

# Characterizing corn insect protection technology



## ABOVE-GROUND INSECT PROTECTION

		European corn borer <sup>#</sup>	Southwestern corn borer <sup>#</sup>	Black cutworm	Corn earworm <sup>#</sup>	Western bean cutworm <sup>*</sup>	Fall armyworm <sup>#</sup>	Herbicide tolerance
Options in the Pioneer® brand portfolio	Optimum® AcreMax® PRODUCTS	+++ <sup>▼</sup>	+++ <sup>▼</sup>	++	+	-	++	glyphosate, glufosinate
	Optimum® AcreMax® Leptra® & Optimum® Leptra® PRODUCTS	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++	+++	+++ <sup>▼</sup>	glyphosate, glufosinate
	Optimum® Intrasect® PRODUCTS	+++ <sup>▼</sup>	+++ <sup>▼</sup>	++	+	-	++	glyphosate, glufosinate
	PowerCore® Enlist® corn PRODUCTS <small>COMING SOON</small>	+++ <sup>▼</sup>	+++ <sup>▼</sup>	++	+	-	++ <sup>▼</sup>	2,4-D choline, glyphosate, glufosinate, FOP
	PowerCore® Ultra Enlist® corn <sup>†</sup> PRODUCTS <small>COMING SOON</small>	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++	+++	+++ <sup>▼</sup>	2,4-D choline, glyphosate, glufosinate, FOP
Competitive products	VT Double PRO® RIB Complete® corn	+++ <sup>▼</sup>	+++ <sup>▼</sup>	-	+	-	++ <sup>▼</sup>	glyphosate
	Trecepta® corn	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++	+++	+++	+++ <sup>▼</sup>	glyphosate
	Agrisure® 3120 E-Z Refuge® corn	+++ <sup>▼</sup>	+++ <sup>▼</sup>	++	+	-	++	glyphosate, glufosinate
	Agrisure® 3330 E-Z Refuge® corn	+++ <sup>▼</sup>	+++ <sup>▼</sup>	+++	+++	+++	+++ <sup>▼</sup>	glyphosate, glufosinate

+++ Excellent protection    ++ Good protection    + Some protection    - No activity/not labelled    ▼ 2 or more working modes of action

<sup>†</sup>The Vorceed™ Enlist® trait and PowerCore® Ultra Enlist® trait will not be offered for sale or distribution until completion of field testing and applicable regulatory reviews.

# ABOVE- AND BELOW-GROUND INSECT PROTECTION

	Corn rootworm (western <sup>#</sup> , northern, Mexican)	European corn borer	Southwestern corn borer <sup>#</sup>	Black cutworm	Corn earworm <sup>#</sup>	Western bean cutworm <sup>#</sup>	Fall armyworm <sup>#</sup>	Herbicide tolerance	
Options in the Pioneer <sup>®</sup> brand portfolio	<b>Qrome<sup>®</sup></b> PRODUCTS	++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++	glyphosate, glufosinate
	<b>Optimum<sup>®</sup></b> <b>AcreMax<sup>®</sup> XTreme</b> PRODUCTS	++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++	glyphosate, glufosinate
	<b>Vorceed<sup>™</sup></b> <b>Enlist<sup>®</sup> corn<sup>†</sup></b> PRODUCTS	+++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++ <sup>∇</sup>	2,4-D choline, glyphosate, glufosinate, FOP
Competitive products	<b>SmartStax<sup>®</sup></b> Technology	++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++ <sup>∇</sup>	glyphosate, glufosinate
	<b>SmartStax<sup>®</sup> PRO</b> Technology	+++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++ <sup>∇</sup>	glyphosate, glufosinate
	<b>Agrisure<sup>®</sup> Duracade<sup>®</sup></b> <b>5122 E-Z Refuge<sup>®</sup> corn</b>	++ <sup>∇</sup>	+++ <sup>∇</sup>	+++ <sup>∇</sup>	++	+	-	++	glyphosate, glufosinate

+++ Excellent protection    ++ Good protection    + Some protection    - No activity/not labelled    ∇ 2 or more working modes of action



Characterization from Internal Corteva Agriscience Attributes database.

Efficacy levels based on Corteva Agriscience and/or independent university entomologist results against susceptible insect populations. Product responses can vary by location, pest population, environmental conditions, and agricultural practices.

Please contact your Pioneer sales professional for information and suggestions specific to your operation. Individual results may vary.

# Various factors, including pest pressure, reduced susceptibility, and insect resistance in some pest populations may affect efficacy of certain corn technology products in some regions. To help extend durability of these technologies, Corteva Agriscience recommends you implement Integrated Pest Management (IPM) practices such as crop rotation, cultural and biological control tactics (including rotating sources of Bt-protected corn traits), pest scouting, and appropriate use of pest thresholds when employing management practices such as insecticide application. You must also plant the required refuge when using these technologies. Please contact your sales professional or consult with your local university extension for more information regarding insect resistance management guidelines, best management practices and to understand whether there has been a shift in susceptibility or insect resistance with certain pests documented in your area. \* Western bean cutworm has been removed from the Corteva Agriscience product use statement for several corn products that contain Herculex<sup>®</sup> I (Cry1F) but lack another mode of action for western bean cutworm due to a wide-spread decrease in susceptibility indicating the possibility of field-evolved resistance to Cry1F in most geographies.

<sup>†</sup> The Vorceed<sup>™</sup> Enlist<sup>®</sup> trait and PowerCore<sup>®</sup> Ultra Enlist<sup>®</sup> trait will not be offered for sale or distribution until completion of field testing and applicable regulatory reviews.

PowerCore<sup>®</sup> multi-event technology developed by Corteva Agriscience and Monsanto. PowerCore<sup>®</sup> is a registered trademark of Monsanto Technology LLC. Always follow IRM, grain marketing and all other stewardship practices and pesticide label directions. B.t. products may not yet be registered in all states. Check with your seed representative for the registration status in your state. Roundup Ready<sup>®</sup> is a registered trademark used under license from Monsanto Company.

Liberty<sup>®</sup>, LibertyLink<sup>®</sup> and the Water Droplet Design are trademarks of BASF.

Agrisure<sup>®</sup> and Agrisure Viptera<sup>®</sup> are trademarks of, and used under license from, a Syngenta Group Company. Agrisure<sup>®</sup> technology incorporated into these seeds is commercialized under a license from Syngenta Crop Protection AG.

Corteva Agriscience is a member of Excellence Through Stewardship<sup>®</sup> (ETS). Corteva Agriscience products are commercialized in accordance with ETS Product Launch Stewardship Guidance and in compliance with the Corteva Agriscience policies regarding stewardship of those products. In line with these guidelines, our product launch process for responsible launches of new products includes a longstanding process to evaluate export market information, value chain consultations, and regulatory functionality. Growers and end-users must take all steps within their control to follow appropriate stewardship requirements and confirm their buyer's acceptance of the grain or other material being purchased. For more detailed information on the status of a trait or stack, please visit [www.biotradestatus.com](http://www.biotradestatus.com).

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