

**VALOR (FLUMIOXAZIN) HERBICIDE:  
A NEW STALE SEEDBED AND/OR LAYBY  
HERBICIDE FOR COTTON**

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**Abstract**

Research was conducted from 1996 through 1999 to evaluate flumioxazin, proposed tradename Valor, for use as a preplant herbicide in stale seedbed cotton and for use post-directed early season (PDS) on 6 inch tall cotton or late season as a LAYBY post-directed treatment on cotton at least 12 inches tall.

In post-directed research at two locations with Suregrow 125 and Deltapine 51 cotton, Valor at 0.063 lb or 0.094 lb ai/ac alone or tank mixed with MSMA at 2.0 lb ai/ac did not injure cotton any more (5% or less) than Cotoran (fluometuron) plus MSMA on 6 inch tall cotton or Bladex (cyanazine) plus MSMA on 12 inch cotton. All Valor treatments were applied with a nonionic surfactant (NIS) at 0.25% (v/v). Herbicide treatments did not influence the yields of cotton grown in a weed free environment. In weed management studies, Valor provided excellent burndown and good residual control of common lambsquarters (*Chenopodium album*), common ragweed (*Ambrosia artemisiifolia*), annual *Ipomoea* morningglories, redroot pigweed (*Amaranthus retroflexus*), smooth pigweed (*Amaranthus hybridus*), and Palmer amaranth (*Amaranthus palmeri*).

Cotton response to Valor applied 10, 8, 6, 5, 4, 3, 2, 1, or 0 weeks prior to planting (WPP) was evaluated at two locations (Bertie County and Goldsboro, NC) in 1996 and 1997. Winter vegetation was controlled with multiple applications of Roundup (glyphosate) and the plots were kept weed free to eliminate the confounding presence of weed interference. Cotton was injured 10% with Valor applied at planting (0 WPP) while all other application timings injured cotton less than 4%. Cotton lint yield was not reduced by any Valor treatment.

In 1999 research, Valor applied to stale seedbeds (4 to 5 weeks before planting) at Clayton and Rocky Mount, NC controlled common lambsquarters, Palmer amaranth, and common ragweed near 100% until cotton had approximately 3 to 4 leaves. At this time, Roundup and LAYBY herbicides were used to provide season long control. Cotton lint yields

were 100 to 200 lb/ac more in stale seedbed systems that used Valor compared to stale seedbed systems that used only burndown non-residual herbicides including Roundup Ultra, Gramoxone Extra (paraquat), and Touchdown (sulfosate). In fields with heavy infestations of Palmer amaranth, Valor offers potential as a stale seedbed treatment to provide early season control of this weed.

Cotton injury is more likely to occur with use of a crop oil concentrate when Valor is applied PDS or LAYBY. Cotton tolerance to Valor at LAYBY with a NIS is excellent provided Valor application is restricted to the bark.