

**CGA248757 AS A COTTON HARVEST AID**  
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**Abstract**

The voluntary removal of arsenic acid from the commercial market has stimulated interest in new cotton (*Gossypium hirsutum*) defoliant/dessicant harvest-aids. CGA248757 ([2-chloro-4-fluoro-5[(tetrahydro-3-oxo-1H,3H-[1,3,4]thiadiazolo[3,4-a]pyridazin-1-ylidene)amino]phenyl]thio]-acetic acid methyl ester) is a low use rate post-emergent contact herbicide which inhibits protoporphyrinogen IX oxidase. Accumulation of protoporphyrins leads to radical production and cell damage. CGA248757 has low soil mobility and very short soil half-life.

CGA248757 is foliar absorbed. Absorption is greatest in leaves which are 0-2 weeks old and least in leaves greater than 4 weeks old for both mainstem and sympodial leaves and is not affected by variation in application time. Addition of nonionic, silicone-based, and oil-based surfactants increase the absorption of CGA248757 and these compounds act in combination to further increase absorption. These surfactants also increase the coverage area of individual droplets of CGA248757.

Four years of field studies which included CGA248757 as a cotton dessicant/defoliant were summarized by similar treatments and evaluation procedures. These studies indicate CGA248757 used at a rate of 5 g ai/ha for a single treatment provide about 75% leaf drop/desiccation at 7 days after treatment. Rates above 5 g ai/ha do not improve leaf drop/desiccation. The best leaf drop is provided by sequential applications of 3 or 5 g ai/ha five days apart. These provide 90% leaf drop/desiccation at 7 DAT. All performance ratings improved by 5-7% after a two week evaluation period. Total leaf drop/desiccation for four years was constantly in the 70 - 80% range seven days after treatment at 7.5 g ai/ha. However, the individual contribution of defoliation and desiccation varied from year to year. The average leaf drop/desiccation at 5, 7.5 and a 5-5 g ai/ha sequential treatment for four locations in Texas were similar to slightly higher those at College Station.