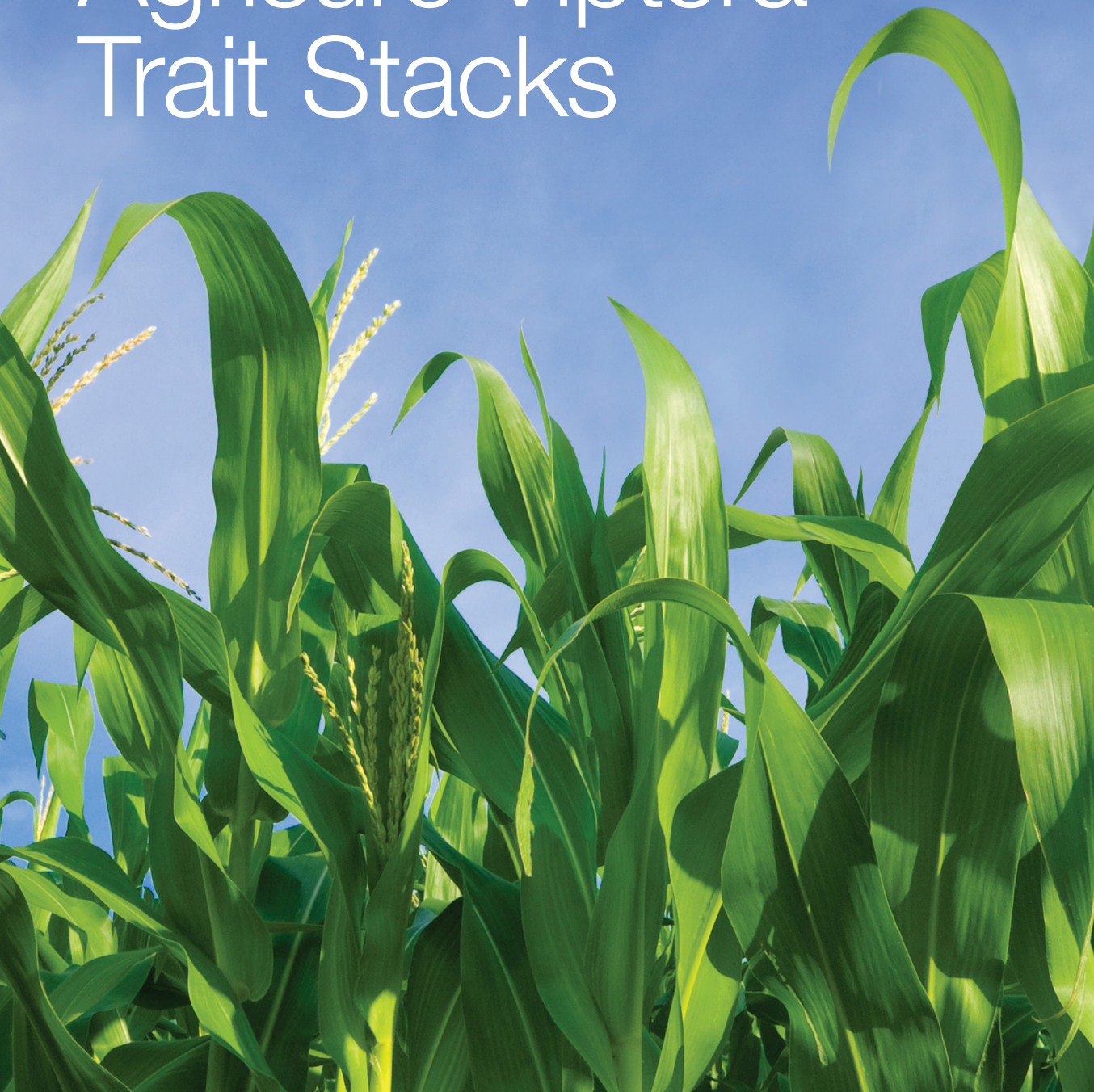




syngenta®

Grow More Corn with Agrisure Viptera Trait Stacks



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Agrisure Viptera: Proven Innovation in Insect Control

The Agrisure Viptera® trait delivers proven innovation in insect control to help farmers grow more corn. A critical part of today's top-performing trait stacks, Agrisure Viptera provides best-in-class above-ground insect control for maximum yield and productivity.

