Introduction

The Fourth Symposium on Pesticide Formulations and Application Systems was held on 2-3 November 1983 in New Orleans, Louisiana. Like the previous three similar symposia (Philadelphia, 1980, ASTM STP 764; Kansas City, 1981, ASTM STP 795; Fort Mitchell, Kentucky, 1982, ASTM STP 828) it was sponsored by ASTM Committee E-35 on Pesticides and organized by Subcommittee E35.22 on Pesticide Formulations and Application Systems. The goals of this series are as follows:

1. Provide an open forum for presentations, discussions, and state-of-the-art review, covering the area of pesticide formulations, application systems, and related topics.

2. Allow for exchanges of ideas and discussions of problems confronted by manufacturers, shippers, applicators, and regulatory agencies.

3. Include a wide variety of topics in each symposium, such as formulating and testing procedures, container selection, storage stability, equipment and application techniques, and their relationships to pest control efficiency.

4. Discuss advances in overall techniques to improve the quality and yield of crops.

The papers in this volume are grouped into three sections: (1) Formulations, (2) Applications, and (3) Granules. The five papers in the Formulations section cover the role of anionic surfactants, seed treatment formulations, computerized optimization of emulsions, tank mix compatibility of pesticide combinations, and evaluation of antifoam performance. In the Applications section are nine different papers; the subjects discussed include applications of electrostatic spraying using water or vegetable oils as carrier for the pesticide in low-volume and ultra-low-volume applications, chemical injection for subsurface drip irrigation, evaluation of plant growth regulators, and laboratory research techniques for pesticide delivery systems. Finally, the Granules section contains a paper each on the topics of carrier-based toxic baits for control of fire ants, development of water dispersible granules, dry application of dry flowables, and sorptivity determination of clay carriers.

As was done for earlier symposia, the program was designed to appeal to the entire audience, which consisted of people representing industry, academia, applicators, regulatory agencies, and research institutions. The enthusiasm and keen interest expressed by the audience led the committee to expand the symposium to cover two full days.
This Special Technical Publication gives the reader a state-of-the-art overview of pesticide formulations and application systems. The subject matter covered by the papers reported herein indicates the broad scope of the symposium. This volume is expected to serve as useful reference for anyone involved in the formulation, manufacture, distribution, and application of pesticides.

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