

**HEAT UNIT EFFECTS ON HARVEST-AID
PERFORMANCE OF FINISH™ IN**

THE NORTH DELTA

Bob Hayes and Owen Gwathmey

University of Tennessee

Jackson, TN

Claude Bonner, Bill Robertson, and Earl Vories

University of Arkansas

Little Rock and Keiser, AR

Gene Stevens and Bobby Phipps

University of Missouri

Portageville, MO

Abstract

Harvest aids are widely used to terminate cotton in the north Delta, but their efficacy in this region is frequently limited by insufficient heat units for rapid and complete response. The objective of this study was to determine efficacy of a new harvest-aid product, Finish™, under both warm and cool conditions. Finish is a premix of a cyclanilide (RPA 90946) and ethephon, manufactured by Rhone-Poulenc Ag Co. Defoliation, boll opening, and regrowth responses of Finish were compared to those of Prep (ethephon), Prep + Folex tank mixes, and an untreated check. Performance and temperature data were compiled from tests conducted in 1992 through 1995 at Jackson TN, Keiser and Proctor AR, and Portageville MO. This data set was partitioned by temperature regime based on accumulated heat units after treatment (HUAT, base 60° F). Defoliation and boll opening responses were evaluated at 13 to 15 days after treatment (DAT). Corresponding HUAT ranged from 36 to 75 in six experiments (cool conditions) and from 113 to 153 in six others (warm conditions). In cool conditions, 1.0 lb Finish averaged 80% defoliation compared to 87% for Prep + Folex tank mixtures. Average defoliation with 1.5 lb Finish increased from 85% in cool conditions to 90% in warm conditions, equivalent to Prep + Folex. Across environments, defoliation averaged 82% for 1.0 lb Finish, 87% for 1.5 lb Finish, and 89% for Prep + Folex. Boll opening responses of Finish were similar to Prep at equivalent rates. Finish at 1.5 lb was the most effective boll opener in four tests in cool conditions, and five tests in warmer conditions. Across environments, boll opening averaged 89% for 1.0 lb Finish, 94% for 1.5 lb Finish, and 87% for Prep + Folex. Terminal regrowth was suppressed to less than 20% by Finish in all tests in which regrowth was evaluated, except in one test at the 1.0 lb rate. Terminal regrowth suppression was significantly greater with Finish than Prep + Folex in four of six tests. By contrast, neither Finish nor any other harvest aid in this study inhibited basal regrowth. Highest yields were recorded for 1.5 lb Finish in four of ten tests, and highest percent first harvest in three of four tests

picked twice. Equivalent rates of Finish and Prep had similar effects on yield and earliness. Overall, boll opening and regrowth responses to Finish did not change relative to other treatments over the range of HUAT in these experiments. Warmer conditions tended to improve relative defoliation response to Finish compared to cooler conditions.

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