

**VALOR™ (FLUMIOXAZIN) HERBICIDE
– THE NEW STANDARD FOR LAYBY
APPLICATIONS IN COTTON**

**John V. Altom, John R. Cranmer and John A. Pawlak
Valent USA Corporation
Gainesville, FL, Cary, NC and Lansing, MI**

Abstract

Valor™ Herbicide, with the active ingredient flumioxazin, is a low use rate herbicide being developed by Valent USA Corporation in peanuts, soybeans, sugarcane, cotton, grapes, and almonds. Flumioxazin is an N-phenylphthalimide herbicide. The mode of action is inhibition of protoporphyrinogen oxidase, which leads to a disruption of the cell membrane. Flumioxazin rapidly degrades in water and soil, therefore leaching potential to groundwater is low and carryover potential to rotational crops is minimal. Because some weed species have developed resistance to several classes of herbicides, VALOR will offer growers a resistance management tool by controlling a broad spectrum of weeds, including ALS and triazine resistant weeds. VALOR also has demonstrated excellent soil and foliar activity.

Research over the past couple of years has demonstrated an excellent biological fit for VALOR as a late season post-directed or layby application in cotton. With the uncertainty of cyanazine's availability, weed scientists have been searching for alternatives to use for late season weed management in cotton. VALOR appears to be a herbicide to meet the requirements for late season weed control in cotton due to consistent postemergent weed control along with residual activity.

Crop injury is a major concern when applying post-directed or layby herbicides. VALOR has demonstrated excellent crop safety when applied to cotton at least 12 inches in height and applied on the bark layer. A misapplication of VALOR (i.e. broadcast over-the-top, small cotton with green stems, or eight inches up on a ten inch cotton plant) can cause severe cotton injury. Therefore, timing and correct method of application is critical.

VALOR applied at 2 oz. pr./A (0.063 lbai/A) tankmixed with Roundup Ultra (glyphosate) or MSMA has proven to be an excellent broad spectrum treatment controlling grasses, nutsedges, and broadleaves. These tankmixes are equal to and usually superior to the cyanazine + MSMA tankmix. A brief list of some broadleaf weeds that are controlled include: sicklepod (*Senna obtusifolia*), morningglory (*Ipomoea*) species, pigweed (*Amaranthus*) species, hophornbeam

copperleaf (*Acalypha ostryifolia*), smellmelon (*Cucumis melo* var. *dudaim*), cutleaf groundcherry (*Physalis angulata*), purple moonflower (*Ipomoea turbinata*), common ragweed (*Ambrosia artemisiifolia*), common lambsquarters (*Chenopodium album*), black nightshade (*Solanum nigrum*), Florida pusley (*Richardia scabra*), prickly sida (*Sida spinosa*), spotted spurge (*Euphorbia maculata*), wild poinsettia (*Euphorbia heterophylla*), common cocklebur (*Xanthium strumarium*), Florida beggarweed (*Desmodium tortuosum*), tropic croton (*Croton glandulosus* var. *septentrionalis*), devil's claw (*Proboscidea louisianica*), spurred anoda (*Anoda cristata*), Wrights groundcherry (*Physalis wrightii*), velvetleaf (*Abutilon theophrasti*), and hemp sesbania (*Sesbania exaltata*). Some of the grasses controlled include: johnsongrass (*Sorghum halepense*), bermudagrass (*Cynodon dactylon*), browntop millet (*Brachiaria ramosa*), large crabgrass (*Digitaria sanguinalis*), broadleaf signalgrass (*Brachiaria platyphylla*), goosegrass (*Eleusine indica*), smooth crabgrass (*Digitaria ischaemum*), and Texas panicum (*Panicum texanum*). Both yellow and purple nutsedge (*Cyperus esculentus* and *rotundus*) are effectively controlled. Therefore, the tankmixes with Roundup Ultra or MSMA offer broad spectrum weed control and residual activity on a number of key weeds in cotton. VALOR + Roundup Ultra or MSMA effectively controls most of the weeds that are listed as the most common and most troublesome weeds in cotton as published in the 1998 Proceedings, Southern Weed Science Society. Because of the quick weed control, effectiveness on a number of key weeds, excellent crop rotational profile, low use rate, and effective residual control, VALOR will offer cotton growers a valuable tool to manage late season weeds.