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Options for Soybean Aphid Host Plant Resistance

Michael T. McCarville

Iowa State University, mikemcc@iastate.edu

Erin W. Hodgson

Iowa State University, ewh@iastate.edu

Matthew E. O'Neal

Iowa State University, oneal@iastate.edu

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Options for Soybean Aphid Host Plant Resistance

Abstract

Host plant resistance for soybean aphid is the newest management tool for farmers. In 2010, a single gene expression, called *Rag1*, was commercially released in the North Central Region. Aphids feeding on *Rag1* plants do not live as long or produce as many offspring compared to feeding on susceptible plants. In small plot evaluations of the *Rag1* gene, there is a dramatic decrease in the seasonal accumulation of soybean aphid compared to susceptible varieties.

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Options for Soybean Aphid Host Plant Resistance

By Michael McCarville, Erin Hodgson, and Matt O'Neal, Department of Entomology

Host plant resistance for soybean aphid is the newest management tool for farmers. In 2010, a single gene expression, called *Rag1*, was commercially released in the North Central Region. Aphids feeding on *Rag1* plants do not live as long or produce as many offspring compared to feeding on susceptible plants. In small plot evaluations of the *Rag1* gene, there is a dramatic decrease in the seasonal accumulation of soybean aphid compared to susceptible varieties.

The entomology department at Iowa State University recently released a new publication, [Soybean aphid-resistant varieties for Iowa](#), that lists currently available soybean seed with resistance to soybean aphid. The list is intended to assist farmers wanting to adopt this new management tactic for soybean aphids, a sporadic pest that can reduce yield by as much as 40 percent. The listing includes varieties in late maturity group 0 and maturity groups 1, 2 and 3.

The list contains 16 varieties from 10 companies. Seed companies provided varietal information including relative maturity, herbicide resistance, source of aphid resistance and resistance to other pests. Two items of interest to farmers will be:

1. Four varieties with resistance to both the soybean aphid and soybean cyst nematode (SCN). The SCN is a pervasive and serious pest of soybean in Iowa. Farmers with SCN infested fields are encouraged to select an SCN-resistant variety.
2. One variety carrying two different genes for soybean aphid resistance. Varieties containing two soybean aphid resistance genes provide significantly better aphid control than varieties containing a single resistance gene.

The publication also contains Iowa State University recommendations for considering soybean aphid-resistant varieties. For more information on soybean aphid management consult: [Soybean Aphid Management Field Guide 2nd edition](#). Additional information about insecticides is found in the most recent [soybean aphid insecticide efficacy evaluation](#). This publication was funded in part by the Soybean Checkoff and the Iowa Soybean Association.

Michael McCarville is a Department of Entomology graduate student; he can be reached at 515-294-8663 or by email at mikemcc@iastate.edu. Erin Hodgson is an assistant professor of entomology with extension and research responsibilities. She can be contacted by email at ewh@iastate.edu or phone 515-294-2847. Matt O'Neal is an associate professor in the

Department of Entomology with teaching and research responsibilities. He can be reached at oneal@iastate.edu or at 515-294-8622.

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