

## Special Issue

# Direct and Indirect Effects of Agricultural Pesticides on Insects

### Message from the Guest Editors

Insecticides are used to control pests of crops worldwide and have been instrumental in providing a safe and abundant food supply in many nations. However, insecticides have been shown to have negative effects on non-target organisms; these include both direct and indirect effects. Direct effects happen when non-target species are directly exposed to the insecticide. This may occur through sprays impacting the body of an organism, inhalation of droplets or aerosols, as an organism moves over and picks up insecticide applied to treat surfaces, or through ingestion of treated food. Direct toxic effects include acute and chronic mortality, negative effects on reproduction, reductions in weight gain, reduced longevity, increased time to first reproduction, and behavioral changes. Insecticides may also have indirect effects on certain species. Indirect effects are effects on resources, such as food and habitat, that have a negative effect on a species that has not been directly exposed. The goal of this Special Issue is to publish a series of papers by experts on the direct and indirect effects of insecticides to various non-target organisms.

### Guest Editors

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### Deadline for manuscript submissions

closed (30 June 2021)



## Toxics

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## About the Journal

### Message from the Editor-in-Chief

*Toxics* (ISSN 2305-6304) is an international, peer-reviewed, open access journal which provides an advanced forum for studies related to all aspects of toxic chemicals and materials. We aim to publish high quality work that furthers our understanding of the exposure, effects, and risks of chemicals and materials in humans and the natural environment as well as approaches to assess and/or manage the toxicological and ecotoxicological risks of chemicals and materials. Please consider publishing in *Toxics* when preparing your next paper.

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### Editor-in-Chief

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