

**EVALUATION OF CGA-248757 AS A COTTON
DEFOLIANT**

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Abstract

Defoliation/desiccation is the final phase in preparing the cotton (*Gossypium hirsutum*) plant for harvest. Harvest aid chemicals are used in this phase to promote rapid boll opening and to prepare the crop for early harvest. These chemicals are generally classified as herbicidal (injure or stress the leaf stimulating ethylene synthesis. e.g. DEF/Folex) or hormonal (direct effect on the Auxin, IAA e.g. Dropp).

CGA-248757, [[2-chloro-4-fluoro-5[(tetrahydro-3oxo-1H,3H-[1,3,4]thiadiazolo[3,4-a]pyridazin-1-ylidene)amino]phenyl]thio]-acetic acid methyl ester]], a herbicide that is extremely effective for the control of velvetleaf (*Abutilon theophrasti*) in soybean (*Glycine max*) and corn (*Zea mays*) was evaluated as a defoliant/desiccant in cotton for four years. CGA-248757 induces accumulation of protoporphyrins, which leads to irreversible damage to cell membranes and cell functions. This activity on foliage of sensitive plants is very rapid, similar to that of Cyclone (paraquat), a widely used harvest aid chemical.

In 1997, CGA-248757 was evaluated at several rates alone and in combination with Prep®, and Dropp® and other harvest aid chemicals. CGA-248757 at 2 g ai/A applied sequential, provided effective defoliation, 10-14 day after treatment, which was comparable to DEF/Folex, Prep®, or Dropp® combinations. Combinations of CGA-248757 and Prep® or Dropp® at 2 g ai/A + 0.1 lb/A or 1 pt/A applied as a single application provided effective defoliation and good regrowth inhibition.