

# Fungicidal Corm Dips for Gladiolus



The fungicides and rates applied in these tests included:

Fungicide	Amount per 100 gallons of water	Dipping time (minutes)
New Improved Ceresan	2 pounds	1/2, 10, 15
Ceresan 200	2 pints	1/2, 10
PCNB + Ferbam	2 pounds, each	30
Phaltan 50	12 pounds	30
Panogen 15	10 ounces	1/2, 10, 15
Dowcide B	4 pounds	10
Elcide 70	2 pints	10
Elcide 73	2 pints	1/2, 15
Emmi	2 pints	1/2, 15
Panogen Soil Drench	10 ounces	1/2, 15

Surface infections of *Fusarium oxysporum* f. *gladioli* and other fungi which infect gladiolus corms (bulbs) can be controlled effectively by dipping them just prior to planting. Six field trials conducted over a two-year period in the coastal area of San Diego County showed that fungicidal corm dips are an important phase of gladiolus disease control.

**T**HE CORMS of several gladiolus varieties were dipped in fungicide and planted in different types of soil. During the first year, three similar trials in different locations compared nine fungicidal treatments with an untreated control. During the second year, three more trials further tested the most promising of the treatments. One hundred corms were used for each plot. The treatments were replicated six times the first year, giving 600 corms per treatment, and five times the second year giving 500 corms per treatment.

Four ounces of a sticker-spreader per 100 gallons of dip were used in all tests. After dipping, corms were planted immediately, covered, and irrigated within 24 hours. Varieties of gladiolus included Spotlite, Mallow, Tivoli and Wembley.

The amount of field disease was measured along with data on corms harvested and number of rot-free corms. Emergence counts, flower maturity, spike sizes and total stem length were also recorded to determine any phytotoxic reactions to the fungicides.

## Discussion

All of the dips had some beneficial effect, either on the health of the plants during growth, or the state of the corms harvested after growth had ceased. Generally, growth and productivity improved with control of disease. Occasionally, however, the toxic action of a fungicide caused delayed growth.

## Mercurials

Of the treatments with mercury compounds, the half-minute dip with Ceresan

200 was found to be effective, nontoxic, and convenient in application. The half-minute dip with Ceresan 200 greatly increased the percentage of corms harvested and the percentage of rot-free corms, and it shortened the period until flowering as compared with the untreated corms. The Ceresan 200, half-minute dip, also increased the number of florets per spike and the length of the spike.

New Improved Ceresan gave slightly erratic results. In one trial, New Improved Ceresan delayed flowering, particularly when applied as a 15-minute dip, but in a later trial it hastened flowering by apparently controlling disease. In this later trial the treated corms had previously been heat-cured. (Heat-curing helps to prevent the treated corms from absorbing too much mercury into the tissues.)

The half-minute dip in New Improved Ceresan also improved the length of spike and the yield and condition of harvested corms. The half-minute treatment with New Improved Ceresan did not significantly shorten the period until flowering and did not significantly increase the number of florets per spike.

Of the other mercury compounds, Emmi received only one test but was effective in controlling fungi. Panogen 15 appeared adequate as a 10-minute dip, and Panogen Soil Drench as a one-half-minute or 15-minute dip. Elcide was found quite effective, if used as a 15-minute dip.

## Nonmercurials

Among the nonmercurials, Phaltan as a 15- or 30-minute dip gave promising results. In one trial it gave outstanding control of disease on the corms. In another trial it failed by only a narrow margin to show a statistically significant reduction of disease on Tivoli corms. Phaltan was consistently among the effective treatments and was nonphytotoxic. If a nonmercurial dip for gladiolus corms is needed, and a 15-minute immersion is not too long, Phaltan should be considered. The PCNB-Ferbam dip and Dowcide B gave relatively poor control of disease and were not considered good enough to test during the second season.

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