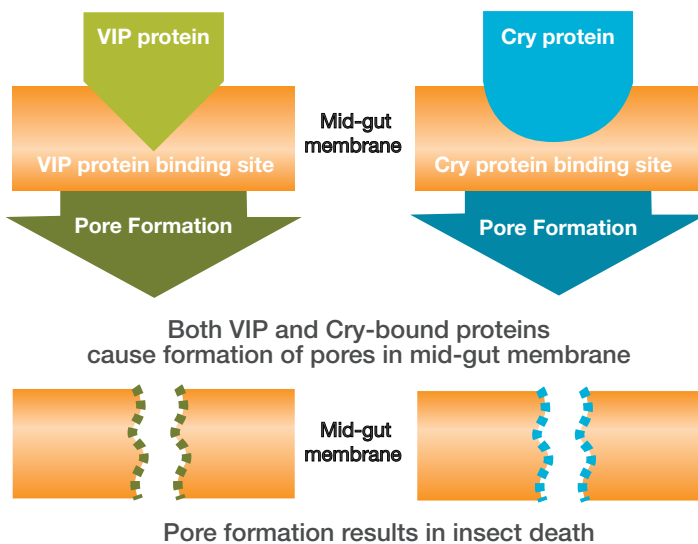
GROWmore
CORN

Agrisure Viptera features Vip3A, a robust mode of action that offers unsurpassed control of a broad spectrum of lepidopteran corn pests. Both vegetative insecticidal proteins (VIP) and crystalline proteins (Cry) are derived from *Bacillus thuringiensis* (Bt). However, VIPs differ from Cry proteins by binding to different receptors within an insect's mid-gut membrane. This VIP is a testament to the industry-leading agronomic expertise and commitment to cutting-edge research and development that helps Syngenta consistently deliver innovative solutions to the market.

More Control. More Insects. More Yield.

The Agrisure Viptera trait offers consistent, season-long control of lepidopteran pests that make up the multi-pest complex. These insects are widely distributed across the United States and appear in fields throughout the growing season. They are unpredictable, difficult to scout and challenging to treat effectively with conventional insecticides. Agrisure Viptera provides growers in-seed control of the broadest spectrum of lepidopteran corn pests, offering a convenient way to prevent and protect against damage due to the multi-pest complex throughout the growing season.

Pests Controlled



The Agrisure Viptera trait is the foundation of a number of trait stacks that provide control of yield and quality robbing corn insect pests. Trait stacks containing the Agrisure Viptera trait control up to 16 above- and below-ground pests.

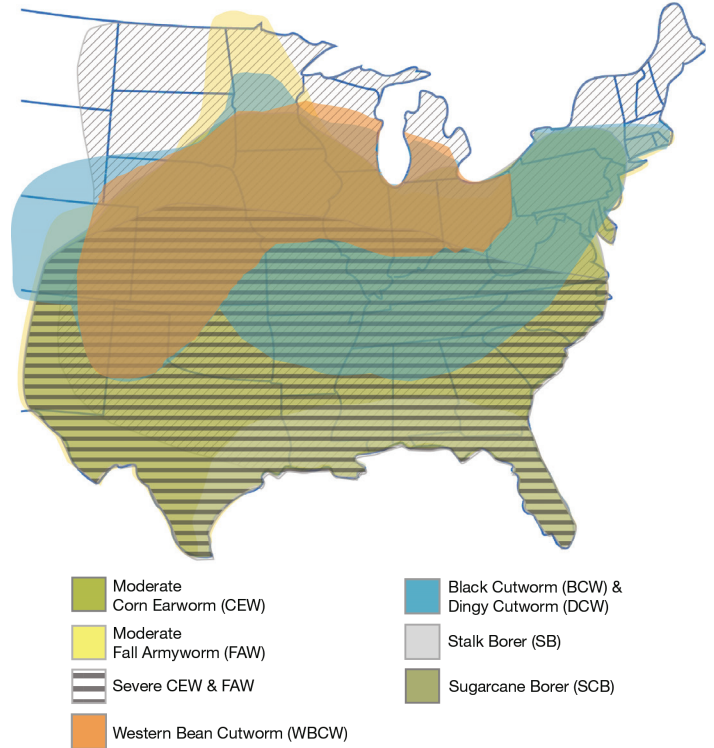
- Corn earworm
- Western bean cutworm
- Black cutworm
- Dingy cutworm
- Fall armyworm
- True armyworm
- Beet armyworm
- Sugarcane borer
- Southwestern corn borer
- Southern cornstalk borer
- Lesser cornstalk borer
- Western corn rootworm
- Northern corn rootworm
- Mexican corn rootworm
- European corn borer
- Common stalk borer



