

**Interactions between Glyphosate and Foliar Micronutrient Applications in Minimizing Corn Injury.** Oscar Morales, Bahar Y. Kutman, Brad Hanson, Department of Plant Sciences, University of California, Davis

Herbicide drift may lead to reduction in growth and yield of non-target crops. Use of herbicides and herbicide-resistant crops increases the risk of drift injury for farmers who grow non-glyphosate-resistant plants nearby. A few studies in the literature point out the possibility of reducing glyphosate drift injury by foliar applications of micronutrients. The aim of this experiment was to investigate whether micronutrients (zinc (Zn), nickel (Ni), and manganese (Mn)) would prevent drift injury when applied prior to simulated glyphosate drift or correct or reduce injury symptoms when applied after glyphosate. In this greenhouse experiment, sweet corn (*Zea mays* cv. Precious Gem) was used as a model plant. Nine days after sowing (DAS), pots were sprayed with 3 glyphosate doses: 0, 1.5 or 3 % of a recommended glyphosate dosage (100% = 1 lb ae/A). Either two days before or after glyphosate application, the plants were treated with foliar applications of water, Mn, Ni or Zn. Height measurements were taken during the experiment and plants were harvested 14 DAS for dry weight determination. It was found that neither pre- nor applications of these micronutrients had a significant beneficial effect on glyphosate drift injury in corn. However, it was observed that post-glyphosate applications of micronutrients actually aggravated injury. Relative to control plants, 1.5% glyphosate-treated plants were 15% shorter and had 30% less shoot biomass, whereas 3% glyphosate-treated plants were 65% shorter and had 90% less shoot biomass. When compared to pre-treated plants, post-treated ones were reduced by 15% in height and 30% in dry weight. Although more trials need to be conducted to verify these observations, the timing of micronutrient sprays seems to be critical since post-drift applications may actually worsen the glyphosate drift injury symptoms.