MORPHOPHYSIOLOGICAL FEATURES OF THE REPRODUCTIVE ORGANS OF RABBITS

Scientific supervisor - Associate Professor –
Eshmatov G'.
Student – ***G'aniyev S.***
Tashkent branch of Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology

Abstract. *This article discusses the morphological and physiological structure of the male and female reproductive systems of rabbits, their role in reproduction, the period of sexual maturity, and their specific features in reproductive activity. Rabbits are characterized by a high level of reproduction , which requires an in-depth study of their reproductive system.*

Keywords: *Rabbit, reproductive system, genitals, morphology, physiology, uterus, ovulation, spermatogenesis, breeding, high fertility .*

Relevance of the topic. Rabbit breeding has gained great importance in recent years not only in ensuring food security, but also in conducting scientific research as experimental animals. The high fertility of rabbits is one of the important factors that distinguish them from other small animals. Therefore, a deep study of the morphological and physiological structure of their reproductive organs is an important factor in planning breeding, conducting selection work and raising healthy offspring. In particular, a deep analysis of the reproductive system in modern veterinary medicine, biotechnology and animal husbandry creates the basis for innovative approaches. Therefore, the scientific study of the structure of the reproductive organs of rabbits is a pressing issue today.

Research goals and objectives. 1. Study the morphological structure of the female and male reproductive organs of rabbits;

2. Analysis of the physiological activity of the reproductive system - the processes of ovulation, fertilization and pregnancy;

3. Determine the stages of development of the reproductive organs in rabbits depending on age;

4.Evaluate the impact of the structure and function of the reproductive organs on fertility;

5. Develop practical recommendations for improving breeding based on research results.

Introduction. Rabbits are mammals that are widely used in animal husbandry and laboratory research due to their high reproductive capacity. Their reproductive system has a unique morphological structure, which ensures high productivity. Domestic rabbits (hereinafter referred to as rabbits) belong to the order of mammals, lagomorphs , and were previously included in the class of rodents, along with rats, mice, and voles. All animals in this group are characterized by having open-rooted incisors that continue to grow throughout life . However, since rabbits have two pairs of such front incisors, while rodents have only one pair, rabbits were later separated and reclassified into a separate order. Rabbits are

herbivores and usually live in large social groups. Because they can be easy targets for predators, many of their anatomical structures are adapted to detect danger early and move quickly to escape. All breeds that exist today are descended from the wild European rabbit, which weighs up to 2.5 kg and is covered in brown fur.

Figure 1. Rabbit breed

This coloration creates a spotted appearance and helps rabbits to hide. As a result of selective breeding, more than 50 breeds weighing from 1 to 8 kg have been created. Although these breeds have a variety of fur colors , most of them cannot survive in the wild. Rabbits have erect ears, long, oval in shape, and usually black at the tips. The ears make up about 12% of the body surface, which allows them to be used as an effective thermoregulation (heat exchange) organ. Later, through selection, rabbit breeds with drooping ears were also created. Their eyes are located on both sides of the head, which provides rabbits with a wide monocular (each eye sees separately) field of vision and allows them to detect predators early. Rabbits are mainly active at dawn and dusk, so their eye structure is adapted to low light. Their skin is very soft and covered with fine sensory hairs. Due to its split upper lip, it can easily gnaw even short grass. Adult female rabbits have a skin fold under their chin, from which they pluck their fur before giving birth to lay down in their den. Rabbits have special glands on their skin , which they use to mark their territory. These glands are located under the chin, in the groin , and in the rectum. Their feet are completely covered with wool, so their soles are not soft and slippery. When at rest, the rabbit stands with its hind legs resting on the ground from the toes to the hock joint . If a group of rabbits is grazing , one or two of them will stand on their hind legs and watch for danger. When they sense danger, the rabbits will thump the ground with their hind legs to warn others. These instinctive actions are also observed in domestic rabbits. The rabbit's tail is short and its underside is white, and the rabbit signals danger to other rabbits by "flashing" this white marking as it flees.

Main part. Morphophysiological features of the reproductive organs of rabbits. Male rabbits are usually called abuck. Their two testicles are located in front of the genitals, in a scrotum that is almost not covered with wool. The testicles are completely descended into the scrotum at about 12 weeks of age, but the

inguinal canal remains open, which distinguishes them from other animals. Male rabbits do not have a bone inside the penis . Also, males do not have teats. Female rabbits are known as doe. Their reproductive system is unique , with the uterus consisting of two horns, and the body of the uterus is absent. Each horn of the uterus has its own separate cervix (neck) and is connected to the vagina separately. The mesometrium, which supports the reproductive system, is rich in fatty tissue and is an important supporting structure.

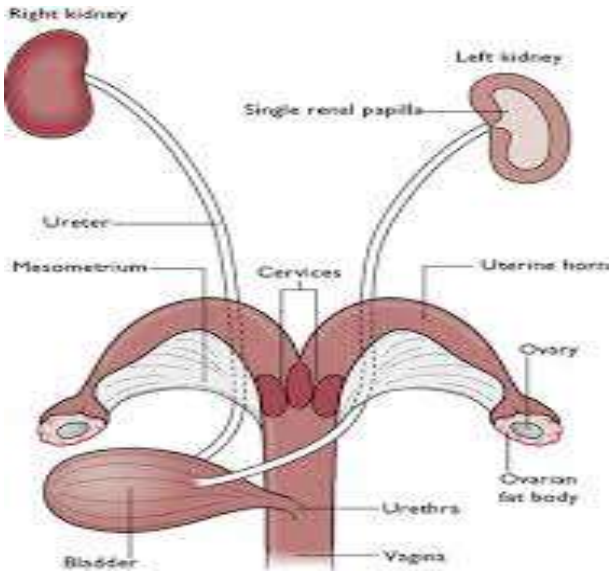

Figure 2. Anatomical structure of the reproductive system of female rabbits.

