

Sustainable Livestock and Poultry Breeding

It was felt the need of the day to compile the entire subject matter related to sustainable animal breeding and production in a single volume to meet the requirement as per syllabus of Post Graduate programme of animal breeding taught in State Agricultural Universities in India. The entire subject matter of animal breeding in this book has been covered in 3 parts comprising 27 chapters. The first part of 8 chapters has been devoted to the domestication of animals, animal husbandry development and education in India, breed improvement programmes for different species in India, and contribution of livestock. The second part comprises 11 chapters covering the conventional animal breeding techniques based on the principles of population genetics. The last third part comprising 8 chapters of the book deals with the essentials of sustainable animal breeding and production covering the documentation and conservation of AnGR, strategies for breeding of different species of livestock and poultry, biotechniques in animal breeding, reproduction, nutrition, management and health care.

Hope this book will be of immense use to the post graduate students, teachers and those appearing in different All India Competitive Examinations like NET, SRF, and ARS in Genetics and Animal Breeding conducted by ASRB (ICAR) as well as by UGC and UPSC.



Dr. Arun Kumar Tomar is Ph.D. (Animal Breeding) from CCS, HAU, Hisar. He did M.Sc. (Ag.) in A.H. & Dairying from J.V.College, Baraut, Bagpat (U.P.). He was selected as Scientist in the discipline of Animal Genetics & Breeding of A.R.S. (ICAR). He was posted as Scientist (Animal Genetics & Breeding) at C.S.W.R.I. Avikanagar (Rajasthan), and subsequently promoted to the post of Senior Scientist and Principal Scientist (A.G.B) at Project Directorate on Cattle, Meerut (U.P.). He was selected as Head, Division of Animal Genetics & Breeding, Central Sheep & Wool Research Institute, Avikanagar, Rajasthan where he is working at present.



Professor Sukhvir Singh Tomar is Ph.D. (A.G.B.) from N.D.R.I., Karnal. He did M.Sc. (Ag.) in A.H. & Dairying from J.V.College, Baraut, Bagpat (U.P.). He started his career as Lecturer, J.V. College, Baraut (Meerut) and subsequently at P.A.U, Hisar campus. Later on, he joined ARS of I.C.A.R. as Scientist (AGB) at C.S.W.R.I. and worked as Senior Scientist and Principal Scientist (A.G.B.) at N.D.R.I., Karnal from where he was retired having 40 years of research experience.



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Tomar & Tomar



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Arun Kumar Tomar
Sukhvir Singh Tomar

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The Authors



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Professor Sukhvir Singh Tomar is Ph.D. (A.G.B.) from N.D.R.I., Karnal. He did B.Sc. (Ag.) and M.Sc. (Ag.) in A.H. & Dairying from J.V.College, Baraut, Bagpat (U.P.). He started his career as Lecturer, J.V. College, Baraut (Meerut) and subsequently at P.A.U., Hisar campus. Later on, he joined ARS of I.C.A.R. as Scientist (AGB) at C.S.W.R.I. and worked as Senior Scientist and Principal Scientist (A.G.B.) at N.D.R.I., Karnal from where he was retired having 40 years of research experience making significant contribution in the area of Animal Breeding Research and teaching experience to B.Sc., M.Sc. and Ph.D. Classes. He has published about 300 research articles and 3 text books. He has made notable contribution in research in the area of Animal Breeding, particularly pertaining to threshold characters, replacement rate, selective value, and other aspects of sire evaluation. He has long experience of about 28 years as Editor of Research Journal and guided a number of M.Sc. and Ph.D. students. He is still actively engaged in research and publication work.

The authors have published already two books. The first book "Animal Genetics and Breeding" was written as per syllabus of B.V.Sc. & A.H. of Indian Agricultural Universities. The second book "Genetics of Livestock Population" covered both qualitative and quantitative genetics in population as per syllabus prescribed for post-graduate classes in the discipline of Animal Breeding. Both these books covered both the theory as well as practical problems in very simple lucid and illustrative language.

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Dr. Arun Kumar Tomar

M.Sc. (Ag.), Ph.D., A.R.S.
Head of Division (Animal Genetics & Breeding)
ICAR Central Sheep & Wool Research Institute,
Avikanagar, via Jaipur
Rajasthan - 304501

And

Prof. Sukhvir Singh Tomar

M.Sc. (Ag.), Ph.D., A.R.S.
Former Principal Scientist (AGB),
ICAR National Dairy Research Institute, Karnal

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Hope this book will be of immense use to the post graduate students, teachers and those appearing in different All India Competitive Examinations like NET, SRF, and ARS in Genetics and Animal Breeding conducted by ASRB (ICAR) as well as by UGC and UPSC. The subject matter has been presented in single volume in a more meaningful and desired manner and simple language with numerical examples. We do not claim any originality as the subject matter has been collected and compiled from various published sources. The authors are highly thankful to these sources.

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Further, we welcome the readers to point out the mistakes that are likely to be and give suggestions for further improvement of the book.

Dr. Arun Kumar Tomar
Prof. Sukhvir Singh Tomar

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Domestication of Farm Animals

There are ample evidences to suggest that animals were domesticated before the beginning of the written history. The excavation findings, old scriptures, and edicts (Orders of authority) are used to trace out the history. There are ample information on animal care, health management, and treatment of diseases in ancient Indian literature (Indus Valley Civilisation, Holy Vedas, Puranas, epics, etc). Since ancient India the livestock keeping had been an inviolable (unbreakable) tradition rather than an economic enterprise. The most important cultural and religious traditions of the Hindus are linked to domesticated animals and particularly the cow occupied an important place for cultural ethos rather than for the nutritive lacto-products they offer.

There are about 100000 species of animals listed in literature but man has domesticated a mere handful of only 40 species of domestic animals including poultry to serve various purposes. The domestication of animals of nearly all the species started and the agriculture was also started in a crude way when man used to live in huts or wooden houses. The domestication of animals by man has been certain long before the time of recording historical data, though its exact time is not known.

The first animals to be domesticated probably were the dogs and goats about 8500-9000 years ago from today whereas the cattle and sheep about 6000-6500 years ago from today. However, the domestication of sheep and goats took place in the pre-agriculture period.

1.1 PLANT – ANIMAL – HUMAN RELATIONSHIP

Man is a member of the Mammalia class, Primate order, and Hominoidea superfamily of animal kingdom and hence considered as an animal, but with a difference of wisdom and culture. There had been a relationship of man with animals. The art of the cave dwellers had depicted different stages of man-animal relationship during the Hunting age, Pre-historic time and Early Historic time. During hunting age, the animals were valued for their protein-rich meat, skin, bone, horn, and antlers (branched horns) but during the Pre-historic time the animals were reared for their products, transportation, and farming whereas during the Early Historic time man enslaved animals and misused them even in