BOOK REVIEW

Biometrical Methods in Quantitative Genetic Analysis. By R.K. Singh and B.D. Choudhary. Haryana Agricultural University, Hissar. Kalyani Publishers, New Delhi-Ludhiana, 1977, pp. 288

This is probably the first attempt by Indian authors to bring out a book relating to the field of statistical genetics which could in some respects be akin to a text-book useful to the agricultural graduates. The authors' aim in bringing out this book is to help the applied research workers as well as students in using the tools of statistics as applied in genetics and plant breeding. It brings together, in a convenient package a considerable amount of useful information which could previously be obtained only by a diligent search in a scattered literature. From this point of view it is a welcome addition to the field of agricultural sciences.

The book consists of fourteen chapters together with a Bibiliography with as many as 73 references and also an index at the end. The first four chapters of the book deal with the elementary principles of statistics, matrix algebra and path analysis which a beginner without having enough mathematical background should know before he can digest the principles of biometrical genetics. The fifth chapter deals with scaling test and components of generation means. It describes the various tests for testing for scale effects which one must perform before embarking upon the biometrical genetic analysis. The powerful method of generation means of Hayman (1958) has also been given in this chapter. The next two chapters deal with the diallel and partial diallel analysis. Both the Hayman's as well as Griffing's approaches have been discussed. However, the W_r-V_r graph has not been drawn which is so very useful for applied workers in knowing the genetic situation involved in the analysis. This chapter on partial diallel cross is incomplete in the sense that some of the latest contributions made by the Indian workers have not been included. Chapter Eighth and Ninth deal with the analysis of three-way and four-way crosses and this is probably one book where a good discussion on these crosses has been given. In particular, these techiques help in estimating the epistatic components of variance which are not possible to isolate by the conventional methods of diallel analysis. Thereafter follows a chapter on Line X Tester Analysis as well as the analysis of the designs given by the North Carolina group. The chapter Twelve deals

with the multi-variate analysis of the data indicating the technique of clustering with the help of D^2 statistic and cannonical route method. The penultimate chapter deals with a very important topic on stability analysis for investigating the interactions between the genotype and environment. The models given out by different workers have been nicely presented in this chapter. The last chapter deals with simultaneous selection for several characters. This chapter leans heavily on the contributions made by the senior author in the field of selection indices.

On the whole the exposition of the subject-matter is commendable particularly because the problems have been presented neatly using the actual field and laboratory data. The steps for the analysis are laid down in a very simple manner and enables a worker not having advance training in statistics to understnnd the procedure. However, the book suffers from serious printing errors. One can't help stating that there are too numerous to enumerate. The authors have also not cared to make any distinction between a parameter value and its estimate. In some cases the interpretation of the results is also not sufficiently taken care of.

It is hoped that in subsequent editions many of the errors in the printing of the formulae, tables, data etc., will be removed. It is also necessary to modify some of the procedures of analysis as well as interpretation of the data. However, in spite of these shortcomings the book does serve the purpose for which it was written.

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