EMERGING ISSUES IN ANALYTICAL CHEMISTRY

BRIAN F. THOMAS, SERIES EDITOR

HERBICIDES

Chemistry, Efficacy, Toxicology, and Environmental Impacts

ROBIN MESNAGE AND JOHANN G. ZALLER
EDITORS

The use of herbicides is an essential pillar of modern agricultural production systems. Weeds, if uncontrolled, would reduce crop yield and result in massive economic damage. Recently, the reliance on herbicides as the only weed control strategy has been linked to the development of weed resistance. To combat resistant weeds, farmers are advised to use a mix of several herbicides and to increase herbicide application rates. Although risk assessments of herbicides are mandatory, adverse effects are not always correctly predicted from the current battery of regulatory tests. As a result, the toxicity of herbicides on human health and the environment has become a controversial topic.

Herbicides: Chemistry, Efficacy, Toxicology, and Environmental Impacts addresses contemporary debates on herbicide toxicology. The reader is offered a comprehensive overview of this complex topic, presented by internationally recognized experts of different scientific disciplines. The information will feed the discussion on the use of herbicides in modern agricultural and other systems and their nontarget effects on human health and overall biodiversity in various ecosystems. The book covers these matters in concise language appropriate to engage both researchers and informed persons responsible for legislative, environmental, and public health matters.

KEY FEATURES

- Offers a comprehensive overview of herbicide science in modern agricultural systems, covering a brief history, the present state, and potential alternatives
- Addresses the complex problems that can arise from herbicide use and misuse, weed resistance, genetically modified crop farming, the role of coformulants, analytical strategies and monitoring, pollution, and human health issues
- Uses recent examples on many herbicides, and, with a focus on glyphosate, demonstrates the topical nature of this issue by including regulatory principles

Dr. Robin Mesnage is a toxicologist in the Department of Medical and Molecular Genetics at King's College, London.

Dr. Johann G. Zaller is an ecologist in the Department of Integrative Biology and Biodiversity Research at the University of Natural Resources and Life Sciences Vienna in Austria.

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