

Trait Purity

CORN-Hybrids

Tradename	Trait(s) to Test	Number to Test- Preliminary	Purity Requirement	Number to Test- Finished if Preliminary Passed	Purity Requirement	Number to Test- Finished if Preliminary Failed or Not Conducted	Purity Requirement
Agrisure GT	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
Agrisure® CBLL, Bt11	Cry1Ab ^{1,3}	90	87/90	30	28/30	90	87/90
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® GTCBLL	Cry1Ab ^{1,3}	90	87/90	30	28/30	90	96%
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® RW	Cry3A ^{1,4}	90	87/90	30	28/30	90	87/90
Agrisure® CBLRW	Cry1Ab ^{1,3} /Cry3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glufosinate ^{1,4}	400	96%	100	96%	400	96%
Agrisure® 3000GT	Cry1Ab ^{1,3} /Cry3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	98%	100	96%	400	96%
Agrisure® Artesian® 3011 (a.k.a Agrisure® 3011A)	Cry1Ab ^{1,3} /Cry3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	98%	100	96%	400	96%
Agrisure® Viptera™ 3110	Cry1Ab ^{1,3} /Vip3A ^{1,4}	90	87/90	30	28/30,28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® Viptera™ 3111	Cry1Ab ^{1,3} /Cry3A ^{1,4} /Vip3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® 3120	Cry1Ab ^{1,3} /Cry1F ²	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® 3122	Cry1Ab ^{1,3} /Cry3A ^{1,4} /Cry1F ² /Cry34 ²	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® Viptera™ 3220	Cry1Ab ^{1,3} /Vip3A ^{1,4} /Cry1F ²	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® Duracade™ 5122	Cry1Ab ^{1,3} /Cry1F ² /eCry3.1Ab ^{1,4} /Cry3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Agrisure® Duracade™ 5222	Cry1Ab ^{1,3} /Cry1F ² /eCry3.1Ab ^{1,4} /Cry3A ^{1,4} /Vip3A ^{1,4}	90	87/90	30	28/30	90	87/90
	Glyphosate ¹	400	98%,96%*	100	98%,96%*	400	98%,96%*
	Glufosinate ¹	400	96%	100	96%	400	96%
Clearfield®	IMI	400	96%			400	96%
Genuity™ DroughtGard® VT Double Pro	Cry2Ab ² /CspB ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
Genuity™ DroughtGard® VT Triple Pro	Cry2Ab ² /Cry3Bb ² /CspB ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
Genuity™ VT Double Pro	Cry2Ab ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
Genuity™ VT Triple Pro	Cry2Ab ² /Cry3Bb ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
Genuity™ Smartstax™	Cry1F ² /Cry2Ab ² /Cry34 ² /Cry3Bb ²	90	87/90	30	27/30	90	87/90
Genuity™ Smartstax Pro™	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate ²	400	96%	200	96%	400	96%
Herculex® I	Cry1F ²	90	87/90	30	27/30	90	87/90
	Glufosinate					400	96%
Herculex® RW	Cry34 ²	90	87/90	30	27/30	90	87/90
	Glufosinate					400	96%
Herculex® Xtra	Cry1F ² /Cry34 ²	90	87/90	30	27/30	90	87/90
	Glufosinate					400	96%
Herculex® I & Roundup Ready	Cry1F ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Herculex® Xtra & Roundup Ready	Cry1F ² /Cry34 ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Liberty Link™	Glufosinate					400	96%
Optimum® Intrasect™	Cry1Ab ² /Cry1F ²						
	Glufosinate					400	96%
Optimum® TRisect™	Cry1F ² /Cry3A ^{1,4}	90	87/90	30	27/30,28/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
PowerCore	Cry1F ² /Cry2Ab ²	90	87/90	30	27/30, 28/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
RoundUp Ready®	Glyphosate ²	400	98%	200	98%	400	98%

Trait Purity

Trecepta	Cry2Ab ² /Vip3A ^{1,4}	90	87/90	30	27/30, 28/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
YieldGard VT™ Rootworm RR2®	Cry3Bb ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
YieldGard VT™ Triple	Cry1Ab ² /Cry3Bb ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
YieldGard® CB	Cry1Ab ²	90	87/90	30	27/30	90	87/90
YieldGard® CB RoundUp Ready®	Cry1Ab ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%

Trait Purity (continued)

