

**VOLATILITY OF GF-2726 AS COMPARED WITH OTHER AUXIN HERBICIDES****A.N. Eytcheson****D.B. Reynolds****J.T. Irby****Mississippi State University****Mississippi State, MS****L.E. Steckel****University of Tennessee****Jackson, TN****L.C. Walton****R. A. Haygood****D. T. Ellis****J. S. Richburg****Dow AgroSciences****Indianapolis, IN****Abstract**

Auxin mimicking herbicides have been used for over 40 years to control broadleaf weeds in monocotyledonous crops. Volatilization and vapor drift to sensitive crops has been an issue with auxin herbicides. Salt formulations of 2,4-D are considered to be relatively nonvolatile compared to the ester formulations. The volatility of a herbicide is important when herbicide vapor causes economic losses to sensitive crops. Soybeans and cotton are two of the most sensitive row crops to auxin herbicides. With the development of auxin herbicide tolerant crops, minimal volatility of auxin herbicides is vital to prevent injury to non-tolerant auxin sensitive crops. In 2011, Dow AgroSciences developed a new quaternary ammonium salt formulation of 2,4-D. GF-2726 is a combination of this new salt with glyphosate and it may provide researchers and producers with a new lower volatile formulation of 2,4-D. An experiment was conducted in 2011 at the Black Belt Research Station in Brooksville, MS. A 15 by 5 ft dome was placed in the middle 55 ft of a plot containing a row each of cotton and soybeans. Herbicide treatments included 2,4-D ester + glyphosate DMA (1.9 lb ae/a + 2 lb ae/a), 2,4-D amine + glyphosate DMA (2.0 lb ae/a + 2 lb ae/a), GF-2726 (3.9 lb ae/a), dicamba DGA + glyphosate DMA (1 lb ae/a + 2 lb ae/a), and an untreated. Each treatment was applied to 4 flats filled with soil, wet to field capacity, placed between a row of cotton and soybeans in the center of the dome and the plastic sheeting was placed over the dome frame. The treated flats of soil and the plastic sheeting were removed 24 hours after application. Visual injury was recorded for cotton and soybeans on a per foot basis in both directions from the treated area. All treatments had injury in the treated soil area and vapor drift injury outside the dome treated area; however, GF-2726 had less injury than all other treatments. When comparing the formulations of 2,4-D, GF-2726 had less injury on soybeans and cotton than the amine salt and the ester formulations. Within the dome area, GF-2726 had less injury than all other treatments, with respect to cotton and soybean. GF-2726 exhibited less volatility when compared to the other auxin herbicides 2,4-D ester, 2,4-D amine salt, and dicamba DGA.