

6-28-1999

Insect injury to mid-season 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., "Insect injury to mid-season corn" (1999). *Integrated Crop Management News*. 2121.
<http://lib.dr.iastate.edu/cropnews/2121>

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 Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user.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

Insect injury to mid-season corn

Abstract

Now that most corn is past the stage of being injured by early-season pests such as wireworms, white grubs, and black cutworms, our attention needs to turn to mid-season insects. It is estimated that 30 percent of the corn acres will be planted to Bt corn this year, and in those acres, European corn borer injury will be almost nonexistent. However, most other corn insects are unaffected by Bt corn and their injury probably can be found on any type of corn hybrid regardless of the plant genetic background.

Keywords

Entomology

Disciplines

Agricultural Science | Agriculture | Entomology

INTEGRATED CROP MANAGEMENT

Insect injury to mid-season corn

Now that most corn is past the stage of being injured by early-season pests such as wireworms, white grubs, and black cutworms, our attention needs to turn to mid-season insects. It is estimated that 30 percent of the corn acres will be planted to Bt corn this year, and in those acres, European corn borer injury will be almost nonexistent. However, most other corn insects are unaffected by Bt corn and their injury probably can be found on any type of corn hybrid regardless of the plant genetic background. Feeding injury caused by insects other than the European corn borer may be evident to the farmer or field scout. This injury may be incorrectly identified as European corn borer feeding, thereby creating doubt about the performance of Bt corn. This article highlights leaf-feeding insects, their injury to corn leaves, and how each differs from the European corn borer. The European corn borer does not feed on seedling corn plants; therefore, the insects that injure very young plants are not included in this article.

European corn borer

Very small holes in whorl leaves. Newly hatched larvae often feed deep inside the whorl and do not chew completely through the leaf but only remove a shallow layer of plant cells. This early feeding creates an opaque "window" of leaf tissue. As larvae grow, they then can chew through the leaf. Emerged leaves from the whorl will have small holes either randomly scattered or arranged in a repeating pattern across the leaf. Holes are not large enough to cut the leaf from the plant. Injured leaves are not wrinkled. Holes are not bordered by wide halos of brown or yellow. European corn borers seldom feed on plants smaller than 17-21 inches in height (extended leaf height).



European corn borer larvae have a black head and "neck," with a lighter-colored body.

[1]



[2] **Corn borer shotholes in corn leaves.**



[3] **European corn borer shotholes and tunnel in leaf midrib.**

Tunnels in leaf midrib. Mid-sized larvae may tunnel into leaf midribs. Tunnels range in length from 1¼ inch to 3 inches. Tunnels occur mostly near the middle section of a leaf, never near the tip, and occasionally at the base of a leaf. Wind or rain may cause the leaf to break downward where the tunnel occurs.

Tunnels in leaf collar. Mid-sized and large larvae tunnel in the leaf collar (leaf base) where it wraps around the stalk. Larvae kick sawdustlike frass out of the tunnel and this frass accumulates on the leaf.



[4] **European corn borer frass at leaf collar indicates a tunneling insect.**

Stalk borer

Large, ragged holes in whorl leaves; leaves may be cut from plant. Larvae feed inside the whorl eating large, irregular holes in leaves. Large holes, 2 or 3 inches in length, cause leaves to break over or to be cut completely from the plant. Holes are much larger than those of the European corn borer. Infested young plants are stunted and may die. Injury is most common along field margins or in areas with giant ragweed or weedy grasses.



[5]

Early stage stalk borer has a purple midsection and an orange head with a black stripe.



[6] **Stalk borer injury to whorl-stage corn.**

Armyworm

Tissue removed from the leaf edges; often only the midrib remains. Larvae begin eating near the edges of the leaf, consuming all of the leaf except for the tougher midrib. Feeding starts on the lower leaves and progresses up the plant. The whorl leaves are eaten last. Armyworms are usually easy to observe on the leaves and rarely hide in the whorl like European corn borers. Up to a dozen larvae may feed on the same plant.



[7] **Armyworm.**



[8] **Fall armyworm injury to whorl-stage corn.**



[9] **Armyworm injury to a cornfield.**

Corn earworm

Large holes in whorl leaves. Larvae feed deep inside the whorls, especially on very late-planted corn in the upper Midwest. Holes may be 1 or 2 inches across and often mirror each other on opposite leaves that have emerged from the whorl. Injury resembles fall armyworm injury.



[10] **Corn earworms are striped with an orange-freckled head.**



[11]

Corn earworms are multi-colored and may be green, red, or brown with shades of lighter stripes.



