

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

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ABSTRACT

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. The dominant predatory insects observed were *O. insidiosus* (39.5%) and coccinellids (37.4%). 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. Soybean aphid populations in cages with small mesh infested on July 21 had significantly higher rate of increase than all other July 21 infested cages. Soybean aphid populations in August 5 infested cages with small and medium size mesh had higher rates of increase than large and no mesh cages. 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.