

BARRAGE® HF, A NOVEL 2,4-D FORMULATION TECHNOLOGY FOR PRE-PLANT BURNDOWN

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Abstract

Barrage HF is a unique Low Volatile 2,4-D Ester product utilizing Helena Chemical Company Patented Formulation Technology. It is fully compatible with most liquid fertilizers and capable of working at lower than conventional LV ester labeled rates. Barrage HF is designed to maximize broadleaf weed control while minimizing spray application and mixing problems. It controls many annual broadleaf species while aiding in the suppression of certain perennial or biennial broadleaf weeds. The average use rate is 8-12 oz/acre depending on weed species and environmental conditions. Applications may be made by ground or air equipment, although ground applications may provide more thorough coverage and better weed control given the GPA of the spray solution.

EPA currently allows use of Barrage HF in fallowland applications (to specifically include "cotton regrowth"). The labeled rates are 6 – 13 oz/A, although use rates are generally 9 –10 oz/A tankmixed with products such as glyphosates, dicamba, sulfonyleureas, and others. Currently the shortest cotton pre-plant interval is 30 days if applied to fallowland. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

In 2003 Helena Chemical Company will be submitting documentation to the agency to substantiate the use of Barrage HF for a pre-plant (burndown) application on cotton. The application timing will be less than 30 days prior to planting of cotton. The granting of this amendment to the Barrage HF label will resolve ambiguity for EPA, state regulatory agencies and the producer on the proper, legal way to use Barrage HF in the control broadleaf weeds prior to planting cotton.

A trial was initiated at the request of cotton weed scientists across the cotton belt to generate a broad database to support a lower and better defined pre-plant interval to cotton. The trial was conducted at 11 locations in 2001 and 27 in 2002. Each trial consisted of four or more replicates. Treatments were Barrage HF at 13 and 26 oz/A applied with Roundup™ UltraMax @ 26 oz/A at different pre-plant interval. Pre-plant intervals of 21, 14, 7, and 0 days in 2001 and 28, 21, and 14 days pre-plant in 2002 were evaluated. Stand counts, crop phytotoxicity (visual symptomology), and yield were taken for all plots both years. If any visual symptomology was detected, plant mapping was conducted on all plots.

The average crop injury symptoms exhibited across all locations and pre-plant interval were less than 8% for either rate of Barrage HF in 2001 and 2002. In all incidences of crop phytotoxicity the injury was an expression of leaf symptomology. There were no stand losses attributed to Barrage HF at either rate or any pre-plant interval. The seed cotton yield for Barrage HF at 13 and 26 oz/A applied at 21 and 14 days pre-plant were averaged across years. No statistical differences between yields from the treatments ($P=0.05$, Waller-Duncan K-ratio Test) were detected.

Weed control trials were initiated in 2002 at 5 locations (MS, TN, NM, AR, & LA) to evaluate the low use rate potential of Barrage HF in the cotton burndown market to aid in the control of broadleaf weeds. Barrage HF at 6 and 12 oz/A tankmixed with Roundup UltraMax at 14 oz/A were evaluated at 28, 21, and 14 days pre-plant. Weed control ratings were made at 7, 14, 28, and 56 DAT. All weed control ratings presented are Barrage HF at 6 oz/A + Roundup UltraMax at 14 oz/A. Barrage HF at 12 oz/A did not add to the weed control of the weed species tested. The weed control for all broadleaf weed species tested increased relative to the days after treatment as well as the weed size as present at the pre-plant interval.

In Conclusion, Helena Chemical Company will be submitting a data package to EPA requesting a cotton pre-plant interval of less than 30 days. The use rates will be 6 – 13 oz/A. Barrage HF offers cotton producers another tool to combat troublesome weeds in the pre-plant burndown market.

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Roundup is registered trademark of Monsanto Company.