Annotation of elective educational component «Methods of preserving the gene pool of animals»

Academic discipline	**Methods of preserving the gene pool of animals**
Tutor	Klopenko Natalia Ihorivna PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	1 course (master degree) 2 semester
Faculties whose students are invited to study discipline	Biological-technological faculty
List of competencies and learning-related outcomes that discipline provides	According to the requirements of the educational-professional program "Technology of production and processing of livestock products" applicants should acquire the ability to obtain the following competencies: GC 1 (general competence). Ability to abstract thinking, analysis and synthesis. GC 2. Skills in using information and communication technologies. PC 3 (professional competence). The ability to organize and control the implementation of measures aimed at improving the selection and breeding work in animal husbandry. PC 10. The ability to clearly and unambiguously convey one's own knowledge, conclusions and arguments to specialists and non-specialists, in particular to people who are studying. The result of studying the discipline is the acquisition by students of the following knowledge and skills: - to carry out research and/or carry out innovative activities with the aim of obtaining new knowledge and creating new technologies and products in the field of animal husbandry and in wider multidisciplinary contexts (to know the properties of populations, biological and genetic features of the main species of farm animals; to be able to carry out selection and genetic monitoring of the potential of animal productivity, resistance, adaptability and the study of the parameters of their ontogenesis); - to apply modern mathematical methods, information technologies and specialized software for research and development in the field of technologies for the production and processing of livestock products (to know the theory and progressive methods of selection and breeding work for the improvement of existing and creation of new high-performance hybrids, lines, types, crosses and breeds of farm animals; to know the specifics of breeding methods for improving productive and breeding qualities of animals; to know the genetic and mathematical models of management of farm animal populations and their use in breeding and selection; to know the principles of preserving the gene pool of non-competitive breeds of limited number); - to search for the necessary data in scientific literature, databases and other sources, analyze and evaluate these data (to be able to conduct research on the genetic improvement of local and endangered breeds of farm animals while preserving

	their biological uniqueness; to know the factors and conditions of genetic stability of populations, mechanisms for solving the problem of preserving biological diversity; to know the laws of management of the selection process at the population level).
Description of the discipline	
Preconditions necessary for the study of discipline	Elective educational component «Methods of preserving the gene pool of animals» is based on knowledge of such disciplines as "Genetics with biometrics", "Biotechnology", "Technology of animal reproduction", "Breeding of animals", studied in the previous courses of bachelor's degree, and "Organization of breeding work in animal husbandry", which is studied in the first semester of master's degree.
Maximum number of students who can study simultaneously	25 students
Lesson plans	**Lectures** 1. Modern classification of breeds according to groups at risk of extinction of the gene pool. Methodological principles and programs for preserving the gene pool in situ and ex situ. Gene pool herds and cryobanks of animal genetic resources. 2. Justification of the organizational, economic and legal mechanism for preserving the gene pool of local and endangered breeds of agricultural animals in Ukraine. 3. Breeding processes in dairy in beef cattle breeding of Ukraine. Principles of formation and principles of functioning of the electronic database of the state register of breeding animals. 4. World experience of interbreeding in dairy cattle breeding and its use in Ukraine. 5. Genetic examination of the origin of breeding animals. Immunogenetic markers in cattle breeding. 6. Determination of hereditary anomalies. Cytogenetic methods of evaluating animals. 7. Use of biotechnological methods to intensify the selection process in cattle breeding. Prospects for the use of cloning in the breeding of agricultural animals. 8. Prospects for the use of biotechnological methods to increase the genetic potential of livestock productivity in Ukraine.
Lesson plans	**Practical classes** 1. Diversity of gene pool objects and their categories. Species diversity, population and distribution. 2. Gene pool statuses. Genetic resources of Ukrainian selection. 3. Genetic resources of foreign breeds and their use in selection process. 4. The gene pool of endangered and local breeds of domestic animals. Genetic resources of animals and their resistance to diseases. 5. Basic parameters of gene pool micropropagation. Organization of the gene pool bank. 6. Preservation of genetic resources of farm animals at risk. The organization of reserves for local and endangered breeds Zoos and nature reserves. 7. Programs for the protection of genetic resources of domestic animals using the in situ method. 8. Organizational-economic and legal bases for preservation of the gene pool of farm animals.
Teaching language	Ukrainian