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# Soybean Aphid *Aphis glycines* Matsumura (Homoptera: Aphididae) Suction Trap Monitoring Network in Iowa

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# Soybean Aphid *Aphis glycines* Matsumura (Homoptera: Aphididae) Suction Trap Monitoring Network in Iowa

## **Abstract**

Beginning in July 2005 the Soybean Entomology Laboratory established four suction traps within Iowa. These suction traps have helped entomologists and growers understand the year to year variability in soybean aphid populations.

## **Keywords**

Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology

# Soybean Aphid *Aphis glycines* Matsumura (Homoptera: Aphididae) Suction Trap Monitoring Network in Iowa

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## Introduction

Beginning in July 2005 the Soybean Entomology Laboratory established four suction traps within Iowa. These suction traps have helped entomologists and growers understand the year to year variability in soybean aphid populations.

## Materials and Methods

The suction traps were built to be about 25 ft tall (Figure 1) to collect those winged aphids that migrated from buckthorn and soybean, and back. At this height, the traps were unlikely to collect aphids that might fly from one soybean plant to another. At the base of the trap was a jar filled with a preserving fluid. Aphids were pulled down the tube into the jar, and each week the jar was replaced. The contents were sent to Dr. David Voegtlin at the Illinois Natural History Survey. Dr. Voegtlin is an aphid taxonomist, and each year he and his assistants sorted through what the traps captured at the end of every week, counting and identifying all the aphids to species. The sex of soybean aphid was also identified.

Each week's trap captures were reported at a website: [www.ncpmc.org/traps/](http://www.ncpmc.org/traps/). The site at the Nashua farm is just one in a series of nearly twenty-two traps. At this website viewers can compare trap captures across the Midwest.

## Results and Discussion

During the first five years of the soybean aphid's invasion of North America, Dr. Voegtlin was reporting a remarkable trend. In years like 2003, large populations were reported (several 1,000 per plant) during July and August, but very few if any aphids were caught in

September and October. This is interesting because aphids making migratory flights during the fall are likely flying to buckthorn, their overwintering host. Curiously, during years like 2004, when very few aphids were observed on soybean plants during the growing season and few aphids were collected in suction traps, significantly more were caught during the fall. This trend has been observed several times now in the suction trap network in Illinois.

In the fall of 2005, we observed very few soybean aphids collected in the suction traps. However, we did collect a fair amount in September (Figure 2), average ( $\pm$ SEM) per suction trap in September =  $25 \pm 17$ , with the largest number collected in Iowa coming from the trap at the Nashua farm (118 on September 16, 2005). On that date, all of these were identified as females. Throughout the 2005 trapping season, we did not observe any male aphids within the suction trap at Nashua.

To what extent the suction traps can predict soybean aphid outbreaks has not yet been tested. We lack any historical data because was the first year that the traps ran in Iowa. However, it is interesting to note that unlike other states (Michigan, Illinois, and Indiana) where few if any aphids were caught in the fall, there was a significant number caught in Iowa.

We will continue to explore soybean aphid migration in the coming growing season. Traps will be run from May to October during 2006. Please visit the website listed above for weekly updates.

## Acknowledgments

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Figure 1. One of four suction traps set up in 2005 for soybean aphid sampling.

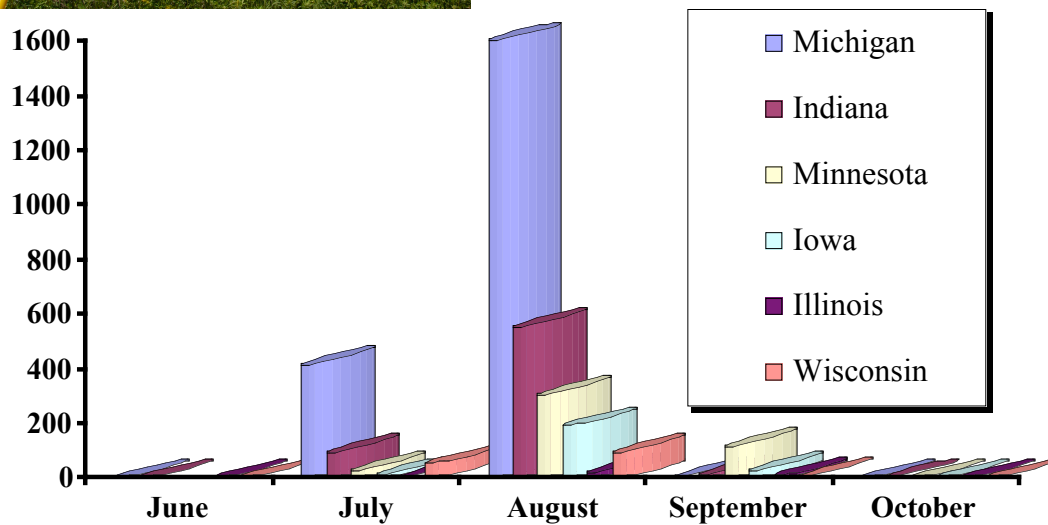


Figure 2. Regional summary of suction trap data from 2005 across six states. Traps were deployed for the first time in all states but Illinois, with all states running traps from mid-July to the end of October. The number of traps varied by state. Visit [www.ncipmc.org/traps/](http://www.ncipmc.org/traps/) for more information.