

## Public Abstract

First Name:Lisa

Middle Name:Nicole

Last Name:Meihls

Adviser's First Name:Wayne

Adviser's Last Name:Bailey

Co-Adviser's First Name:

Co-Adviser's Last Name:

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Title:PREDATOR-PREY INTERACTIONS INVOLVING THE SOYBEAN APHID (HEMIPTERA: APHIDIDAE) IN MISSOURI

The recently introduced soybean aphid, *Aphis glycines* Matsumura, is found in all soybean growing areas within Missouri. Despite soybean aphid's widespread distribution, it has reached economic threshold in few soybean fields in Missouri. We hypothesized that a predator complex suppresses soybean aphid populations in Missouri prior to reaching economic threshold and that this complex can easily be disturbed by insecticide applications. To determine which predator is most responsible for suppressing aphid numbers, we caged soybean plants with different size meshes. Three sizes of mesh were used; one which excludes all insects, one which excludes insects larger than thrips, and one which excludes insects larger than a principal predator, *Orius insidiosus* (Say). Cages were infested with five soybean aphids at different plant growth stages. Sampling consisted of weekly visual observations for aphids and aphid predators. Whole plant counts of aphids and aphid predators were taken at 7 to 10 day intervals. The dominant predatory insects observed were *O. insidiosus* and coccinellids. Predators had a significant impact on soybean aphid establishment and population growth; populations exposed to predators never reached economic threshold while populations in cages which excluded predators quickly reached threshold. To determine how resilient the predator complex was, soybean plots were subjected to four insecticidal spray schedules. Predator efficacy was not significantly impacted by insecticide applications. Soybean aphid populations in all spray schedules remained well below economic threshold, despite infestation with colony reared aphids.