04; K = 1.96) and continues periodically until the next 120 days, ie at 81 days -4.23 ± 0.5 g (r <0.02; K = 1.64), at 120 days - 6.1 ± 0.17 g; K = 1.44). It was found that the growth rate of the absolute value of bone mass was 8.95 times during the studied stages of postnatal ontogeny of rabbits.

The absolute value of shoulder length in the third group - rabbits of the flander breed was 1.78 ± 0.02 cm on day 1 of postnatal ontogeny and increased to 21 days (3.6 ± 0.12 cm, r <0.04; K = 2.02) and to continue this process in stages until the next 120 days studied, ie at 51 days - 5.67 ± 0.13 cm (r <0.03; K = 1.57), at 81 days - 8.38 ± 0.155 cm (r <0.02; K = 1.57), at 120 days - 11.54 ± 0.27 cm (K = 1.37). It was found that the growth rate of this shoulder bone was 6.47 times during the period from 1 day to 120 days in rabbits.

The absolute value of shoulder bone weight in the third group of rabbits increased from 0.8 ± 0.016 g to 1.56 ± 0.02 g (r <0.02; K = 1.95) from the first 1 to 21 days of postnatal development, from 21 days. Accelerated up to 51 days (3.13 ± 0.09 g; K = 1.99) and continued periodically until the next 120 days, ie at 81 days - 5.36 ± 0.11 g (K = 1.71). , At 120 days - 7.8 ± 0.12 g (r <0.02; K = 1.47). The absolute coefficient of growth of bone mass was found to be 9.82 times during the studied stages of postnatal ontogeny in rabbits.

Thus, the absolute measure of the linear size and weight of the shoulder bone of rabbits exhibits specific dynamics of change at different physiological stages of postnatal ontogeny, and these indicators have certain differences in rabbit breeds.

Conclusion:

- It was noted that the linear dimensions of the shoulder bones of rabbits in the meat direction increased slightly during the period from the first day of postnatal ontogeny to 21 days, and in the later stages of this process continued without significant deviations;

- It was noted that the absolute values of the length and weight of the shoulder bone of rabbits in the meat direction increased slightly during the period from 21 to 51 days of postnatal ontogeny, and in the later stages of this process continued without significant deviations;

- Absolute rates of shoulder bone weight were found to be higher in group 1 and group 3 rabbits, especially in the later stages of postnatal ontogeny.

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