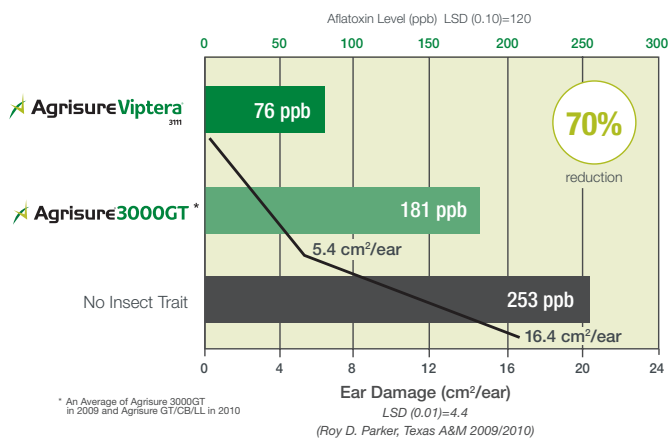
Improved Grain Quality

Damage caused by ear-feeding insects inflicts stress and injury on plant tissue, which can allow spores from fungi to gain access, proliferate and produce mycotoxins, including aflatoxin, causing reduced grain quality and profit potential¹. Aflatoxin can harm humans and animals when found in grain at concentrations above an acceptable threshold. The Agrisure Viptera trait has demonstrated the ability to significantly reduce development of molds and mycotoxins in research conducted by Texas A&M University and Syngenta². The breakthrough insect control provided by the Agrisure Viptera trait keeps damaging aflatoxins from robbing growers of revenue at the grain elevator.

Where is the Multi-Pest Complex?



Influence of the Agrisure Viptera® Trait on Corn Earworm Feeding Damage and Aflatoxin Concentration



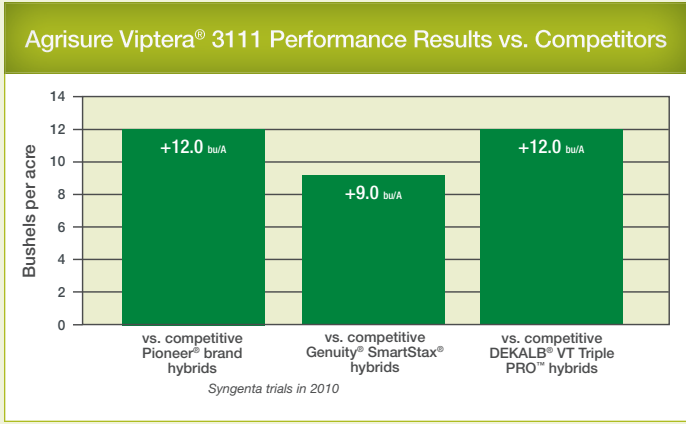
Field trials demonstrate the effectiveness of hybrids containing the Agrisure Viptera® trait (on right) compared to hybrids without the trait.



Trial observations taken from one trial in Crawford County, Kan. in August 2012.

