

Genetic Improvement of Field Crops

C. B. Singh and Dharendra Khare (eds.)

Scientific Publishers (India), Jodhpur, 2002, Pp.336, Price : Rs. 1200.00, \$ 80.00, ISBN 81-7233-301-3

Genetic Improvement of Field Crops, the book under review, on such an important subject, is edited by C.B. Singh (Dean) and Dharendra Khare (Scientist), College of Agriculture, Jawaharlal Nehru Agricultural University (JNKVV), Jabalpur, India. The main objective of this hard back book, as stated in the preface is "to collect up-to-date information and write in how-to-do-it fashion by the scientists of repute working on the improvement of particular crop with vast experience. The framework of the book is designed to serve as a ready reference in the classroom and laboratory and to bring the attention of the novice in plant breeding"

The book has a list of thirty contributors, 18 from JNKVV, Jabalpur campus, two each from Indira Gandhi Krishi Viswavidyalaya, Raipur; Nimbkar Agricultural Research Institute (NARI), Phaltan; Central Institute for Cotton Research (CICR), Nagpur; College of Agriculture, Indore, and one each from IARI, New Delhi; ICRISAT, Patancheru and Directorate of Oilseeds Research, Hyderabad, and two others.

The book comprises of 22 chapters, with disproportionate coverage of the 16 important field crops. The twenty two chapters of this book along with the names and affiliations of the contributing authors are: 1. Wheat (P.C. Mishra & R.P. Sharma, JNKVV, ZARS, Powarkheda and S.S.Singh, Indian Agricultural Research Institute, New Delhi); 2. Rice (M.N. Shrivastava and A. Kumar, Indira Gandhi Krishi Vishwa Vidyalyaya, Raipur); 3. Hybrid Rice (Rajesh Mishra, JNKVV, Jabalpur); 4. Maize (V.R. Rastogi, JNKVV, ZARS, Chhindwara); 5. Sorghum (A.R. Dabholkar, Indore); Chickpea (P.M. Gaur, ICRISAT, Patancheru); Pigeonpea (R.G. Satpute, JNKVV, Jabalpur); Mungbean and Urdbean (B.M. Moghe and Mridula Billore, College of Agriculture, Indore); Soybean (A.N. Shrivastava, C.B. Singh and M.K. Srivastava, JNKVV, Jabalpur); Groundnut (Arun R. Khire, JNKVV, Jabalpur); Linseed (S.R. Srivas, JNKVV, Jabalpur); Rapeseed-Mustard (S.S. Bhadouria, JNKVV, ZARS, Morena); Niger (S.S. Duhoon, AICRPS&N, Jabalpur); Safflower (D.M. Hegde, Vrijiendra Singh and N. Nimbkar, Nimbkar Agricultural Research Institute, Phaltan); Sesame (S.M. Sharma, JNKVV, Jabalpur); Cotton (G.K. Koutu and K.C. Mandloi, JNKVV, BMCA, Khandwa); Male-Sterility and its Exploitation (Mridula Billore, College of Agriculture, Indore);

Screening of Cotton Genotypes for Fibre Quality (Suman Bala Singh and Phundan Singh, Central Institute for Cotton Research, Nagpur); Formation of Seed and its Structure (Dhirendra Khare and C.B. Singh, JNKVV, Jabalpur); Varietal testing, Release and Notification System in India (N.D. Raut, JNKVV, ZARS, Chhindwara); Maintenance Breeding of Self Pollinated Crops (S.K. Rao, JNKVV, Jabalpur); Apomixis and its Application (Dhirendra Khare and C.B. Singh, JNKVV, Jabalpur).

