THE OHIO STATE UNIVERSITY

Environmental Science Graduate Program Student Seminar Series

Acute Toxic Effects of Insecticide-Fungicide-Adjuvant Combinations on Honeybees

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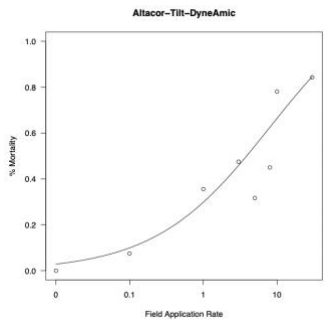
Zoom meeting ID: 998 2092 1442

https://osu.zoom.us/j/99820921442?pwd=d3hpTS9wYnc2Z29uZDR4NE4wNy81UT09

Abstract

Significant decreases in honeybee populations have been reported by beekeepers and farmers over the last couple decades without a clear explanation. This decrease in the honeybee population poses a major problem for the California Agriculture Industry because of its dependence on honeybees as pollinators. This research aimed to determine if combinations of “bee-safe” pesticides applied during almond bloom were a possible explanation for this decrease in the honeybee population. In this study, we aimed to mimic the spray application route of exposure by using a Potter Tower to spray sedated bees with the various treatments. This research determined that the combination of the fungicide Tilt and the insecticide Altacor displayed synergistic toxicity that was not observed when the treatments were applied individually. This study also looked at the toxic effects of adding adjuvants to pesticide mixtures. This study found that the addition of the adjuvant Dyne-Amic increased the toxicity of the Tilt and Altacor combination as well as other combinations and some individual pesticide treatments. These results suggest that the application of Tilt and Altacor in combination with an adjuvant at the recommended field application rates causes significant mortality in adult honeybees. Current research aims to expand the number of adjuvants tested and further understand the biological mechanisms of toxicity.



For more information, contact Heather Lochotzki (Lochotzki.7@osu.edu) or visit https://esgp.osu.edu/