

Corn Earworm (*Helicoverpa zea*)

Management, Monitoring and Stewardship

As we head into the heat of the summer and the first fields of Performance Series™ sweet corn approach maturity, we would like to remind growers of the importance of corn earworm (CEW) management and monitoring and the stewardship requirements associated with this technology. Performance Series™ sweet corn, coupled with proper monitoring and management of CEW, will help growers maximize marketable yields.

LIFE CYCLE

There are multiple generations of CEW per year in the south and usually two generations in much of the midwestern U.S.A. CEW adults migrate on the winds and storms originating in southern regions. First generation moths lay eggs in, and feed on with minimal damage, the whorl of the corn plant. Second generation moths lay eggs on corn silks. Larvae can travel down the silks within one hour of hatching, feeding on kernels for most of the larval stage.

IDENTIFICATION

CEW larvae vary in color from light green to dark brown, usually having an orange head capsule and three to four stripes across their body length. Be careful to not confuse CEW larvae with fall armyworm (FAW) and western bean cutworm (WBC). WBC larvae are tan with a darker, faint diamond-shaped pattern on their back and dark stripes immediately behind their head. Larvae turn pinkish tan or pale brown as they mature. FAW have an inverted Y on their head capsule and vary from light tan to green to almost black.

MONITORING INSECT DAMAGE

Fields should be scouted regularly for target and non-target pests to determine if corrective actions are needed to reduce populations. Scouting techniques and supplemental treatment decisions should take into account that larvae must hatch and feed before they can be affected by the B.t. proteins. This is particularly important in sweet corn due to the low threshold for ear damage.

- Scouting for CEW should begin prior to first silk and continue through harvest.
- Use pheromone traps to monitor and count adult moths in the area to lay eggs. This will aid in scheduling insecticide applications.

MANAGEMENT

Performance Series™ sweet corn provides farmers with a dual mode of action for many above ground insects, including CEW. Under typical infestation levels, Performance Series sweet corn effectively controls CEW, but under extremely high infestation levels supplemental insecticide applications may be required to ensure high quality ears at harvest. Thus, protection from CEW must be coupled with thorough scouting and spray programs to maximize marketable yield. Supplemental Insecticide sprays to control extremely high CEW infestations will aid in situations where high CEW pressure has been determined.

If supplemental insecticide applications are necessary for control of high levels of CEW, rotating insecticide modes of action will reduce the risk of insect pests developing chemical resistance.

- For target pests, no spray prior to silking.
- After silking, schedule sprays based on insect flight activity and follow state recommendations under high infestation ratings.
- Under heavy insect pressure, spray intervals may have to be reduced.
- Monitor for secondary pests: Sap beetles, stink bugs, western bean cutworm, corn silk flies, etc.

STEWARDSHIP REQUIREMENTS

The EPA requires that Monsanto implement, and growers purchasing insect-protected products follow, an insect resistance management plan. This is critical in reducing the risk of developing insect resistance, preserving the benefits of this technology. Destruction of Performance Series™ sweet corn crop residue must occur no later than 30 days following harvest, but preferably within 14 days. The destruction of sweet corn crop residue destroys insect larvae before potentially resistant insects hatch. Approved methods of crop residue destruction are rotary mowing, discing or plowing-down.



IMPORTANT: Produce Marketing: Performance Series™ sweet corn has received the necessary biotech approvals in the United States and Canada; however, approval has not been received in all major sweet corn export markets with functioning regulatory systems. Direct all produce from this product for sale or use in the United States, Canada or Mexico. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. It is the grower's responsibility to talk to their produce handler or purchaser to confirm their buying position for this produce so that the marketing requirements can be met.

Herbicide Information for Performance Series™ sweet corn: Make sure the intended use is approved in your state. Do not use this information as the basis for any glyphosate product other than Roundup® branded agricultural herbicides. You must have the supplemental labeling for use on Performance Series™ Sweet Corn containing Roundup Ready® technology and the product label with you when making the application.

Performance Series™ sweet corn Insect Resistant Management - Post-Harvest Requirements: Crop destruction must occur no later than 30 days following harvest, but preferably within 14 days. The allowed crop destruction methods are: rotary mowing, discing, or plowing-down. Crop destruction methods should destroy any surviving resistant insects.

B.f. products may not yet be registered in all states. Check with your Seminis representative for the registration status in your state.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Monsanto and Vine Design®, Performance Series and Design™, Performance Series™, Roundup Ready®, and Roundup® are trademarks of Monsanto Technology LLC. Seminis® is a registered trademark of Seminis Vegetable Seeds, Inc. ©2012 Seminis Vegetable Seeds, Inc.