[12] **Corn earworm whorl-feeding injury.**

Fall armyworm

Large holes in whorl leaves. Larvae feed deep inside the whorls, especially on very late-planted corn in the upper Midwest. Holes may be 1 or 2 inches across and often mirror each other on opposite leaves that have emerged from the whorl. Injury resembles corn earworm injury.



[13]

Fall armyworm has four black spots on the top of each body segment; spots are largest near the tail.



[14] **Fall armyworm injury to whorl-stage corn.**

Stink bug

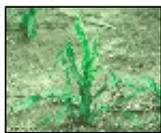
Plant stunted and may grow lateral shoots; leaves wrinkled; holes of various sizes, scattered randomly or in repeating patterns often with a yellow halo; whorl leaves wrapped tight and failing to expand. Injury is most common on newly emerged plants through the 4th true-leaf stage, but it also may occur on mid-whorl-stage plants. Stink bugs pierce the side of the stalk with their beak. Saliva injected into the leaf during feeding creates holes from pinhole diameter up to 1 inch on expanded leaves. Holes are often surrounded by dead, brown tissue and a yellow halo. Feeding patterns are often repeated across the leaf. Injured leaves are often twisted. Heavily injured plants that are not killed by the feeding will grow new lateral shoots (tillers).



[15] **Stink bugs are triangular-shaped.**



[16] **Stink bug injury on corn leaf.**



[17] **Stink bug injury to corn.**

Grasshopper

Large sections of the leaf edges eaten; often only the midrib remains. Feeding may begin anywhere on the plant but rarely on the bottom leaves. Injury may start at the leaf edge or in the center of the leaf adjacent to the midrib. There is no pattern to the feeding. Very large populations consume all the leaf except for the tougher leaf midrib. Injury is similar to that caused by armyworms, but armyworms start feeding on the bottom leaves and progress up the plant.



[18] **Differential grasshopper is a common corn pest.**



[19] **Grasshopper injury to corn leaves.**

Western corn rootworm

Long, narrow, light gray strips eaten in leaves. Beetles eat long, narrow strips in leaves if tassels have not emerged and pollen is not available as food. Leaf feeding turns a light gray. Heavily eaten leaves may split and fray in the injured area.



[20] **Western corn rootworm beetle.**



[21] **Western corn rootworm beetle injury on corn leaf.**

This article originally appeared on pages 117-121 of the IC-482(16) -- June 28, 1999 issue.

Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/1999/6-28-1999/midscorninj.html>

Links:

[1] <http://www.ipm.iastate.edu/ipm/icm//iecblarvae.html>

- [2] <http://www.ipm.iastate.edu/ipm/icm//ishotholeleaf.html>
- [3] <http://www.ipm.iastate.edu/ipm/icm//iecbshotribs.html>
- [4] <http://www.ipm.iastate.edu/ipm/icm//ifrass.html>
- [5] <http://www.ipm.iastate.edu/ipm/icm//istalkborer.html>
- [6] <http://www.ipm.iastate.edu/ipm/icm//istalkbinj.html>
- [7] <http://www.ipm.iastate.edu/ipm/icm//iarmyw.html>
- [8] <http://www.ipm.iastate.edu/ipm/icm//iarmywinj.html>
- [9] <http://www.ipm.iastate.edu/ipm/icm//iarmywcfield.html>
- [10] <http://www.ipm.iastate.edu/ipm/icm//iceworm.html>
- [11] <http://www.ipm.iastate.edu/ipm/icm//icew.html>
- [12] <http://www.ipm.iastate.edu/ipm/icm//icewwhorl.html>
- [13] <http://www.ipm.iastate.edu/ipm/icm//ifarmyw.html>
- [14] <http://www.ipm.iastate.edu/ipm/icm//ifarmyinj.html>
- [15] <http://www.ipm.iastate.edu/ipm/icm//istink.html>
- [16] <http://www.ipm.iastate.edu/ipm/icm//istinkinj.html>
- [17] <http://www.ipm.iastate.edu/ipm/icm//istinkbuginj.html>
- [18] <http://www.ipm.iastate.edu/ipm/icm//idiffgh.html>
- [19] <http://www.ipm.iastate.edu/ipm/icm//ighinj.html>
- [20] <http://www.ipm.iastate.edu/ipm/icm//iwrw.html>
- [21] <http://www.ipm.iastate.edu/ipm/icm//iwrwinj.html>

IOWA STATE UNIVERSITY
University Extension