

**Tolerance of GlyTol[®] + TwinLink[™] Cotton Technology from Bayer CropScience to Glyphosate and Ignite[®]
280 Herbicides**

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Abstract

Bayer CropScience has developed the stacked *Bt* product TwinLink[™], expressing both *cry1Ab* (event T304-40) and *cry2Ae* (event GHB119) genes, with each event containing the *bar* gene which confers tolerance to glufosinate ammonium (Ignite[®]) herbicide. TwinLink cotton, stacked with GlyTol[®] technology which expresses the *2mepsps* gene, provides tolerance to both Ignite and glyphosate herbicides. Contingent upon regulatory approvals, GlyTol + TwinLink cotton is planned for commercial release in 2013 and will provide US cotton growers new cotton varieties with season-long tolerance to commercial formulations of glyphosate herbicide as well as tolerance to glufosinate ammonium (Ignite) herbicide. Since the glufosinate tolerant genes were part of the T304-40 and GHB119 events that make up the TwinLink product (and not the same LL25 event used in LibertyLink[®] and GlyTol + LibertyLink cotton varieties) the tolerance to glufosinate had to be confirmed for the TwinLink product through field testing.

Extensive field testing of GlyTol + TwinLink cotton was conducted by Bayer CropScience during the 2009 and 2010 growing seasons. Since TwinLink will be sold in the US only in combination with the GlyTol trait, both glyphosate and glufosinate herbicides were tested singly, alternatively and in combination as tank mixes for a total of four applications (2-4 leaf, 6-8 leaf, layby and preharvest). These trials have recorded no significant effects on GlyTol + TwinLink cotton plant establishment, vigor, plant height, maturity, yield or fiber quality following multiple applications at full commercial rates (with significant margins of safety) of a broad range of commercial formulations of glyphosate and Ignite 280 herbicide. Testing also revealed that GlyTol + TwinLink exhibited the same level of tolerance to glyphosate and glufosinate (sequences, rotations and mixtures) as did GlyTol + LibertyLink.