

PESTICIDE FORMULATIONS AND DELIVERY SYSTEMS:

Meeting the Challenges of the
Current Crop Protection Industry

EDITORS: R. A. Downer,
J. C. Mueninghoff, and G. C. Volgas



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Foreword

This publication, *Pesticide Formulations and Delivery Systems: Meeting the Challenges of the Current Crop Protection Industry*, contains papers presented at the symposium of the same name held in Dallas, Texas, on 23–24 October 2001. The symposium was sponsored by ASTM Committee E35 on Pesticides. The symposium co-chairpersons were Roger Downer, Ohio State University, Jane Mueninghoff, Huntsman Corporation, and Gregory Volgas, Helena Chemical Company.

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Overview

The 22nd Symposium on Pesticide Formulations and Application Systems was held on 23–24 October 2001 in Dallas, Texas. The changes that have affected the crop protection industry over the past few years will have a lasting impact upon the industry and on the way in which its business is conducted. Greater demand for reduced costs, improved efficacy, and safety of crop protection agents, and increasing legislative pressures to reduce the use of these important farm tools will increase the need for combination tactics to be developed among all members of the industry. As a result, keeping “current” on the needs of the industry is a major challenge. Consequently, the symposium title “Meeting the Challenges of the Current Crop Protection Industry” seemed appropriate. Papers were invited from interested parties worldwide on topics related to the delivery of crop protection agents to their intended target sites.

The symposium program was initiated with a presentation on the changes that might or might not be expected following a change in political administration. The following sessions set out to integrate the efforts of formulation chemists, regulators, and those in industries related to application, e.g., sprayer and nozzle manufacturers. The sessions on formulation ingredients and design were created to appeal to formulation chemists and suppliers of formulation ingredients, as well as to biologists and engineers. These sessions dealt with a range of topics including novel polymeric dispersants, clays as microbial carriers, and Alkyl Citrate Ester surfactants. As with most industries, there are complex rules and regulations to be discussed and implemented and so, as in past symposia, a session on regulatory aspects was included. Presentations from the industry and the Chemical Producers and Distributors Association (CPDA) were included addressing topics relating to the legal issues facing the industry and matters concerning inert ingredients. The session on delivery strategies gave attendees an opportunity to hear presentations on topics that, in some cases, were far removed from traditional agricultural spray application. Two papers in particular stood out in this regard. One concerned bees as delivery agents and the other considered the delivery of microencapsulated medicine to bees. However, the opening paper of this session dealt with the more conventional topic of the multiple roles of surfactants in foliar application of systemic compounds. These symposia rarely occur without papers addressing issues of drop size control and this symposium was no exception. One paper discussed the challenges of drift reduction using air inclusion nozzle technology and a second presented information on pulse width modulated sprays used for flow rate and droplet size control. Other papers in this session addressed matters relating to application of abscission sprays to orange trees, use of adjuvants to influence Diuron and Norflurazon activity, and the use of humectants to with sul-fosulfuron and glyphosate.

The papers included in this volume seek to convey to the reader a sense that the business of developing and using crop protection agents is certainly complex. However, these papers also show that those who are involved in the business are working together in a rational and integrated manner with a view to continuing the production of CPA's that are safe to the user, the consumer and the environment.

Roger A. Downer
Ohio State University
Wooster, OH
Symposium Co-chairman and Editor

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