Developing an Attractant for Lygus Hesperus Derived from Host Plant Volatile Compounds

Zainulabeuddin Syed[1], Ricardo Ramirez[2] and Johanne Brunet [3]

[1] University of Kentucky, Lexington, KY 40456

[2] USDA-ARS, Department of Entomology, University of Wisconsin, Madison, WI 53706

[3] Department of Biology, Utah State University, Logan, Utah 84322

The western tarnished plant bug, *Lygus hesperus* (Knight), is a major pest on alfalfa due to its propensity to feed on reproductive parts. Continued use of pyrethroids has led to widespread insecticide resistance and mixed efficacy; and the recent revoking of an otherwise effective candidate sulfoxaflor significantly limits the management options. Thus, novel approaches that selectively target *L. hesperus* while sparing the non-targets are critical. One such approach is habitat management, or, habitat manipulation, that essentially aims to suppress pest densities by altering vegetation patterns. *Lygus hesperus* overwinters as adult and colonizes alfalfa fields from non-agricultural habitats and from wild host plants adjacent to fields. Preliminary findings from our analysis of the volatile chemical profiles of the wild host plants will be presented. Additionally, we will also present the data from our ultrastructural investigations of the sensory structures that define the olfactory behavior of the bugs.