PESTICIDE ENVIRONMENTAL FATE:
DETERMINING FACTORS THAT AFFECT PESTICIDE AND TRACE ELEMENT ENVIRONMENTAL FATE AND BEHAVIOR IN VARIOUS LAND MANAGEMENT SYSTEMS

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With the increase in world population and decrease in arable land in specific regions, more food must be produced per unit area. Synthetic pesticides are one of several essential tools for production of food, fiber and alternative fuels as well as to maintain various noncropland areas. However, understanding pesticide environmental fate and behavior is of utmost importance to ensure land managers and producers effectively manage resources in an environmentally-responsible manner.

The overarching goal of our research group is to understand specific mechanisms and processes that affect pesticide and trace element fate and behavior in the environment to help better identify, manage and mitigate adverse effects of pesticides on human or environmental health. We conduct field, laboratory, greenhouse and growth chamber experiment research in various agronomic systems including specialty crops.

Specific areas of current interest and research include assessing factors that affect pesticide leaching and dislodgment, effect of physical and chemical soil properties on pesticide sorption, runoff, leaching and bioavailability, turfgrass clippings as a vector for off-target pesticide movement and phytoremediation potential of various riparian and aquatic species.