



Handy Bt Trait Table **VOID**

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Pictures: Iowa State Image Gallery
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More corn hybrids contain multiple transgenic traits, and cost of this seed is steadily rising - \$300 or more per bag is not uncommon. Meanwhile, refuge requirements are changing for multi-trait corn. Some refuges remain 20% and 'structured', planted in a block or series of rows. Others are reduced to 5% or 10%, in a block or 'in the bag' mixed with the Bt seed itself.

Different products from different seed companies now have different refuges

Purchasing the right transgenic hybrid for the right pest, and planting it with the correct refuge in the proper location, is critical to maximizing income. But this process is increasingly confusing. The table on the second page of this handout summarizes, to the best of our ability, the currently available traits and their spectrum of control. The table also lists refuge amounts and location.



Insect targets

- BCW black cutworm
- CEW corn earworm
- CRW corn rootworm
- ECB European corn borer
- FAW fall armyworm
- SB stalk borer
- WBC western bean cutworm



Herbicide traits

- GT glyphosate tolerant
- LL Liberty Link or glufosinate tolerant
- RR2 Roundup Ready 2 (glyphosate tolerant)

VOID

**Current ** 20 October, 2011	Bt protein (s)	Insects controlled (bold) or suppressed (<i>italics</i>) <i>Above-ground----- In soil</i>	Herbicide tolerant?	Refuge % & location in the MIDWEST	
Agrisure products					
Agrisure CB/LL	Cry1Ab	ECB <i>CEW FAW SB</i>	---	LL	20% - ½ mile
Agrisure GT/CB/LL	Cry1Ab	ECB <i>CEW FAW SB</i>	---	GT LL	20% - ½ mile
Agrisure RW	mCry3A	---	CRW	---	20% - adjacent
Agrisure GT/RW	mCry3A	---	CRW	GT	20% - adjacent
Agrisure CB/LL/RW	Cry1Ab mCry3A	ECB <i>CEW FAW SB</i>	CRW	LL	20% - adjacent
Agrisure 3000GT	Cry1Ab mCry3A	ECB <i>CEW FAW SB</i>	CRW	GT LL	20% - adjacent
Agrisure Viptera 3110	Cry1Ab Vip3A	BCW CEW ECB FAW WBC SB	---	GT LL	20% - ½ mile
Agrisure Viptera 3111	Cry1Ab mCry3A Vip3A	BCW CEW ECB FAW WBC SB	CRW	GT LL	20% - adjacent
Agrisure 3122 Refuge Renew	Cry1Ab Cry1F mCry3A Cry34/35Ab1	BCW CEW ECB FAW WBC SB	CRW	GT LL	5% adjacent
Agrisure Viptera 3220	Cry1Ab Cry1F Vip3A	BCW CEW ECB FAW WBC SB	---	GT LL	5% - ½ mile
Herculex products					
Herculex 1 (HX1)	Cry1F	BCW ECB FAW WBC <i>CEW</i>	---	LL RR2 (some)	20% - ½ mile
Herculex RW (HXRW)	Cry34/35Ab1	---	CRW	---	20% - adjacent
Herculex XTRA (HXX)	Cry1F Cry34/35Ab1	BCW ECB FAW WBC <i>CEW</i>	CRW	LL RR2 (some)	20% - adjacent
Optimum products					
Optimum Intrasect	Cry1F Cry1Ab	BCW ECB FAW WBC <i>CEW SB</i>	---	LL RR2	5% - ½ mile
Optimum AcreMax (OAM)	Cry1F Cry1Ab	BCW ECB FAW WBC <i>CEW SB</i>	---	RR2	5% <i>in the bag</i>
Optimum AcreMaxRW	Cry34/35Ab1	---	CRW	RR2	10% <i>in the bag</i>
Optimum AcreMax1	Cry1F Cry34/35Ab1	BCW ECB FAW WBC <i>CEW</i>	CRW	LL RR2	10% <i>in the bag</i> (CRW) & 20% - ½ mile (ECB)
Optimum AcreMax Xtra	Cry1F Cry1Ab Cry34/35Ab1	BCW ECB FAW WBC <i>CEW SB</i>	CRW	RR2	10% <i>in the bag</i>
YieldGard products					
YGCB	Cry1Ab	ECB <i>CEW FAW SB</i>	---	RR2 (some)	20% - ½ mile
YGRW	Cry3Bb1	---	CRW	RR2 (some)	20% - adjacent
YieldGard Plus	Cry1Ab Cry3Bb1	ECB <i>CEW FAW SB</i>	CRW	RR2 (some)	20% - adjacent
YieldGard VTRW	Cry3Bb1	---	CRW	RR2	20% - adjacent
YieldGard VT Triple	Cry1Ab Cry3Bb1	ECB <i>CEW FAW SB</i>	CRW	RR2	20% - adjacent
Genuity / SmartStax products					
Genuity VT Double Pro (VT2P)	Cry1A.105 Cry2Ab2	CEW ECB FAW	---	RR2	5% - ½ mile
Genuity VT Triple Pro (VT3P)	Cry1A.105 Cry2Ab2 Cry3Bb1	CEW ECB FAW	CRW	RR2	20% - adjacent
SmartStax (Dow) or Genuity SmartStax (Monsanto) (GENSS)	Cry1A.105 Cry2Ab2 Cry1F Cry3Bb1 Cry34/35Ab1	BCW CEW ECB FAW WBC	CRW	LL RR2	5% - adjacent
Genuity SmartStax RIB Complete (Mon)	Same as GENSS	BCW CEW ECB FAW WBC	CRW	LL RR2	5% <i>in the bag</i>
REFUGE ADVANCED Powered by SmartStax (Dow)	Same as GENSS	BCW CEW ECB FAW WBC	CRW	LL RR2	5% <i>in the bag</i> <i>A structured 5% refuge option may be available</i>