

# Fungicidal Dips for Gladiolus Disease Control

Colin E. Campbell  
New York Florist Club Research Fellow  
Department of Plant Pathology

During the summer of 1946 experiments were conducted by Dr. A. W. Dimock, assisted by Mr. Colin E. Campbell of the Department of Plant Pathology, to determine the effectiveness of various fungicidal materials for controlling diseases of gladiolus when used as pre-planting dips. Eleven different materials were tested, and an untreated check plot was planted for comparing the degree of disease control.

Number 5 corms were used for the tests. The corms were inspected before the treatments were made and all obviously diseased corms were discarded. In this experiment, the most prevalent disease was *Fusarium* yellows, but in making the counts all diseases were considered. Six hundred corms were treated with each material and were divided into four replicates of 150 corms each when planting. A randomized block arrangement was used in laying out the test plot. The corms were dipped immediately before planting, and were planted while still wet with fungicides.

Emergence of the plants in each plot was checked shortly after the plants were above ground. None of the treatments decreased the percentage of emergence. After the plants had emerged, however, a marked retardation of growth was noted in the corrosive sublimate, calomel, and combination corrosive sublimate and calomel treatments; this retardation continued throughout the growing season.

Diseased plants were counted during the season, and at blooming time a count was made of the number of blooms in each plot. The following table is a summary of these observations:

While treatments 1, 2, and 3 gave the highest degree of disease control, the plants were markedly retarded in growth; blooming was nearly two weeks later than in other treatments. Although the total number of blooms in these three treatments eventually equalled that of other treatments, the blooms were of poor quality, the flower spikes were spindly, and the foliage was somewhat yellow and weak.

Both New Improved Ceresan and Lysol, the materials that are now commonly used for pre-planting dips, controlled the diseases very well and did not reduce the flower production. Experiments with these materials are to be continued for several years, and for this reason no recommendations for use of new materials are being made at this time. Last season's tests, however, indicate conclusively that pre-planting treatment with fungicidal materials constitute an effective step in controlling gladiolus diseases. It is hoped that in future tests certain materials used last season can be used at higher concentrations and will give as good or better control than that attained with treatments 1, 2, and 3 and without injury to the corms.

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## D I M O C K R E T U R N S

Dr. A. W. Dimock recently returned to Ithaca after spending six months sabbatic leave at the University of California, Los Angeles, where he was studying and working with Dr. Kenneth Baker of U. C. L. A. "Wat" is eager to help us with our disease problems and we welcome him back to Cornell.

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Treatment	Treating time	Number of diseased plants		Total number of blooms	
		Aug. 2	Aug. 27	Aug. 12	Aug. 27
1. Corrosive sublimate	16 hrs.	3.5	11.0	22.75	108.50
2. Calomel	5 min.	4.5	11.0	24.50	105.25
3. Treatment 1 plus treatment 2		1.0	3.5	33.00	123.75
4. New Improved Ceresan	15 min.	1.0	13.0	59.25	112.50
5. Lysol	6 hrs.	4.2	17.0	78.75	115.00
6. Fermate	5 min.	4.2	20.5	75.75	106.75
7. Thiosan	5 min.	3.4	15.0	79.00	113.50
8. Phygon	5 min.	4.0	25.0	63.50	106.25
9. #341	5 min.	9.6	23.0	70.25	97.50
10. Puratized N5E	15 min.	5.0	18.0	71.75	99.25
11. Sodium dimethyl dithiocarbamate	6 hrs.	5.0	14.5	81.25	108.00
12. Untreated check		15.0	40.0	49.00	75.00