

# Pesticide Formulations and Delivery Systems:

The Continued  
Evolution of  
Agrochemicals

24<sup>th</sup> Volume  
STP 1460

**Editors:**  
G. Robert Goss  
Gregory C. Volgas  
Masoud Salyani



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Systems: The Continued Evolution  
of Agrochemicals,  
24<sup>th</sup> Volume***

*G. Robert Goss, Gregory C. Volgas, and Masoud Salyani, Editors*

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# Foreword

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The 24<sup>th</sup> Symposium on Pesticide Formulations and Delivery Systems was held in Tampa, Florida on 21–23 October, 2003. ASTM Committee E35 on Pesticide and Alternative Control Agents was the sponsor. Symposium chairmen were Humberto Lopez, Syngenta Crop Protection, Greensboro, NC; Gregory Volgas, Helena Chemical Company, Memphis, TN; and Masoud Salyani, University of Florida, Lake Alfred, FL. Mr. Volgas and Mr. Salyani also acted as co-editors of this publication, along with G. Robert Goss, Oil-Dri Corporation, Chicago, IL.

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# Overview

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The 24<sup>th</sup> Symposium on Pesticide Formulations and Delivery Systems held in Tampa, FL included 29 presentations. Of those 29 presentations, 14 papers reached publication in this peer-reviewed compilation. Individual papers can be also read in the Journal of ASTM International.

The world of pesticide formulations and delivery systems is continually evolving. Business, technological, environmental, and particularly regulatory pressures are forcing constant change. The paper by Lindner addresses some of these new challenges in formulating pesticides. From a business and technological aspect, the advent of GMOs (genetically modified organisms) brought great pressure to bear on the chemical aspects of pest control. For example, glyphosate is much more widely used today than in the past and papers by Young, Penner, and Singh address glyphosate efficacy.

In general, factors that are important to a chemical's efficacy as a pest control agent are the chemical itself, formulation, and delivery. The delivery can include liquids, solids, or even gases and the interaction of all of the above with the target organism is crucial. Volgas addresses increased mileage from an old chemical (2,4-D formulation) through a formulation change. Papers by Bergström (alkyl glucosides), Lei (ether amines), Narayanan (polymeric dispersants), Singh (glyphosate adjuvants), and Penner (water conditioners) all address liquid formulations and applications (either by the basic chemical formulation or as adjuvants blended in a spray tank). Solid formulations continue to maintain a presence, and papers by Winowiski (polymeric dispersants for WDGs) and Goss (granules) address aspects of these formulations. Finally, delivery and interactions of the pesticide with the target organism are discussed in papers by Teske (spray release height and drop size), Smith (aerial sprays), Farooq (abscission sprays), and de Ruiter (fluorescent imaging to assess efficiency).

The editors sincerely hope that the reader will enjoy this latest volume describing both changes and advances in the world of pesticide formulations and delivery systems.

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