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# European Corn Borer Numbers Are Up in 2009

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**Abstract**
Like 2008, first generation European corn borer activity has increased compared to the early 2000s. Dr. Tom Sappington (USDA-ARS Corn Insects and Crop Genetics Lab, Ames) and entomologists in Nebraska have recently reported increased adult catches in black light traps and in sweep net sampling. This means that corn not protected against corn borers, including refuge corn, should be scouted now for European corn borers to determine if an insecticide needs to be applied.

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# European Corn Borer Numbers Are Up in 2009

**Erin Hodgson and Jon Tollefson, Department of Entomology**

Like 2008, first generation European corn borer activity has increased compared to the early 2000s. Dr. Tom Sappington (USDA-ARS Corn Insects and Crop Genetics Lab, Ames) and entomologists in Nebraska have recently reported increased adult catches in black light traps and in sweep net sampling. This means that corn not protected against corn borers, including refuge corn, should be scouted now for European corn borers to determine if an insecticide needs to be applied.

**Scouting**

Although all refuge fields should be scouted every year for European corn borer, mated females are often attracted to and lay eggs in the tallest cornfields first. Sample corn plants in at least 100 feet from the field edge. Look for larval feeding in the leaves, also known as “shot holes.” There is usually no reason to perform an in-depth plant survey if shot-holed leaves are not detected in the field. If larval damage is evident, pull the whorls from five plants at five locations throughout the field (10 plants at 5 locations would be even better). Whorls should be selected at random. Unwrap the whorl leaves and count the number of live larvae. Do not pull whorls only from plants with shot-holed leaves because this approach actually overestimates the European corn borer population.

If corn borer larvae are found, don't schedule a spray too early. If most of the larvae are less than one-fourth inch long, wait 3 to 5 days for predators, pathogens, rainstorms, high winds, and high temperatures to naturally reduce populations while new larvae hatch. Larvae can be controlled with insecticides, but an application must be done before they begin boring into the stalk. Be sure to spray before most larvae reach the fourth instar (eleven-sixteenths inch in length); at this stage they leave the whorl or leaf midrib and tunnel into the stalk.

If the economic threshold is not reached after sampling, but considerable small larvae are found within the whorls, resample that field in 3 to 5 days. Do not add the previous counts to the most recent field counts. Discontinue scouting when large larvae are tunneling into the stalk and small larvae are no longer found in the whorls.

**Management**

To facilitate calculating the changes in the action threshold for European corn borer action threshold, an Excel spreadsheet has been created. These calculations use the expected yield and the anticipated market value of corn to determine the profit/loss margin. Please use anticipated yield estimates that are appropriate for the stand that has been planted and is established. This calculation assumes only 80 percent control by an insecticide.

To make these calculations easier, follow this link to dynamic threshold spreadsheet. By saving the Excel spreadsheet to your personal computer, it can be used repeatedly as the value of corn and cost of control change.

There is an explanation with two examples to demonstrate the spreadsheet tools. If the user downloads the Excel spreadsheet and inserts their values (in Ex. 3 column) for expected yield, anticipated market value, larval density and the cost of control - a profit/loss margin will be calculated in dollars.

There are several foliar products registered in Iowa for European corn borer control in corn (Table 1). Follow label directions and pay attention application guidelines and preharvest intervals.

**Table 1. Labeled foliar insecticides for European corn borer.**

| *Product (active ingredient)* | *Application rate* | *Preharvest interval* |
|---|---|---|
| Ambush* (permethrin) | 6.4-12.8 oz/ac | 0 days |
| Asana XL* (esfenvalerate) | 7.8-9.6 oz/ac | 21 days |
| *Bacillus thuringiensis* (Bt) | See label for specific instructions | |
| Capture 1.15G* (befenthrin) | 0.04-0.10 lb A.I./ac† | 30 days |
| Furadan 4F* (carbofuran) | 1.5-2.0 pints/acΩ | 30 days |
| Lorsban 15G* (chlorpyrifos) | 3.8-8.0 oz/1000 row ft | 35 days |
| Lorsban 4E* (chlorpyrifos) | 1-2 pints/ac | 21 days |
| Penncap-M* (methyl parathion) | 2 pints/ac | 12 days |
| Pounce 1.5G* (permethrin) | 8-16 oz/1,000 row ft | 1 day |
| Warrior II* (lambda-cyhalothrin) | 1.28-1.93 oz/ac | 21 days |

** Restricted use pesticide.*

*† Active Ingredient.*

*Ω Please see ICM News article on Furadan and residues for 2010 and beyond.*

*Portions of this article were first published in ICM News in 2000.*

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