

5-19-2003

Corn leaf aphids in seedling corn

Marlin E. Rice

Iowa State University, merice@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/cropnews>

 Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Entomology Commons](#)

Recommended Citation

Rice, Marlin E., "Corn leaf aphids in seedling corn" (2003). *Integrated Crop Management News*. 1641.
<http://lib.dr.iastate.edu/cropnews/1641>

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 Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user.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/>.

Corn leaf aphids in seedling corn

Abstract

On May 8, Lee Fraise (Monsanto Company) reported finding six to eight aphids per plant in coleoptile-stage corn in Des Moines County. These aphids are probably corn leaf aphids, which can occur on seedling corn in Iowa, but are usually uncommon until the plants approach the tasseling stage.

Keywords

Entomology

Disciplines

Agricultural Science | Agriculture | Entomology

INTEGRATED CROP MANAGEMENT

Corn leaf aphids in seedling corn

On May 8, Lee Fraise (Monsanto Company) reported finding six to eight aphids per plant in coleoptile-stage corn in Des Moines County. These aphids are probably corn leaf aphids, which can occur on seedling corn in Iowa, but are usually uncommon until the plants approach the tasseling stage.

Research was conducted on corn leaf aphids in seedling corn in the late 1980s by Jim Bing (USDA Corn Insects Lab, Ankeny, and Iowa State University). Five corn inbred lines (B37, B73, C100, Mo17, and B96 [41:2504B]) were infested with 15 winged corn leaf aphids in the greenhouse and then transplanted to the field to quantify the effects of seedling feeding.

The research findings, published in the *Journal of Economic Entomology*, were as follows: Plants infested in the coleoptile and two-leaf stage were the most sensitive to aphid feeding; however, the expression of this damage may have been modified by cool spring conditions or drought conditions. All five inbred corn lines showed temporary or permanent stunting in one or more of the 3 years of the study; B37 and B96 were the most sensitive inbreds.

Aphid feeding also resulted in lower grain-fill ratings in some infested inbred plants compared with uninfested plants, particularly plants infested at the coleoptile and two-leaf and four-leaf stages. The plants infested in the coleoptile and two-leaf stage had larger reductions in grain fill than did plants infested in the four-leaf stage, suggesting that these growth stages were more sensitive to aphid feeding. Inbreds B73 and Mo17 were resistant to grain-fill reductions (i.e., no yield reductions) caused by seedling corn leaf aphid feeding. Inbreds B37, C103, and B96 all showed reductions in grain fill when infested with corn leaf aphids.

Temporary stunting followed by reduced yields is a common result of damage to seedling plants by piercing-sucking insects. Corn leaf aphid damage to seedling corn may be most significant in seed production fields where planting of susceptible genotypes may be delayed to ensure proper pollination. Genotypes such as B96 that have poor seedling vigor may be more sensitive to early aphid feeding because they cannot withstand the removal of plant assimilates as well as more vigorous inbred and hybrid genotypes. Corn leaf aphid feeding on seedling plants also would be more serious in areas that have corn leaf aphid populations present all year. Seedling damage in corn has been generally overlooked and is poorly understood.

In summary, feeding by corn leaf aphids on coleoptile and two-leaf stage plants delayed plant development, reduced plant height, and delayed pollen shed and silking. Some inbreds showed a reduction in grain yield. Economic thresholds are not available but aphid populations of 15 or more per seedling plant may need to be controlled in seed production fields if susceptible inbreds are grown.

This article originally appeared on page 74 of the IC-490 (9) -- May 19, 2003 issue.

Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2003/5-19-2003/cornleafaphids.html>

IOWA STATE UNIVERSITY
University Extension