Course Code: ANB 511

Course Title: Livestock and Poultry Breeding

Credit Hours: 3(2+1) Full Mark: 75 Theory: 50 Practical: 25

Objective

Upon completion of this course, students will be able to understand the basic principles and fundamentals of livestock breeding. They will also be to understand the basic principles and fundamentals of pig and poultry breeding for their genetic improvement.

Syllabus

Heritability, repeatability, variance and gene actions. Selection and mating of livestock and poultry. Breeding of laboratory animals. Genetic aspects of poultry breeding-inheritance of traits, disease resistance, use of dwarf gene.

Course Breakdown

Theory

S.N.	Topic	No. of Lectures
	Concept of heritability and repeatability	1
	Breeding values, dominance and epistasis values.	2
	Variance and different types of gene actions	2
	Inbreeding, coefficient of inbreeding and relationship, measure of inbreeding and relationship, resemblance among relatives, inbreeding methods for the development of breed, strain, lines and family	3
5.	Different mating systems crossing in the light of cattle, buffalo, sheep, goat, pig and poultry	3
6.	Lab animals, their breeding, handling and uses	2
7.	Selection parameters, principles, methods, basic and genetic effects of selection	1
8.	Effective selection procedure for genetic improvement of cattle, buffalo, goat, sheep, pig and poultry	2
9.	Special breeding plan for cattle, buffalo, sheep, goat, pig and poultry	3
10.	Inheritance of morphological, economic, polymorphic, threshold and sex linked traits in poultry.	2
11.	Formation and maintenance of control population of poultry.	1
12.	Disease resistance mechanism in poultry.	1
13.	Development, maintenance and uses of inbred lines in poultry	2

14.	Utilize *dw* (dwarf gene) for broiler production	1
15.	Intra population selection schemes of poultry	1
16.	Egg production characters of laying poultry	1
17.	Di-allele crossing	1
18.	Random sample test and its importance in poultry research.	1
	Total	**30**

Practical

S.N.	Topic	No. of Practical
1.	Estimation of heritability and repeatability	1
2.	Estimation of breeding value, dominance and epistasis value	1
3.	Calculation of variance and different gene actions	1
4.	Inbreeding, coefficient of inbreeding and relationship, measure of inbreeding and relationship	2
5.	Different mating systems crossing in the light of cattle, buffalo, sheep, goat, pig and poultry	3
6.	Estimation of selection parameters and genetic effects of selection.	1
7.	Preparation of breeding plan for cattle, buffalo, sheep, goat, pig and poultry	3
8.	Formation and maintenance of control population of poultry	1
9.	Diallele crossing	1
10.	Random sample test and importance in poultry research	1
	Total	**15**

References

Crawford, R.D.2003. Poultry, Breeding and Genetics (3rd edition). Elsevier.

Geoff Simm. 2002. Genetic Improvement of Cattle and Sheep. The Book Depository Limited, UK.

Lasley, J. F. 1987. Genetics of Livestock Improvements. Prentice-Hall, Inc. Eagle Wood Cliff, N.J.

Richards M. Bourdon. 2013. Understanding Animal Breeding. The Book Depository Limited, UK.

Warwick, E.J. and J.E. Legates. 1979. Breeding and Improvement of Farm Animals (7th edition). McGraw-Hill Book Company, New York.