# ADVANCES IN PEANUT SCIENCE

Edited by

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# PREFACE

One of the foremost objectives of the American Peanut Research and Education Society (APRES) is to provide avenues for information exchange on all aspects of the peanut industry. In addition to the annual meetings of APRES, the Society supports or has sponsored several publications. Among these are PEANUT SCIENCE, a semi-annual technical journal; two basic reference texts, PEANUTS—CULTURE AND USES, published in 1973, and PEANUT SCIENCE AND TECHNOLOGY, published in 1982; and several joint publications which resulted from symposia at APRES annual meetings. Preeminent among these publications are the "Proceedings of Peanut Breeding Symposium" published in 1981 by North Carolina State University as Department of Crop Science Research Report No. 80 and "Peanut Quality: Its Assurance and Maintenance from the Farm to End-Product" published in 1987 by the Florida Agricultural Experiment Station as Technical Bulletin 874. In 1992, APRES approved the publication of a new reference book which is oriented towards advances in information since that published in the 1982 reference text and the presentation of several topic areas not addressed in either volume.

During the past decade since the last text was compiled, many advances have occurred within all segments of the peanut industry. The computer has become essential in factories, laboratories and offices. Expert system models now aid the decision-making process and provide information of the best usage of limited resources. Biotechnology methods are commonly used applications in the research laboratory. Biological controls for weeds, pathogens, and insects are rapidly expanding and the potential for their field application is becoming a reality. We asked chapter authors to be sensitive to biotechnological advances in their disciplines and to present information in a manner which can be appreciated by all members of the peanut industry. We have emphasized advances that will improve peanut production through biological control of competitive plant growth, pathological diseases, and insect pests. These advances will not only improve the environment, but will reduce risk factors associated with handling and application of herbicides, fungicides, and pesticides. Biotechnology is in the forefront of efforts to eliminate aflatoxin as a possible human health hazard, and several chapters address the advances made to eliminate the toxin or find new genetic sources of resistance to *Aspergillus flavus*.

In addition to addressing advances in areas discussed in previous volumes, five new topic areas were selected with the guidance from the APRES ad-hoc new book committee. New subject matter includes soil microflora of peanuts, cultural practices and soil fertility, expert systems application to peanut production, sampling methodology in peanut grading, and an evaluation of world peanut markets. An attempt was made to address topics pertinent to a broad spectrum of peanut disciplines so information will benefit many segments of the peanut

industry. As always with any work of this size, there will be omissions and errors that will come to light after publication. It is hoped that these oversights will not detract from the wealth of information presented by the authors within this volume.

We express appreciation to the officers and committees of APRES, and especially to the many people who have given freely of their time, energy, and support to bring this volume to print.

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# CONTENTS