The book covers 16 major field crops and six other important general topics (listed above) related with breeding and genetic improvement of field crops. The problems of individual crop and methods to resolve them are covered in each chapter. In order to keep uniformity the book chapters have been written on a fixed structural format. Each chapter of the book on a particular crop has been covered under some major headings i.e., 1. Taxonomical classification, origin and chromosome number; 2. Climatic requirement, area and distribution; 3. Salient features of crop cultivation; 4. Botanical description; 5. Selfing and crossing procedure; 6. Breeding objectives; 7. Breeding methods for crop improvement; 8. International and national organizations involved in crop improvement; 9. Major achievements in crop through breeding; 10. Varieties developed and released; 11. Seed production; 12. References. However, even a quick glance through the material presented in the chapters indicates that the statement written in the preface and back cover about the objectives of the book "to collect up-to-date information and write in how-to-do-it fashion" has not been fully met with. Similarly the editor's desire to "make available to teachers, students, researchers a book designed to serve as a ready reference in the classroom and laboratory and to bring the attention of the novice in plant breeding" has also not been fully met with. The editors statement about the book that "The problems of individual crop and methods to resolve are described in detail with clear objectives for the students of plant breeding" also seems to be far from the reality.

Most of the chapters in the book have been treated cursorily and they lack the depth of a higher level text book dealing with scientific advances in individual crops. This is evident also from the number

of printed pages devoted to each crop. Except few crops like rice (34 pages), chickpea (21 pages), soybean (22 pages), sunflower (23 pages) and sesame (25 pages), most other crops have been presented in less than 15 printed pages. The average length of chapters in this book is only 15 printed pages per chapter, which is naturally too insufficient to do full justice with so much scientific information available on genetic improvement of any of these important field crops. This is in sharp contrast to the book "Breeding Field Crops" by Prof. V.L. Chopra's (ed.) book, also reviewed in previous pages of this Journal, where the important crops like rice and wheat have been presented in 86 and 60 pages, respectively. Even the average length of a chapter in that book is 41 pages which is much high compared to the average of this book (15 pages). This indicates to the large gap in providing scientific information to the users.

A glance through the references cited and listed at the end of each chapter makes it clear once again that most of the contributors of the chapters have not taken their jobs seriously and have not made efforts to scan and present the latest available literature. For example, the very first chapter of the book and that too on one of the most important cereal crop globally - wheat, surprisingly has a total length of ten pages and only two references of 1968 and 1986 at the end. Another chapter on an important cash crop - cotton has been covered in seven pages and does not list even a single reference. The situation is far from satisfactory in other chapters too. This is clear from the average number of references of this book, which is 21 per chapter. Compared to a very high average of 127 references per chapter cited in the book "Breeding Field Crops" by Prof. V.L. Chopra (ed), the literature citation is insufficient in this book.

Even a "Subject Index", missing at the end of the book, could have at least enhanced the utility of the book in quick referring to desired topics and

sub-topics covered in the chapters to some extent.

Presentation style of the book has several shortcomings. The text lacks flow and continuity at most of the places. There are also some mistakes of serious nature that would have a bearing on the understanding of the basic concepts.

Although the reviewer does not intend to make comparisons, however, as both the books aimed with the same objectives and covering almost the same field crops are being reviewed simultaneously, it appears that compared to the book "Breeding Field Crops" the present book "Genetic Improvement of Field Crops" does not stand even near to that. Because an exhaustive list of errors and suggestions for improvement is neither desirable nor possible in this limited review, only some of the major areas have been indicated here. To cite some glaring errors, even a review of the very first chapter on wheat makes an unsavoury reading. There are too many printing errors throughout the book which could have been easily avoided by careful proof reading. The manuscript should be thoroughly checked for technical and printing errors to make at least some justification for the exorbitant price (Rs. 1200.00) of such a badly produced book that too not having more than a total of 336 pages. Therefore, few other crops like barley, pearl millet, sunflower and sugarcane could be added to enhance the utility and value of the book.

The book jacket is well prepared, with an attractive colour photograph of field crops. However, as the book is exorbitantly priced, there is enough scope for thorough editing and further improvement in presentation style, contents, illustrations and photographs of this publication to make it a good text book to justify its cost in the second edition, if any.

The publisher should also note that the book in its present form, both for its quality of production and contents, should not have been priced even one fourth of the present price.

M. C. Kharkwal
Editor