CORN-Refuge Combos

Tradename	Trait(s) to Test	Number to Test- Preliminary	Purity Requirement	Number to Test- Finished if Preliminary Passed	Purity Requirement	Number to Test- Finished if Preliminary Failed or Not Conducted	Purity Requirement
Agrisure® 3120 E-Z Refuge	Cry1Ab ² /Cry1F ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Agrisure® E-Z Refuge (Refuge Component)	Cry1Ab ^{1,3} /Cry1F ² /eCry3.1Ab ^{1,4} /Cry34 ² /Cry3A ^{1,4} /Vip3A ^{1,4} **	90	≤ 4/90 (≤ 5%)			90	≤ 4/90 (≤ 5%)
	Glyphosate ²	400	98%,96%*	100	98%,96%*	400	98%,96%*
Herculex® RW and YieldGard® CB	Cry1Ab ² /Cry34 ²	90	87/90	30	27/30	90	87/90
	Glufosinate					400	96%
Optimum® AcreMax™	Cry1Ab ² /Cry1F ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Optimum® AcreMax™ 1	Cry1F ² /Cry34 ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Optimum® AcreMax™ RW	Cry34 ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Optimum® AcreMax™ Xtra	Cry1Ab ² /Cry1F ² /Cry34 ²	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
Optimum® AcreMax™ Xtreme	Cry1Ab ² /Cry1F ² /Cry34 ² /Cry3A ^{1,4}	90	87/90	30	27/30	90	87/90
	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	96%
RoundUp Ready 2® and LibertyLink®	Glyphosate ²	400	98%	200	98%	400	98%
	Glufosinate					400	98%

¹ For preliminary testing, test four predominant seed sizes for female and male donated traits

² For preliminary testing, test bulk sample for female donated traits, test each seed size for male donated traits

³ Cry1Ab testing recommended by BDI, but not required by Syngenta

⁴ Testing cannot be conducted on seeds or portions of seeds.

*98% if female donated, 96% if male donated

**Refuge hybrid must be tested for the unintended presence of all the insecticidal traits present in the primary hybrid

Trait Purity Protein Expression

CORN		Breeders (Recommended)		Quantitative Protein Expression-Inbred		Quantitative Protein Expression-Hybrid	
Tradename	Trait(s) to Test	Number to Test	Requirement (ng/cm ²)	Number to Test	Requirement (pg/μg total protein)	Number to Test	Requirement (pg/μg total protein)
Herculex® I	Cry1F	Reference DAS Nursery Manual	90 (40 if BC1)	9	140	9	70
Herculex® RW	Cry34	Reference DAS Nursery Manual	500	9	500	9	250
	Cry35	Reference DAS Nursery Manual	250	9	200	9	100

Protein Equivalency for Commercial Efficacy

CORN-Hybrids

Tradename	Trait(s) to Test	Number to Test	Purity Requirement
Genuity™ VT Double Pro	Cry1A.105/Cry2Ab	20	0 of 20 out of tolerance
Genuity™ VT Triple Pro	Cry1A.105/Cry2Ab/Cry3Bb	20	0 of 20 out of tolerance
Genuity™ Smartstax™	Cry1A.105/Cry1F/Cry2Ab/Cry34/Cry35/Cry3Bb	20	0 of 20 out of tolerance
YieldGard VT™ Triple	Cry1Ab/Cry3Bb	20	0 of 20 out of tolerance

Liberty Link™ is a registered trademark of Bayer Crop Science.

Clearfield® is a registered trademark of BASF.

Herculex® I, Herculex® RW, and Herculex® Xtra are registered trademarks of Dow AgroSciences.

RoundUp Ready®, YieldGard® CB, YieldGard® RW, YieldGard® Plus, YieldGard® VT™ Triple, Genuity™ VT Double Pro, Genuity™ VT Triple Pro™, DroughtGard™, and Genuity™ Smartstax™ are registered trademarks of Monsanto.

Optimum® AcreMax™, Optimum® AcreMax™ 1, Optimum® AcreMax™ RW, Optimum® AcreMax™ Xtra, Optimum® Intrasect™, Optimum® TRisect™, Optimum® AcreMax™ Xtreme are registered trademarks of Pioneer/DuPont.

Agrisure® CBLL, Bt11, Agrisure® RW, Agrisure® CBLLRW, Agrisure® 3000 GT, Agrisure® Artesian® 3011, Agrisure® Vipitera™ 3110, Agrisure Vipitera™ 3111, Agrisure® 3122, Agrisure Vipitera™ 3220, Agrisure® Duracade™ 5122, and Agrisure® Duracade™ 5222 are registered trademarks of Syngenta.