

BASIC AND MOLECULAR GENETICS

The present book is covered in 3 parts comprising 27 chapters. The first part covers "Mendelian or classical genetics" in 11 chapters dealing with introduction to genetics, sources of genetic variation, heredity and environment, Mendelism, Chromosomal theory of inheritance, Exceptions to Mendelism [Multiple alleles, gene expression (action) on phenotypic level, Linkage of genes and crossing over], Sex determination and sex controlled inheritance. The second part covers "Molecular genetics" in 14 chapters which includes genetics, genetic material (DNA) and its molecular structure, changes in its structure (mutation), and replication of DNA; Gene expression at molecular level (transcription and translation), Regulation of gene expression in prokaryotes and eukaryotes, Gene manipulation techniques and applications. The last part covers "Genetic Statistics" which includes 2 chapters on the probability and Chi-square testing of discrete variable.

This book on "Genetics" has been written to fulfill the hope and requirement of post-graduate students, teachers and of those intend to appear and pass the competitive examinations on All India basis like SRF, NET and ARS conducted by ASRB (ICAR), UGC and UPSC.



Dr. Arun Kumar Tomar is presently holding the position of Head, Division of Animal Genetics and Breeding for the last four year and Director ICAR-Central Sheep and Wool Research Institute, Avikanagar, via Jaipur, Rajasthan. He did Ph.D. (Animal Breeding) from CCS, HAU, Hisar, B.Sc. (Ag.) and M.Sc. (Ag.) in A.H. and Dairying from J. V. College, Baraut, Bagpat (U.P.). He has published few books and many research papers and has experience of editorial work in the capacity of Assistant Editor of Research Journals.



Mrs. Archana Tomar is M.Sc., B.Sc. (Genetics), B.Ed. from Kurukshetra University, Kurukshetra (Haryana). She is presently engaged in teaching work, U.P. Govt. Education Department, Ghaziabad. She has 12 years experience of teaching work.



Prof. Sukhvir Singh Tomar is well qualified (Ph.D.), retired Principal Scientist (AGB) from N.D.R.I., Karnal (I.C.A.R.) having 40 years of research and teaching experience, has published about 300 research articles and 3 textbooks on population genetics and animal breeding. He has long experience for about 28 years as Editor of Research Journal and guided a number of M.Sc. and Ph.D. students.



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