

NEW TRAIT TECHNOLOGIES FOR COTTON FROM BAYER CROPSCIENCE

J. Holloway, L. Trolinder, R. Humphries, G. Henniger, S. Baker, and M. Rinehardt
Bayer CropScience
Lubbock Texas

Abstract

Bayer CropScience has developed in-house GlyTol™ glyphosate tolerant technology for cotton, expressing the *2mepsps* gene and stacks of GlyTol™ with LibertyLink® cotton. Contingent upon regulatory approvals, cotton with the GlyTol trait is planned for commercial release in the US 2009 and GlyTol + LibertyLink cotton is planned for commercial release in the US in 2010.

Bayer CropScience is developing the in-house stacked *Bt* product TwinLink™, expressing both *cry1* and *cry2* genes, conferring protection from damage of a wide range of Lepidopteran pests, as well as tolerance to glufosinate ammonium (Ignite®) herbicide. Contingent upon regulatory approvals, TwinLink cotton stacked with GlyTol technology is planned for commercial release in the US in 2012.

Extensive field testing of GlyTol, GlyTol + LibertyLink and TwinLink cotton has been undertaken internally and with third parties in the US between 2006 and 2008. Trials with GlyTol and GlyTol + LibertyLink have recorded no adverse effects on cotton plant establishment, plant height, maturity, vigor, yield or quality following multiple applications at full rates of a number of commercial formulations of glyphosate. US trials with TwinLink cotton have recorded solid efficacy against a number of key Lepidopteran pests of cotton, including *H. zea*, *H. virescens*, *S. frugiperda*, *S. exigua* and *P. gossypiella*.

Once approved and available in elite Bayer CropScience germplasm, these technologies will provide US cotton growers with greater choice and flexibility for weed and insect management. GlyTol cotton will provide US cotton growers with the flexibility of over the top applications of more than one glyphosate herbicide formulation and GlyTol + LibertyLink technology will provide US cotton growers with the flexibility of over the top applications of more than one herbicide mode of action. TwinLink + GlyTol cotton will provide US cotton growers with stacked insect protection as well as stacked herbicide tolerance.