

Insecticides Protect Soybeans from New Invasive Aphid

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Traditionally, only about 2% of U.S. soybean acres received insecticide treatment. However, with the introduction of the soybean aphid to the Midwest, approximately 16% of U.S. soybean acres (12 million acres) are currently treated with insecticides (Figure 1) [1],[2].

The soybean aphid is native to Asia where it is the main pest in soybean fields. In 2000, the soybean aphid was first detected in Wisconsin. Subsequent surveys detected the pest in 20 states.

Thousands of aphids have been observed on the leaves of plants in some fields. Aphids remove plant sap from soybean leaves with piercing-sucking mouthparts. Even at low densities, feeding by soybean aphid can greatly impair photosynthetic processes in soybeans. High soybean aphid densities cause damage by reducing plant height, pod number, and total yield. Heavy infestations of the soybean aphid have caused economic yield losses up to 45% in some untreated fields [3]. In Michigan, 13,000 aphids per plant and 40% loss in seed yield were recorded [4].

Soybean aphids reproduce asexually increasing their numbers rapidly. In the summer, the population in soybeans is comprised of females that essentially clone themselves and give birth at rates of 3 to 8 aphids per day for about a month. The soybean aphid population doubles every two to three days.

Research trials in the Midwestern U.S. show that insecticide sprays reduce the number of aphids per plant by 95% [5]. Insecticide treatments to control soybean aphid have prevented soybean yield losses of 30-50% [6].

References

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Soybean aphids on leaves



Insecticide treatment for soybean aphids, untreated side at left

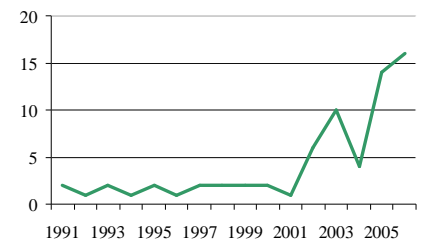


Figure 1: U.S. Soybean Acreage Treated with Insecticides (% Acres Treated)