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## 2005 Wrap-up

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## 2005 Wrap-up

### **Abstract**

The 2005 growing season left many growers with very different experiences managing insect pests in soybeans. Aphids were feared to return to economic populations, and for nearly 2 million acres in Iowa, they did. However, many growers reported fields with 250 or more aphids per plant next to fields that had few if any aphids. I was a bit skeptical of this last observation, but such a situation occurred next to one of our research plots in Story County. Just as one would expect, the field that we had carefully marked and planted for research had a sub-economic population of soybean aphids.

### **Keywords**

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### **Disciplines**

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# INTEGRATED CROP MANAGEMENT

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## Insects and Mites

### 2005 Wrap-up

by Matt O'Neal, Department of Entomology

The 2005 growing season left many growers with very different experiences managing insect pests in soybeans. Aphids were feared to return to economic populations, and for nearly 2 million acres in Iowa, they did. However, many growers reported fields with 250 or more aphids per plant next to fields that had few if any aphids. I was a bit skeptical of this last observation, but such a situation occurred next to one of our research plots in Story County. Just as one would expect, the field that we had carefully marked and planted for research had a sub-economic population of soybean aphids. But throughout July and August, just 20 feet to the north, a 10-acre field of soybeans following alfalfa reached several thousand per plant by the first week of August. For more on why this neighboring field may have suffered from aphids while the one we were working in did not, see "Soybean aphids and K-deficient soybeans," page 6. So, aphid populations were at times spotty but significant. What lessons can we draw from the 2005 growing season, and how should we prepare for 2006?

Let's start with the big picture and compare the soybean aphid experience of Iowa to other states in the Midwest. Outbreaks of soybean aphids were reported in several states, with millions of acres treated in Minnesota, Indiana, and Michigan. Michigan soybean growers had an especially remarkable year. By June many Michigan growers had soybean aphid populations above 250 per plant, resulting in 80 percent of all soybeans grown in Michigan being treated with an insecticide for soybean aphid management. By the end of the growing season, an additional 10 percent were treated two



A large colony of soybean aphids often consists of white, shed skins and brownish carcasses killed by fungal pathogens. (Marlin E. Rice)

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to three times. Entomologists at the University of Minnesota estimate that enough insecticide was purchased to treat 5 million acres. Like Iowa, Indiana experienced the greatest soybean aphid populations within the northern third of the state. Breaking this trend for a regional outbreak of soybean aphids were Illinois and Wisconsin. Given the dry conditions and the spider mite infestations that followed, it is likely that soybean aphids were not the most significant soybean insect pest that growers in these states had to face.

For soybean growers in Iowa, 2005 saw a resurgence of soybean aphid problems and insecticide use (Table 1). Although we did not reach insecticide usage levels like that of 2003, it is remarkable to note that 10 years ago it was estimated that very little if any insecticide was used in U.S. soybean production. In Iowa for 2005, field crop extension staff estimated that nearly 2 million acres were treated for soybean aphids. The northern third of the state experienced the highest insecticide use, and given my field observations, experienced the highest soybean aphid populations as well.

In this special edition, several issues will be discussed regarding soybean aphid biology and management. Given the large populations that were experienced in parts of Iowa, there was an opportunity to conduct experiments on how best to manage economic populations of soybean aphids. In the subsequent articles, we review these data and reveal some insights for soybean aphid management for the 2006 growing season.

**Table 1. Estimates of insecticide use for soybean aphid management in Iowa.**

Year	Estimate Acres Treated
1996 .....	0 acres <sup>a</sup>
2003 .....	4 million acres <sup>b</sup>
2004 .....	250,000 acres <sup>c</sup>
2005 .....	2 million acres <sup>d</sup>

<sup>a</sup>Fernandez-Cornejo, J. and S. Jans. 1999. "Pest management in U.S. Agriculture." Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Agriculture Handbook No. 717.

<sup>b</sup>Pilcher, C., M. E. Rice, and T. Vagts. 2005. "Economic impact of soybean aphid." Iowa State University Extension, *Integrated Crop Management Newsletter* IC-494 (13).

<sup>c</sup>O'Neal, M. and K. Johnson. 2005. "Soybean aphids attack: Does it pay to spray low populations?" Iowa State University Extension, *Integrated Crop Management Newsletter* IC-494 (22).

<sup>d</sup>O'Neal, M. 2005. "Insecticide use for soybean aphid control up again in 2005." Iowa State University Extension, *Integrated Crop Management Newsletter* IC-494 (24).

See also [www.ipm.iastate.edu/ipm/icm/2005/10-10/aphids.html](http://www.ipm.iastate.edu/ipm/icm/2005/10-10/aphids.html).

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