10-10-2005

Insecticide use for soybean aphid control up again in 2005

Matt O’Neal
Iowa State University, oneal@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/cropnews
Part of the Agriculture Commons, and the Entomology Commons

Recommended Citation
http://lib.dr.iastate.edu/cropnews/2409

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit https://crops.extension.iastate.edu/.
Insecticide use for soybean aphid control up again in 2005

**Abstract**
The summer of 2005 saw an increase in soybean aphid populations from very low populations experienced in 2004. Although not completely unexpected, the differences between 2004 and 2005 are still remarkable. Last year, many field crop entomologists were at a loss for data, with soybean aphid populations peaking at no more than a couple hundred per plant. This year we collected plenty of data, with long days spent counting sometimes thousands per plant. The record for aphid outbreaks was set in Michigan. Chris DiFonzo, field crop entomologist at Michigan State University, reported nearly 90 percent of the soybeans planted in the state were treated for soybean aphids. In the Lower Peninsula, populations went well above our current recommended threshold (250 per plant) in June and reports of spraying continued into August.

**Disciplines**
Agriculture | Entomology

This article is available at Iowa State University Digital Repository: [http://lib.dr.iastate.edu/cropnews/2409](http://lib.dr.iastate.edu/cropnews/2409)
The triticale performance was low relative to previous years, though the best triticale still performed far better than the winter wheat check. Average variety yields were 52 bushels per acre for the wheat check and 63 bushels per acre for triticale. The top triticale variety averaged 85 bushels per acre. The performance data reported includes grain yield, test weight, heading date, plant height, percent lodging, and winter survival.

For more information about the test, contact Jean-Luc Jannink, assistant professor of agronomy, at jjannink@iastate.edu.

Iowa Crop Improvement Association’s crop performance testing program is a cooperative effort with the Iowa Agriculture and Home Economics Experiment Station at Iowa State University and Iowa State University Extension. The program offers unbiased, third-party information to Iowa growers on commercial seed they can purchase. Information on the adaptation and performance of hybrids and varieties is offered for alfalfa, barley, corn, oat, soybean, triticale, and wheat. ICIA’s Web address is www.agron.iastate.edu/icia/.

Jean McGuire is an extension communications specialist with responsibilities in agriculture and natural resources.

**Insects and Mites**

**Insecticide use for soybean aphid control up again in 2005**

by Matt O’Neal, Department of Entomology, Iowa State University

The summer of 2005 saw an increase in soybean aphid populations from very low populations experienced in 2004. Although not completely unexpected, the differences between 2004 and 2005 are still remarkable. Last year, many field crop entomologists were at a loss for data, with soybean aphid populations peaking at no more than a couple hundred per plant. This year we collected plenty of data, with long days spent counting sometimes thousands per plant. The record for aphid outbreaks was set in Michigan. Chris DiFonzo, field crop entomologist at Michigan State University, reported nearly 90 percent of the soybeans planted in the state were treated for soybean aphids. In the Lower Peninsula, populations went well above our current recommended threshold (250 per plant) in June and reports of spraying continued into August.

At a September meeting, I conducted a brief survey of the Iowa field crop specialists to get a sense of how many acres of soybeans were treated for soybean aphid in Iowa. I asked each of the 12 agents to estimate the acreage that was treated with a foliar insecticide. If they gave a percent, I estimated the acreage based on 2004 harvested acreage estimates from the National Agriculture Statistics Services (www.usda.gov/nass/). This is an underestimate of total insecticide usage in soybeans as spider mite outbreaks occurred that are not part of this estimate. Also, I did not ask the specialists what percentage had an insecticide applied directly to the seed. The goal is to provide a general sense of the intensity and location of insecticide usage in Iowa soybeans. I will follow up with more direct estimates during the fall and winter months.

Of the 12 field crop specialists, all but one provided an estimate. Todd Vagts of Region 6 (Figure 1) is conducting his own survey and has not yet received responses from it. In total, we estimated a little over 2.1 million acres treated (Table 1). The greatest amount of insecticide was used in the northern third of the state (top 4 regions = 2, 4, 1, 5). Although the actual amount may vary from this estimate, it is interesting to note that last year, based on a similar survey, I estimated only 100,000 acres treated. It appears that the year-to-year fluctuations of this pest have continued. It will be very interesting to determine how this pattern plays out across the Midwest. Are regions of Iowa (and the Midwest) closest to large amounts of the overwintering host (buckthorn) more at risk for aphid outbreaks?

Soybean aphids will lay eggs near bud scales on limbs of buckthorn in the fall and then they overwinter there. (David Voegtlin)
The suction trap network that was discussed last issue attempts to collect aphids as they conduct migratory flights between summer and fall hosts. In the past four years, we have used data collected from suction traps deployed only in Illinois to predict the overwintering success of soybean aphids. This year we have expanded that network to include several states, including Iowa. Yet there are still many questions that need to be answered. At what spatial scale is the risk of spring aphid immigration suggested by suction trap data realized? What other factors (soil fertility, multiple pest interactions, predation from insect predators, weather) contribute to such a prediction? We will continue to provide updates with regards to both our suction trap network and insights into soybean aphid ecology and pest management.

Matt O’Neal is an assistant professor of entomology with research and extension responsibilities for pest management in soybeans.

---

Soil Fertility

High nitrogen fertilizer prices—again

by John Sawyer, Department of Agronomy

Corn N fertilization. I am often asked what N rate should be applied for corn production. I hesitate to give too simple of an answer, but actually a straightforward rate of 125 lb N/acre for corn following soybean (SC) and 175 lb N/acre for corn following corn (CC) (continuous, second-, or third-year) with good N management works well. If you have followed Iowa State University Extension publications regarding N management over the years, these rates are in the middle of suggested rate ranges provided since at least 1979 (100–150 lb N/acre for SC and 150–200 lb N/acre for CC). An analysis of recent data from many N rate trials conducted in Iowa since 1991 indicates these “straightforward” rates are still correct. Figure 1 shows the economic net return to N for SC and CC at four different price ratios of N price:corn grain price ($/lb N:$/bu corn grain). For the figure, the corn price was held constant at $2.20/bu and N prices were varied from $0.11, 0.22, 0.33, and 0.44 per lb N. These give price ratios of 0.05, 0.10, 0.15, and 0.20, respectively at the four N prices. The point of maximum return to N (MRTN) is the N rate where the greatest economic net return to N occurs. This is indicated by the solid symbols on each price ratio line. As you can see, at the 0.10 price ratio the maximum return occurs at 123 lb N/acre for SC and 174 lb N/acre for CC, at the middle of currently suggested N rate ranges.

Also remember that corn following established alfalfa most often requires no N application, with an occasional response to a small amount of N, around 30 lb N/acre. Second-year corn after alfalfa is more responsive to applied N, with response up to 60–90 lb N/acre. Second-year corn following soybean is gaining acreage in Iowa. Nitrogen rate trial data is limited from across Iowa; however, based on a long-term and on-going N rate-crop rotation study conducted at