

## Chemical Weed Control for Gladiolus

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Labor for weeding is the most expensive and time consuming item in gladiolus growing.

On some crops we now have some fairly well established methods for weed control: Stoddard's solvent on carrots and celery; 2, 4-D on corn and other grass crops; Crag #1 on strawberries and asparagus; chloro IPC and DNOSBP on alfalfa; and others. Some materials do a better job on some difficult weeds: 2, 4-D on yellow rocker, Chloro IPC on purslane, potassium cyanate on crabgrass, DNOSBP on chickweed, and Sodium TCA on quack and nut grass. With the many chemicals now available it is a matter of selecting a chemical or combination of chemical treatments that will best control the weeds in our own area and not seriously affect the gladiolus.

At the Ornamentals Research Laboratory this past season, Sinox E, a dinitro compound, at 1 gal/100 gal/acre was a very effective pre-emergence spray for glads. The yellow liquid was applied just as the first gladiolus shoots began to emerge from the ground. The yellow color makes it easy to judge the coverage. The weeds started to come in slowly after about 3-4 weeks last summer. There was no harm to the glads. "Premerger" should do the same job as it is a very similar dinitro material.

For both pre and post-emergence treatments 2, 4-D wettable powder at 1 lb. actual/100 gal/acre, TAT GW at 5-6 qts/100 gal/acre and Crag #1 at 3 lbs/40 gal/acre gave very good weed control early in the season. Crag #1 was only effective on weeds less than 1/2" in height at the time of treatment. 2, 4-D and TAT GW did affect larger weeds but, in general, its best results come from treating succulent weeds that are still very small.

Later in the season grasses became a problem in most of the plots. This year we are trying materials that may take out the grasses. Crag #1, Sinox, TAT GW, potassium cyanate, or 2, 4-D did not cause any marked injury on the gladiolus plants, affect cut flowers, or decrease bulb yield in any of our trials.

Work at other places has shown that 2 lbs. of 2, 4-D plus 10 lbs. of TCA per acre also gives good weed control including crabgrass. Our preliminary work and work at other experiment stations show that CMU often has too much of a residual effect and can be dangerous to later crops. Under moist conditions KOCN works fairly well but is not too effective in dry weather. Crag #1 has shown the most promise at many places because it does a good weed control job and does not affect the growing plants. The active ingredient of Crag #1 is not released from the material until after it is in the soil and has been acted on by soil inhabiting organisms. With all materials, results depend to a large extent on temperature, rainfall, and soil type and condition. For similar results, heavier applications are required on heavy colloidal soils than on light sandy soils. Poorly prepared soils with large lumps can give discouraging results because of a lack of penetration of the chemical to the weed seeds in the lumps of soil.

Chemical weed control is definitely going to be a part of cultural practice but for the present it is best to try out some of the promising materials on a small scale first. One grower we know is treating the fields the year before planting. It is suggested that weed control chemicals be used on a small scale under your particular conditions, to determine if any treatment

will solve your particular weed problem. Here are some suggested materials to be used at the manufacturers recommended concentration: dinitro for pre-emergence; Crag #1, 2, 4-D, TAT GW, Chloro IPC, Endothal, and 2, 4-D plus TCA as pre or post-emergence sprays.

In using weed killers or other chemicals as sprays it is important to calculate the proper dilutions. Listed below are some equivalents that may be of value.

A. 1 pound per 100 gallons is equal to 1/4 pound to 25 gallons or 1/2 ounces to 3 gallons or 1/6 ounces to 1 gallon.

B. 1 quart per 100 gallons is equal to 1/2 pint to 25 gallons or 1 fluid ounce to 3 gallons or 1/3 fluid ounces to 1 gallon.

C. 1 pound of 100% material is equal to 2 pounds of 50% or 10 pounds of 10% or 100 pounds of 1%.

D. 6 level measuring teaspoons is equal to 2 level measuring tablespoons or 1 fluid ounce.

E. The weight of dry materials held by a measuring teaspoon varies with the chemical so equivalents must be for specific materials. Equivalents of some common weed control materials are as follows:

Material	per acre basis	*per 400 sq. ft.
Potassium cyanate	10 lbs/100 gal.	5 Tbs/gal.
Ca. Endothal	1 lb/100 gal.	2 tsp.
N. I. X.	8 lbs/100 gal.	1/2 C or 8 Tbs/gal.
Crag # 1	3 lbs/40 gal.	10 1/2 tsp/3 pt.
CMU	2 lbs/100 gal.	4 1/2 tsp/gal.
2, 4-D		
50% W. P.	2 lbs/100 gal.	7 tsp/gal.
Chloro I. P. C.	6 qts/40 gal.	2 fl. oz/3 pt.
Any liquid	4 qts/100 gal.	1 1/3 fl. oz/gal.

\* This depends upon the density and fluffyness of the material: it is safer to weigh out 1/100 of the amount used per acre.

### LIST OF CHEMICALS USED IN WEED CONTROL

Comon Name	
Alanap. . . . .	N-1 Naphthyl Phthalamid Acid
CMU . . . . .	3-(p-chlorophenyl)-1, 1 dimethyl urea
Crag Herbicide # 1 . . . . .	2, 4 dichlorophenoxyacetic acid
Cyanate--KOCN. . . . .	Potassium or sodium cyanate
2, 4-D . . . . .	2, 4 dichlorophenoxyacetic acid
Dinitros--DNOSB . . . . .	dinitro-ortho-secondary butyl or amyl phenol
Endothal. . . . .	disodium 3, 6-endoxohexahydro-phthalate
IPC . . . . .	Isopropy 1N-phenyl carbamate
IPC, Chloro--CIPC	Isopropy 1N 3-chloro phenyl carbamate
Maleic hydrazide. . . . .	2 methyl 4 chloro phenoxyacetic acid
MCP--Mh . . . . .	
NIX . . . . .	Sodium isopropyl xanthate
PCP . . . . .	Pentachlorophenol
PMA--PMAS . . . . .	Phenyl mercury acetate
SESIN . . . . .	2, 4-dichlorophenoxyethyl benzoate
2, 4, 5-T . . . . .	2, 4, 5-Trichlorophenoxyacetic acid
TCA . . . . .	Trichloroacetic acid salts

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