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The Latest On Gladiolus Weed Control

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We are controlling weeds in gladiolus in New York State. Trials with New York growers and experimental work at the Cornell Ornamentals Research Laboratory (1) and by the North Carolina State College, Department of Horticulture, Raleigh, N. C. (2) show that diuron (Du Pont's Karmex, formerly Karmex DW) at 1-2 pounds active material per acre gives very good safe weed control. Simazine shows promise but we need more information before suggesting it for more than trial on a small scale. Other materials have not consistently given as long lasting, safe, low cost results.

At the Cornell Ornamentals Research Laboratory on Long Island, cormels were planted on May 29 in lots of 1000. They were treated with herbicide on June 6-11. Weed growth was noted on July 11. Corms were dug in late September, cured, cleaned, and yield records taken. The average weed growth and corm yields from five replicates of each treatment are shown in Table I.

As can be seen from Table I many treatments gave good weed control (average values under 2) and produced crop yields greater than from the untreated plots. On the basis of crop yield and weed control, the following treatments performed best: monuron 1½ lbs/A, neburon 6 lbs/A, diuron 1½ lbs/A, 4% CIPC+4% Sesone granular 150 lbs/A, CIPC 8 lbs/A, CIPC 6%+Sesone 5% granular 100 lbs/A, diuron 2% granular at 100 lbs/A, and simazine 2 lbs/A. From past seasons' and this season's results diuron (Karmex DW) appears to be the most effective herbicide for gladiolus.

Paul Lutz assistant agent in Schenectady County working with several gladiolus growers in his county found that diuron applied before emergence of gladiolus or weeds at 1½ lb/A gave good weed control on flowering size gladiolus. Monuron also gave good results but diuron does have a greater safety factor because of its low solubility. Diuron, because it is in suspension, needs good agitation in the spray tank.

Diuron has been successfully used on a large acreage at rates of from ¾ up to 2 pounds of active ingredient (1-2½ lbs. of 80% Karmex) per acre before emergence of gladiolus and weeds. It has also been used at the lower rate for treatment at lay-by (after last cultivation just before flowering).

Growers in New England have used dinitro (Premerge, Sinox P.E.) at rates of 3-5 gallons per acre pre-emergence with very good results. However, the Dow Chemical Company recommends only 2½-3½ gallons per acre so the 5 gallon rate is a bit high especially for cormels. Dinitro is

TABLE I—Effect of Herbicides on Weed Control and Yield of Gladiolus in 1958 on Long Island Cormels Variety Friendship

Chemical	Lbs. Active Per Acre	Average Weed (a) Growth July 11	Average Corm (b) Yield in Grams
Untreated No. 1	—	5	798
Untreated No. 2	—	4.2	826
Untreated No. 3	—	5	1042
Simazine 8.5% granular (clay)	1	4.4	872
Simazine 8.5% granular (clay)	2	2.5	1276
Simazine 8.5% granular (clay)	3	2.8	1152
Simazine 50% wettable powder	1	1.4	1094
Simazine 50% wettable powder	2	0.7	1122
Diuron 80% wettable powder	1½	0.5	1278
Monuron 80% wettable powder	1½	0.5	1320
Diuron 2% granular (clay)	1	1.2	1058
Diuron 2% granular (clay)	2	0.5	1266
Neburon 18.5% wettable powder	6	0.5	1300
Chloro IPC 5% granular (clay)	8	2.8	1198
Chloro IPC emulsifiable	8	1.2	1288
Geigy 30031 emulsifiable	2	1.9	926
Sesone 90% soluble powder	4	1.9	1022
Chloro IPC 6% Sesone 4% granular (ver)	3+2	2.7	1140
Chloro IPC 6% Sesone 4% granular (ver)	6+4	1.5	1284
Chloro IPC 6% Sesone 4% granular (ver)	9+6	0.6	1186
Chloro IPC 4% Sesone 4% granular (clay)	4+4	1.7	1176
Chloro IPC 4% Sesone 4% granular (clay)	6+6	0.4	1288

(a) Scale: Average of 5 replicates

0—no weeds
1—very few weeds
2—few weeds
3—some weeds
4—many weeds
5—very weedy

(b) Average of yield of 5 replicates

particularly good if weeds have started before the glads have emerged.

There are several factors to be considered when contemplating a chemical weed control program. Land free of perennial weeds such as nut grass, quack grass, chrysanthemum weed, and bindweed will be much easier to handle as herbicides now available for use on gladiolus will not do much to these weeds. Cultivated fields free of perennial weeds are a big start in growing weed free gladiolus or any other crop. Applying the herbicide before the gladiolus sprout above the ground is much safer to

(Continued on page 2)

Gladiolus Weed Control

(Continued from page 1)

the glads as germinating seed or sprouting bulbs are very sensitive to chemicals. If the soil surface is smooth packed, free of growing weeds, and moist, conditions are more favorable for depositing an even concentrated layer of herbicide. The moisture favors the germination of weeds and the weed is most sensitive in the seed germination stage.

Table II shows materials and rates for weed control on gladiolus. Rates are for the commercial product as listed, not pounds of actual chemical. Gallonage of water can be reduced as long as the amount of herbicide applied per acre remains the same. Heavier soils usually require the

higher rates and lighter sandier soils the lower rates. All liquid applications put on after gladiolus are up should be directed at the bottom 1-1½ inches of the plant where there is a tough sheath. Avoid getting herbicides on emerging flower sheaths and buds.

Never cultivate plots that have been treated with herbicide unless weeds have again become a problem and cultivation is necessary to kill growing weeds. In most soils glads grow just as well in undisturbed uncultivated soil.

References

1. Bing, A.—Weed Control on Gladiolus, 1958 results. Northeastern Weed Control Conference 13: 377-380, 1959.
2. Bing, A.—What is New in Weed Control on Glads. North American Gladiolus Council Bulletin, March, 1959. (in press).

TABLE II
Materials Suggested for Trial Use on Gladiolus in 1959

Time of Application	Corms	Size Cormels	Material*	Rates**	
				Per 40-100 gal. for 1 acre	Per gal. for 400 sq. ft.
Pre-emergence	x	x	Chloro IPC	6-8 qt.	2-2½ fl. oz.
	x	x	Karmex DW 80% W.P.	1-2 lbs.	3-6 tsp.
		x	Dinitro*** (3 lbs/gal)	4-10 qts.	1-2½ fl. oz.
	x		Dinitro***	4-12 qts.	1-3 fl. oz.
	x	x	Chloro IPC 5% granular	160 lbs. (no water)	1.44 lbs. (dry)
	x	x	Dinitro 4% granular	100 lbs. (no water)	0.90 lbs. (dry)
Post-emergence****	x	x	Simazine 50% W.P.	4-6 lbs.	2-3 tablespoons
	x		Karmex DW	½-1½ lbs.	1½-4½ tsp.
	x	x	Crag No. 1 (90%)	4 lbs.	9 tsp.
	x	x	Chloro IPC 5% granular	160 lbs. (no water)	1.44 lbs. (dry)
	x		Dinitro 4% granular	100 lbs. (no water)	0.90 lbs. (dry)

*All materials except dinitro should be applied before weeds are up or at least are less than ¼—½ inch high.

**Usually follow manufacturer's directions. Rates are given for commercial material.

***Look out for drift to other crops.

****Use no treatment from time spikes start to emerge until after cutting.