Female rabbits usually have 4 or 5 pairs of teats. Wild rabbits only nurse their young once or twice a day . Therefore, the young rabbits are kept safe in underground burrows . Once the young rabbits are old enough to move around on their own, nursing lasts only a few minutes, and this time becomes shorter as they grow older. This process is similar in domestic rabbits. In young rabbits, sex determination can be difficult at first . However, once the testicles have descended into the litter, the difference between male and female is clearly visible. In males, the penis is easily protruded, and it has a pointed shape. In 5-week-old male rabbits, the scrotum is much larger, not covered with fur , and mobile testicles can be felt inside. These testicles are located in front of the genitals, on both sides. In female rabbits, the opening of the vaginal vestibule is slit-shaped. They usually have 8 pairs of teats, which are located on the chest and lower abdominal wall. When a female rabbit is delivered by cesarean section, each of the uterine horns must be cut separately to remove each baby, since

each of them has an independent cervix. Therefore, there is no possibility of moving the baby from one horn to the other.

Ovulation in rabbits is a complex physiological reaction of the body in response to a certain stimulus , during which the mature follicle ruptures and the egg is released. Rabbits have reflex ovulation , which occurs a few hours after mating. Although the factors that trigger ovulation have not yet been fully studied , it has been established that the basis of this process is controlled by special receptors located in the vagina and uterus that receive temperature and chemical effects. It is the stimulation of these receptors that triggers the ovulation reflex. The ovaries in rabbits are very well supplied with nerve fibers. In experiments, cases of incomplete maturation of the egg cells have been observed when the nerves going to the ovaries are severed. This proves that the nervous system plays an important role in the ovulation process.

Also , man rabbit's appearance and animals preservation conditions also to ovulation directly effect provider factors as confession Follicle inside of liquid pressure , its in the content proteolytic enzymes , and follicle in cells working outgoing estrogen hormones also ovulation stimulates . Estrogen hormones stimulate the release of other hormones from the pituitary gland that enhance ovulation. The average gestation period in rabbits is around 30–33 days, and in some cases this period can vary from 28 to 39 days. Rabbits are also bred both naturally and through artificial insemination. According to the classification proposed by VK Milovanov , rabbits belong to the group of animals that mate naturally through the vagina.

Conclusions. 1. The reproductive system of rabbits is morphologically and physiologically unique, providing them with high reproductive potential. The structural and functional differences in the genitals of male and female rabbits allow for a clear and effective reproduction process. The bicornuate uterus in

females , reflex ovulation after mating, and a short gestation period increase the reproductive rate of these animals.

2. The important role of the nervous system in the ovulation process is closely related to external factors such as the presence of a male rabbit, the conditions of care and the physiological state. The ability of rabbits to reproduce intensively makes them an important object of scientific experiments and animal husbandry. This information is important for a deeper study of the reproductive system of rabbits, achieving high efficiency in breeding and ensuring their health.

REFERENCES USED.

1. Eshmatov, G. E. (2022). Harmony of education and student devlopment in the process of physical education.
2. Eshmatov, G. X., Niyozov, H. B., Yusupov, O. S., & Nazarov, A. B. (2019). Ferula assafoetida herbaceous herb morphological parameters of blood of karakul sheep. ACADEMICIA: An International Multidisciplinary Research Journal, 9(4), 146-151.
3. O'g'li, E. (2019). Influence of herbaceous grain on Ferula assafoet on the quantitative and qualitative characteristics of snowflake rams sperm. Asian Journal of Multidimensional Research (AJMR), 8(11), 6-10.
4. Ниязов, Х. Б. ДЕЙСТВИЕ СЕМЯН ФЕРУЛЫ НА МОРФОЛОГИЧЕСКИЕ ПОКАЗАТЕЛИ КРОВИ И ПЛОДОВИТОСТЬ КРОЛИКОВ. Zbiór artykułów naukowych recenzowanych., 80.
5. Хаитов Р.Х., Зарипов Б.З., Ражамурадов З.Т. “Ф изиологии животных” . Toshkent 2005 yil
6. N.B.Dilmurodov, G‘.X.Eshmatov, SH.Z.Doniyorov “HAYVONLAR ANATOMIYASI”. 2023-yil
7. Bakhtiyorovich E. S., SaifiddinJakhongirUgli K. DIAGNOSIS OF PROTEIN METABOLISM DISORDERS IN FISH //American Journal of

Agriculture and Horticulture Innovations. – 2023. – Т. 3. – №. 05. – С. 04-12.

8. Kasimov S. et al. The Pathomorphology Of Disorders Of Vitamins And Protein Metabolism In Fish //The American Journal of Veterinary Sciences and Wildlife Discovery. – 2021. – Т. 3. – №. 06. – С. 9-12.
9. Qosimov, S. J., and U. K. Sh. "Hypovitaminos A And D In Young Animals." *American Journal of Advanced Scientific Research* 2.10 (2025): 79-84.
10. Qasimov S. J. et al. SPREAD OF DISEASES OF METABOLISM DISORDERS IN FISH //AGROBIOTEXNOLOGIYA VA VETERINARIYA TIBBIYOTI ILMIY JURNALI. – 2022. – С. 439-444.