

Corn Rootworm & Volunteer Corn

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What Links these Two Yield Robbers?

PROBLEM 1: Corn Rootworm

Corn rootworm is considered the most destructive insect in corn. Corn rootworms feed on the roots of corn plants, impeding the plants' ability to absorb moisture and nutrients. If the root structure of a corn plant is weakened, this can lead to problems with growth, development and overall yield potential. Recently, corn hybrids containing the trait for controlling corn rootworm have been introduced to help growers control the pest.

Photo by Frank Peairs, Colorado State University, Bugwood.org

PROBLEM 2: Volunteer Corn

Volunteer corn is a problem weed in many soybean fields where both corn and soybean glyphosate-tolerant hybrids are being planted continuously. Volunteer corn, like other weeds, competes with the soybean plant for moisture and nutrients, interfering with optimum yields. According to university research, volunteer corn can be one of the most competitive, yield-robbing weeds in soybeans, and since it is a glyphosate-tolerant hybrid, it is not controlled by glyphosate.

PROBLEM 3: Volunteer Corn + Corn Rootworm = Potential Resistance

Many growers currently use corn hybrids stacked with the corn rootworm and glyphosate-tolerant traits. When volunteer corn emerges the following year in glyphosate-tolerant soybeans, it includes second generation glyphosate-tolerant and rootworm traits. The corn rootworm feeds on the roots of these corn plants just as it would in a corn field, but these volunteer corn plants contain a lower dosage of the rootworm trait – enough to stun, but not always eliminate the corn rootworm. Exposing the corn rootworm to less-than-toxic levels of the trait can decrease its susceptibility to the trait, potentially fostering the future development of more powerful and harder-to-control corn rootworm.

Corn rootworm feeding in volunteer glyphosate-tolerant corn can lead to resistance, and in turn, boost rootworm populations in both corn and soybeans.

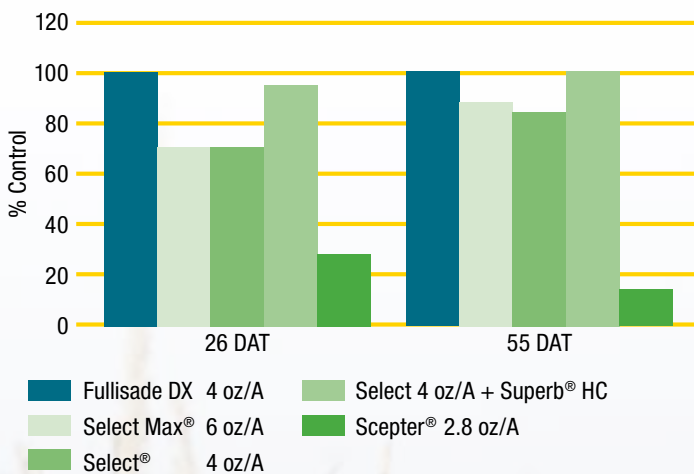
Photos show the effects of corn rootworm feeding in volunteer corn – Indiana, Michigan and Illinois



SOLUTION 1: Control Volunteer Corn Early with Fusilade DX

To control corn rootworm feeding in volunteer corn, and help prevent resistance, Syngenta recommends growers control volunteer corn early – preferably with their first glyphosate application. Because glyphosate will not control volunteer corn, utilizing a herbicide with a different mode of action is necessary. Applying Fusilade® DX herbicide provides superior control of volunteer corn and delivers weed-free, high-yielding soybeans. As results from university trials below demonstrate, Fusilade provides unmatched control of volunteer corn and eliminates weed competition so that soybeans can reach their full yield potential.

Control of Glyphosate Tolerant Volunteer Corn



Notes: Each post treatment listed was applied in a tank mix with glyphosate. Treatments applied included: Fusilade DX + Touchdown Total® herbicide 24 oz/A + AMS, Valor® SX herbicide 3 oz pre fb Select Max herbicide + Roundup PowerMax® herbicide 11 oz/A + AMS, Select herbicide + Roundup PowerMax 22 oz/A + Alliance®, Select + Roundup PowerMax 22 oz/A + Alliance + Superb HC, Scepter pre fb Roundup PowerMax 11 oz/A + AMS.

Source: The Ohio State University, South Charleston, OH



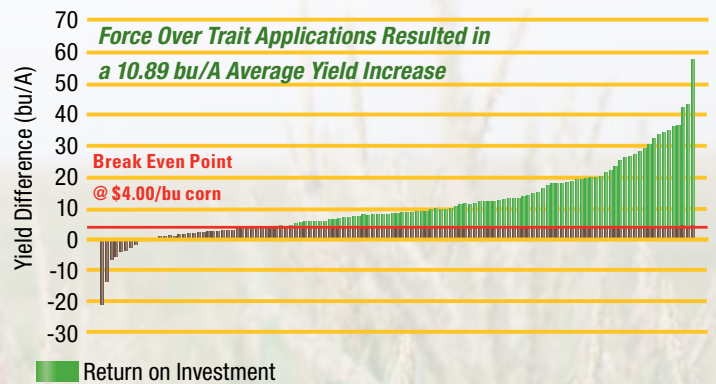
SOLUTION 2: Control Corn Rootworm with Multiple Modes of Action

Growers can take precautionary steps by using Force® CS or Force 3G insecticides in corn before rotating to soybeans. Many growers have used Force brands to combat corn rootworm, a control tactic that has demonstrated proven performance for more than 20 years. Force provides superior control of corn rootworm as well as other troublesome early-season pests such as wireworm, cutworm and white grub in both conventional, refuge and traited corn acres.

Force adds an additional mode of action for corn rootworm control on rootworm-traited corn to help manage resistance and the longevity of this beneficial trait technology. Recent studies have shown that in nearly 70 percent of cases when corn rootworm pressure was high, Force applied to traited corn increased yield and created a positive return on investment as shown below. On average, in these studies Force resulted in a 10.89 bu/A yield increase, well beyond the break even point.

Force insecticide on RW Trait Strip Trial Results
Syngenta Crop Protection, 2007-2009 (Various RW traits utilized)

2007-2009 Force on Trait Trials – NE, IL, MN, IA, OH, WI, IN (214 trials)



Average net profit calculated based on \$4.00 per bushel corn price minus the cost of a Force application.

For more information, visit www.force-insecticide.com, www.fusilade-herbicide.com or call the Syngenta Customer Center at 1-866-SYNGENTA (866-796-4368).

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