

BLIZZARD HARVEST AID AS A DESICCANT FOR COTTON IN PROXIMITY TO SMALL GRAINS IN THE TEXAS HIGH PLAINS

**Mark Kelley
Randy Boman
Texas AgriLife Extension Service
Lubbock, TX
Alan Dalrymple
Chemtura Corporation
Brenham, TX**

Abstract

Cotton (*Gossypium hirsutum* L.) harvest aid programs in the Texas High Plains generally consist of an initial application of a boll opener/defoliant tank mix followed by a sequential application of a desiccant to terminate the crop for stripper harvesting. In most instances, paraquat based chemicals are utilized as the sequential application. However, many producers desire other desiccants when terminating cotton in close proximity to winter wheat (*Triticum aestivum* L.) because of possible paraquat drift injury. Previous research has indicated that Blizzard (fluthiacet-methyl) can be utilized as an effective defoliant in the Texas High Plains. Because of minimal or no phytotoxicity to small grains, Blizzard could be used at higher rates as a sequential desiccant for stripper harvested cotton. The objectives of these studies were to determine 1) the efficacy of higher rates of Blizzard as a desiccant for terminating cotton in preparation of stripper harvesting and 2) the phytotoxicity, if any, of Blizzard when applied to winter wheat.

In 2008, research was continued to determine the efficacy of Blizzard as a desiccant applied at various rates to dryland cotton. In addition to the research conducted on stripper harvested cotton, a trial was initiated to determine potential phytotoxicity of Blizzard when applied to early planted winter wheat. Varying rates (untreated control, 0.6, 1.0, and 1.25 oz/acre with 1% volume/volume crop oil concentrate added) were applied to cotton for defoliation/desiccation and regrowth control and to wheat at various stages of growth. At the dryland cotton location in Crosby County, experimental design was a randomized complete block with four replicates. Treatments were applied using a Lee Spider plot sprayer with a multi-boom attachment to four 40-inch rows wide by 50 ft long on September 29. A final spray volume of 15 gallons per acre was achieved using Tee-Jet 11002VS nozzles with a 20-inch spacing with a ground speed of 3.5 mph and 32 psi operation pressure. At the time of application the field average percent open bolls was 95 and substantial regrowth had occurred as a result of late season rainfall. Visual observations for percent defoliation, desiccation, and terminal and basal regrowth control were conducted at 8 and 14 days after initial treatment (DAIT).

The treatments for the winter wheat phytotoxicity trial consisted of the same four rates applied directly to dryland winter wheat at two growth stages (2 leaf and tillering stages) and an untreated control. The wheat ('Tam 105') was planted (at 40 lb seed/acre) on September 6 and located at the Glover Research Farm in Lubbock County. Applications were made on September 24 and October 29 at the 2-leaf and tillering stages respectively. Experimental design was a randomized complete block with four replicates of each treatment. Plot size was 13.3 ft wide by 40 ft long. Applications were made using a Lee Spider plot sprayer with multi-boom attachment set to deliver 15 GPA spray volume through Tee-Jet 11002VS nozzles with a 20-inch nozzle spacing. Groundspeed was 3.5 mph with an operating pressure of 32 psi. Visual observations for percent phytotoxicity were conducted at 8 and 14 days after each application timing with an additional observation taken at 28 days after the tillering stage application. All data were analyzed using the GLM procedure in SAS 9.1 for Windows.

At the Crosby County dryland cotton location, significant differences were observed among treatments for all parameters measured with the exception of the 14 DAIT observations for percent basal regrowth control. The high rate (1.25 oz/acre) of Blizzard resulted in significantly greater defoliation, terminal regrowth control and basal regrowth control at 8 DAIT when compared to all other treatments. At 14 DAIT, the high rate was significantly greater for defoliation and terminal regrowth control when compared to the low rate (0.6 oz/acre) and the untreated check. Although some phytotoxicity symptoms were observed for the 1.0 and 1.25 oz/acre rates of Blizzard following the 2-leaf application and for the 1.25 oz/acre rate following the tillering stage application, the damage was minimal (<10%) and the crop appeared to recover.

Results indicate that there is a rate response in terms of defoliation and terminal regrowth control with the higher rate resulting in better performance. Preliminary results from the winter wheat study indicate that the use of Blizzard for cotton termination in close proximity to wheat can have minimal damage depending on the rate used.