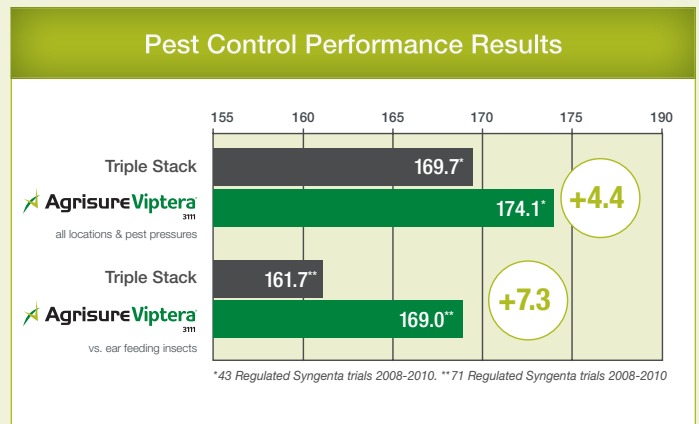
Agrisure Viptera[®] 3111

The Agrisure Viptera 3111 trait stack controls 16 above- and below-ground quality robbing insects including corn borer, corn rootworm, fall armyworm and the multi-pest complex. This demonstrated, market-leading control is a result of a combination of the Agrisure[®] 3000GT triple stack and the Agrisure Viptera trait and offers the freedom to choose either glyphosate or glufosinate herbicide technology.

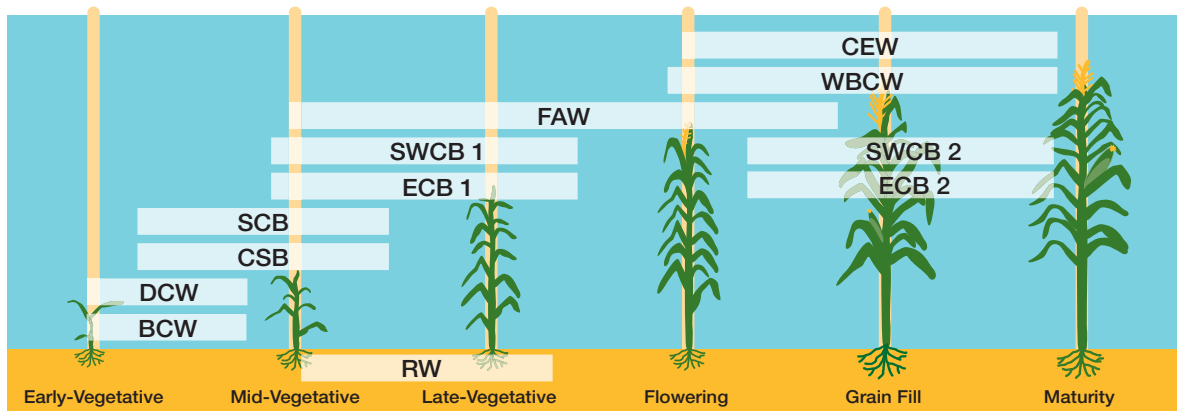


Agrisure Viptera[®] 3110

The Agrisure Viptera 3110 trait stack delivers unparalleled control of above-ground insects for growers who do not need to manage for corn rootworm. The Agrisure Viptera 3110 trait stack also offers the same herbicide flexibility as the Agrisure 3000GT triple stack, with both glyphosate and glufosinate tolerance.



Season-Long Insect Control with the Agrisure Viptera Trait Stacks

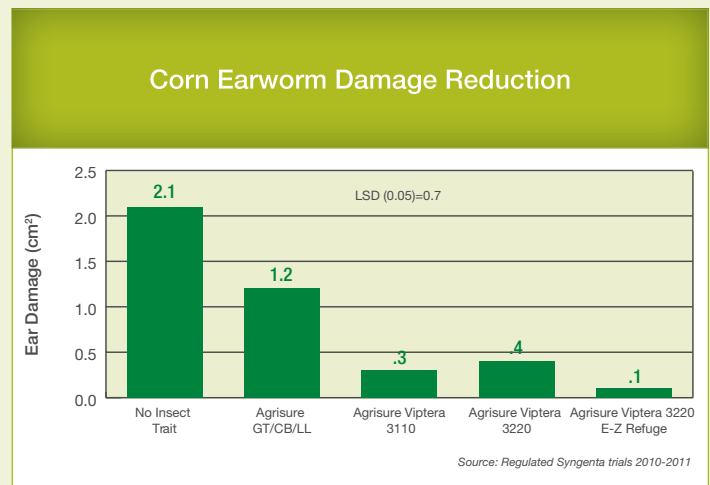


DCW: Diny cutworm SCB: Sugarcane borer SWCB: Southwestern corn borer FAW: Fall armyworm WBCW: Western bean cutworm
 BCW: Black cutworm CSB: Common stalk borer ECB: European corn borer CEW: Corn earworm RW: Rootworm

Agrisure Viptera[®] 3220 E-Z Refuge[®]

The Agrisure Viptera 3220 E-Z Refuge[®] trait stack offers corn growers multiple modes of action against a broad spectrum of lepidopteran pests and European corn borer with a 5 percent integrated, single-bag refuge. Hybrids with the Agrisure Viptera 3220 trait stack are intended for geographies where corn rootworm management is not a primary issue.

