

GENETICS



Dr. Ashwani Kumar Dubey
Dr. Sunita Singh

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Dr. Sunita Singh



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Preface

*First Author of This Book
Dedicated to
Beloved Father Late Tulsidas Dubey*

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Genetics arose out of the identification of genes, the fundamental units responsible for heredity. Genetics may be defined as the study of genes at all levels, including the ways in which they act in the cell and the ways in which they are transmitted from parents to offspring. Modern genetics focuses on the chemical substance that genes are made of, called deoxyribonucleic acid, or DNA, and the ways in which it affects the chemical reactions that constitute the living processes within the cell. Gene action depends on interaction with the environment. DNA sequences in the nuclear diploid genome usually exist as two allelic copies (on paternal and maternal homologous chromosomes). In addition to this degree of repetition, about 40% of the human nuclear genome in both haploid and diploid cells is composed of sets of closely related nonallelic DNA sequences (DNA sequence families or repetitive DNA). Within the considerable variety of different repetitive DNA sequences are DNA sequence families whose individual members include functional genes (multigene families), and also many examples of nongenic repetitive DNA sequence families. This book is useful to researchers, molecular biologists, biotechnologists, plant breeders and teachers engaged in advanced genetics.



Dr. Ashwani Kumar Dubey is a Leading Scientist, Environmentalist and Academician, in the beginning of 21st century in India. He is currently working as Professor of Zoology at Shri Krishna University, Chhatrapur, Madhya Pradesh, India. Editor-in-Chief, International Journal of Global Science Research. He was serving as Executive Director, Godavari Academy of Science & Technology, Environment and Social Welfare Society, Chhatarpur, MP, India.

He completed his Ph.D. in 1995 from Vikram University, Ujjain MP. His research field was Biochemistry, Free Radical Biology, Toxicology and Stress Monitoring. He has published five books and twenty research papers in International and National peer reviewed journals and academic and scientific articles in standard magazine. Scientific talk broadcasted by All India Radio.

Dr. Ashwani is widely regarded as one of India's foremost experts on Zoology & Environmental sciences. He awarded many prestigious awards by National and International institution. He is a regular member and distinguished fellow of the learned scientific societies and also in Research Journals as editor/reviewer in India, America, United Kingdom, Egypt, France, Syria, Nepal, Iraq, Sudan, Malaysia and Japan.



Dr. Sunita Singh is obtained her M. Sc. (Zoology) with second position of merit list in 1981 and Ph. D. in 1986 from Dr. Hari Singh Gour University, Sagar, MP. Fifty six number of research papers have been published in reputed International and National journals like Ecotoxicology as well as Environmental Biology Journal. She is supervising Ph. D. scholars of Awadhesh Pratap Singh University, Rewa, MP and Dr. Hari Singh Gour University, Sagar, MP.

Dr. Sunita Singh is Life Member of Madhya Bharti and Journal of Environmental Biology. Currently working as Head of the Department of Zoology, Govt. (Auto.) Girls P. G. College of Excellence, Sagar, MP.



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