Foreword

This publication, *Pesticide Formulations and Delivery Systems, 25th Volume: Advances in Crop Protection Technologies*, contains papers presented at the symposium with the same name held in Washington, DC, October 5–7, 2004. The sponsor of the symposium was ASTM International Committee E35 on Pesticides and Alternative Control Agents.

The symposium chairman was Masoud Salyani, University of Florida, and the symposium co-chairman was Gregory Lindner, Uniqema.
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Overview

The 25th Symposium on Pesticide Formulations and Delivery Systems was held in Washington, D.C., on October 5–7, 2004. It was sponsored by ASTM Committee E35 on Pesticides and Alternative Control Agents and organized by Subcommittee E35.22 on Pesticide Formulations and Delivery Systems. The purpose of this symposium was to provide a forum for presenting the latest advances in crop protection technologies and to disseminate updates on regulatory issues related to the use of pesticides. The symposium consisted of five invited presentations and twenty contributed papers from national and international speakers representing academia, agrochemical industry, and government agencies.

The program started with the invited presentation of David Lindsay (Formulation Scientist, Degussa), chairman of the first E35.22 symposium on pesticide formulations and application systems. He reviewed the themes and scopes of the previous symposia and identified the changing trends in formulation and application research, development, and regulations, during the past 25 years. Don Erbach, Lois Rossi, Paul Miller, and Barbara Losey gave four more invited presentations before the morning and afternoon technical sessions. Erbach (National Program Leader in Engineering and Energy, USDA) outlined the Agricultural Research Service perspective on pesticide application technology. He emphasized the ARS priorities on increasing productivity, protecting the environment, and improving the safety and health of agricultural workers. Rossi (Director of Registration Division, Office of Pesticide Programs, U.S. EPA) talked about the EPA’s pesticide registration process. She explained the statutes that provide shape and direction to the Agency’s pesticide program. Miller (Research Leader, Chemical Application Technologies, Silsoe Research Institute, UK) gave an overview of factors influencing the performance of spray delivery systems. He emphasized the effect of spray liquid properties on nozzle performance. Losey (Executive Consultant, RegNet Environmental Services) gave an update on North American regulatory issues on NPEs. She spoke about risk assessment activities being used by the U.S. EPA, European Union, and Canadian PMRA.

Technical papers of the symposium covered a wide range of the topics. In this publication, they are divided into three groups: 1) Developments in pesticide formulations, 2) Innovations in adjuvant chemistry, and 3) Advances in application technology research.

1- Developments in pesticide formulations:


2- Innovations in adjuvant chemistry:

Jim Hazen introduces a new application for fatty amine alkoxylates as efficacy enhancers for storbilurin fungicides. He presents the results of the applications in several field crops. Elsik and Stridde
discuss the use of ethylenediamine alkoxylates as a new class of surfactants in glyphosate formulations. Singh and Singh present data on the use of trifloxysulfuran with several adjuvants for early detection of herbicide efficacy by visual mortality and chlorophyll fluorescence. Richard Zollinger evaluates several adjuvants in efficacy enhancement of tribenuron herbicide. Bially et al. demonstrate the promising effects of formulations containing alkyl glucosides and ethylene oxide-propylene oxide block copolymers on improving the infiltration of water in repellent soils.

3- Advances in application technology research:

The paper of Miller and Tuck discusses the interactions of spray liquid properties (formulation and adjuvant), air temperature, and nozzle performance. Downer et al. discuss nozzle/formulation interactions in terms of rebound characteristics of spray droplets. Clint Hoffmann compares the field-collected data and the AGDISP model predictions of spray flux in aerial applications to soybeans and cotton. Teske et al. explain the variation of droplet size distribution along the flight line of rotary atomizers. Wolf et al. compare several deposition-aid/drift-reducing additives in aerial applications. Zhu et al. discuss the effect of pH on emission intensity of fluorescent tracers used in assessment of spray deposition. Albrigo et al. describe an expert system for efficient scheduling of copper sprays in citrus applications.

This publication is a collection of the symposium’s peer-reviewed papers. It does not include the presentations of Erbach, Rossi, and Losey. The technical papers of this collection will also be published electronically in the Journal of ASTM International.

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