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### BOOK REVIEW

GOTTSCHALK, W., WOLFF, G.: *INDUCED MUTATIONS IN PLANT BREEDING*. — Springer Verlag, Berlin—Heidelberg—New York—Tokyo 1983. 238 pp. Cloth DM 98,—; approx. US \$ 40.50.

Plant breeding essentially consists of two phases: generation of genetic variability and selection of useful genotypes. Induced mutations contribute primarily by increasing genetic variability. According to the data presented by the International Atomic Energy Agency, more than 500 varieties developed by means of induced mutations, have been officially released. The aim of this book appearing in the series: *Monographs on Theoretical and Applied Genetics* as Volume 7, is to review the present data of and prospects for applied mutagenesis in plant breeding. The introductory chapters deal with the methods for inducing mutations. It is interesting that 91.4% of the released sexually propagated varieties have been induced by ionizing radiation; in vegetatively propagated crops and ornamentals even 99.2% — the remaining varieties were induced by chemicals. Further chapters cover the chimerical structure of  $M_1$  plants and the selection value of mutant genes. The core of the book focuses on the various types of induced mutants: alteration of the shoot system, flower shape and color, leaf mutants, mutations affecting the root system, flowering and ripening times, disease, drought and shattering resistance and the alteration of seed storage substances. Special chapter are devoted to the utilization of mutants in crossbreeding and mutations in vegetatively propagated crops and ornamentals. The pleiotropic gene action and the penetrance behavior of mutant genes as negative factors in mutation breeding are also discussed.

As has been true in previous volumes in this series, *Monographs of Theoretical and Applied Genetics*, continues to provide detailed authoritative reviews of subjects of profound interest. This book, serving as an excellent reference source (more than 1 200 references) will be of interest to plant breeders and geneticists.

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