ANALYTICAL METHODS FOR
PESTICIDES AND
PLANT GROWTH REGULATORS

Edited by Gunter Zweig

VI
GAS CHROMATOGRAPHIC ANALYSIS

GUNTER ZWEIG / JOSEPH SHERMA

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PESTICIDES AND PLANT GROWTH REGULATORS

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Syracuse, New York

Volume VI

GAS CHROMATOGRAPHIC ANALYSIS

by

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Preface

Publication of Volume VI of the treatise previously entitled "Analytical Methods for Pesticides, Plant Growth Regulators, and Food Additives" (the title has been abbreviated to "Analytical Methods for Pesticides and Plant Growth Regulators") is a milestone for several reasons. The contents of this volume are devoted to a single topic: pesticide analyses by gas chromatography. We have attempted to compile the most important and latest information (to 1971) on gas chromatographic analyses from all the previously described pesticides and plant growth regulators covered in Volumes I–V. That this attempt has been almost wholly successful is attested to by the large number of chapters comprising this volume (128) and by the fact that gas chromatographic information was available on almost all of the compounds covered in previous volumes with those few exceptions where this elegant analytical technique could not be applied. Compounds which have been covered in previous volumes but for which no gas chromatographic analytical techniques have been described have been omitted: Coumachlor (Volume III, pp. 185–186); Warfarin (Volume III, pp. 197–201); Anot (Volume III, pp. 207–208); ethylene glycol and propylene glycol (Volume III, pp. 217–220); and Zoalene (Volume III, pp. 221–222).

Following the format of previous volumes, Part I deals with the more general subjects as, for example, sample preparation, detectors, qualitative analyses, and formulation analyses, and includes three chapters on gas chromatography of different classes of pesticides. The reader is referred to two excellent chapters by Arthur Bevenue on gas chromatography of pesticides which appeared in Volumes I and V. Since the electron capture detector had been thoroughly discussed in these chapters, greater emphasis has been placed in this volume on the more recently developed detectors, such as the flame photometric device for sulfur and phosphorus. Specific applications for the formulation and residue analyses of over one hundred pesticides are described in great detail, including preparation of various food and environmental samples for residue determinations. Reagents and equipment are given only in cases in which special conditions warrant such inclusion. Reference is made to previous volumes for general information concerning specific pesticides as well as analytical techniques other than gas chromatography. Where gas chromatography had been described previously, only newer techniques have been given in this volume.

No attempt was made to cover the literature completely from 1960 through 1970, but the authors endeavored to choose the most appropriate analytical methods based on their own experience or those of others who graciously contributed to this volume either by advice or direct contribu-

tion. To acknowledge the help of many friends and colleagues, we would like to thank especially the residue chemists of the Shell Development Company in Modesto; the Chemagro Co.; J. B. Leary and John Crossley of Chevron Chemical Co.; J. E. Barney, R. W. Buxton, J. C. McKay, W. Y. Ja, G. G. Patchett, D. L. Shelman, and W. J. Smith—all from the Stauffer Chemical Company in Richmond, California; Dr. John Boyd and N. R. Pasarela of American Cyanamid, Princeton, New Jersey; and Lois Ann Beaver of the Food and Drug Administration, Buffalo, New York.

Attention is called to the reader that at the end of this volume a Cumulative Subject Index will be found covering all six volumes.

"Food Additives" has been eliminated from the title because a separate, multivolume treatise would now be required to cover the compounds in this rapidly growing area.

We invite the readers of this book to send comments, corrections, additions, and any other suggestions which we will try to incorporate in future volumes of this treatise.

GUNTER ZWEIG
JOSEPH SHERMA

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