Growers planting Agrisure Viptera 3220 E-Z Refuge in cotton-growing regions will need to plant a supplemental 20 percent refuge.



Agrisure Duracade[™] 5222 E-Z Refuge[®]













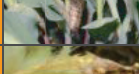


The Agrisure Viptera trait is featured in the Agrisure Duracade[™] 5222 E-Z Refuge trait stack, offered as a 5 percent integrated, single-bag refuge and controls 16 above- and below-ground pests. The trait stack combines the Agrisure Duracade trait with the trusted Agrisure RW trait for dual modes of action against corn rootworm; the Agrisure Viptera trait for control of the multi-pest complex; the Agrisure CB/LL trait for control of corn borer; the Herculex[®] 1 trait for an additional mode of action against corn borer and broad lepidopteran control; and the Agrisure GT trait for glyphosate tolerance.

Agrisure Artesian[®]

Proven Insect Control Meets Season-long Drought Protection

Agrisure Viptera 3110A, Agrisure Viptera 3111A, Agrisure Viptera 3220A E-Z Refuge and Agrisure Duracade 5222A E-Z Refuge trait stacks bring together top-performing Agrisure Artesian[®] corn hybrids with the Agrisure Viptera trait. The elite class of Artesian[™] corn hybrids contain scientifically selected genes with multiple modes of action for season-long drought protection. Widely adapted across yield environments, Artesian hybrids convert water to grain more effectively than other hybrids.

Broad-Spectrum Lepidopteran Insect Control with the Agrisure Viptera® Trait

Insect		 AgrisureViptera ^{3M}	 AgrisureViptera ^{3M0}	 AgrisureViptera ^{3220 E-Z Refuge}	 AgrisureDuracade ^{3222 E-Z Refuge}	 HERCULEX ¹	 YieldGard [®] VT Triple [®]	 Genuity [®] VT Triple PRO [™]	 Genuity [®] SmartStax [®]
European Corn Borer		++++	++++	++++	++++	++++	++++	++++	++++
Southwestern Corn Borer		++++	++++	++++	++++	++++	++++	++++	++++
Western Bean Cutworm		++++	++++	++++	++++	+++	-	+	+++
Black Cutworm		++++	++++	++++	++++	+++	-	+	+++
Fall Armyworm		++++	++++	++++	++++	+++	++	++++	++++
Corn Earworm		++++	++++	++++	++++	+	++	+++	+++
Sugarcane Borer		+++	+++	+++	+++	+++	+++	+++	+++

Insect Control Scale: - = no effect; + = some; ++ = good; +++ = very good; ++++ = excellent

**All competitor information based solely upon interpretation of publicly available information, including public presentations, regulatory submissions and/or field observations.*

What are growers saying about Agrisure Viptera?

"The Agrisure Viptera trait has been excellent. Every year we increase the number of hybrids containing the Agrisure Viptera trait on our farm. It pays for itself. You get back five times what you pay for the trait. It is definitely well worth the money spent."

Nick Schmit, Coleridge, Neb.

"We have used Agrisure Viptera since its inception and have been really impressed. There is no corn earworm or cutworm trouble at all. With Agrisure Viptera, the yield advantage has been five to 10 bushels in a normal year and much more if you have an earworm or cutworm event. The biggest benefit of Agrisure Viptera is the peace of mind. After you plant, you do not have to worry."

Stuart Beckman, Menlo, Kan.

¹ Council for Agriculture Science and Technology. "Mycotoxins: Risks in Plant, Animal, and Human Systems." Task Force Report 139. Ames, IA. 2003.

² Dr. Roy Parker, Texas A&M University, 2009-2010. Influence of insect trait on grain aflatoxin levels.



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