In general the corm number yields were similar for all three dip temperatures. Similarly the mean weight of the corms, or grade, was equivalent in all dip treatments.

**Summary**

Maximum plant growth occurred with the use of the Dowicide B at the rates of 0 and 3 pounds per 100 gallons in the pre-plant corm dip treatment. The 3 pound rate produced the maximum spike number yields, but spike quality was similar at the 0, 3, and 6 pound rates. Although corm number yields were slightly lower at the 3 pound rate than at the 12 pound rate, the difference was barely significant and hardly practical. Reduced corm number yield occurred when the 0 pound rate was used. But, the 0 and 3 pound rates produced the largest corms.

The dip time had less influence upon the plant growth than did the Dowicide B concentration. However, the maximum plant growth developed with the 7½ minute time for the pre-plant corm dip. Actually the maximum growth retardation with the 30 minute dip occurred with the 12 pound rate of the Dowicide B. Over-all spike yields were similar for all three dip times of 7½, 15, and 30 minutes. The most striking observation here was that the Dowicide B at the 12 pound rate in the 30 minute dip produced only about one-half the number of spikes as did the 3 pound rate in the 7½ minute dip. Spike quality was similar in all dip periods. Both the corm number and the corm grade were similar in all three dip treatments.

The plant growth was not affected by the temperature of the pre-plant corm dips. Spike number yields were in general similar with all three dip temperature ranges. However, the 12 pound rate of the Dowicide B did appear to be slightly more toxic in the 70-80°F dip than in the 50-60°F dip. Spike quality was somewhat similar with all three dip temperatures. The strong interaction here between dip temperature and planting stressed the inadvisability of using increased concentrations of the Dowicide B, and especially at elevated dip temperatures, during cold weather because of the possible increase in phytotoxicity. Treating with high concentrations at a low temperature range of 50-60°F was safer, but it was not necessary anyhow to use rates higher than the 3 pound rate of the Dowicide B. Both corm numbers and corm quality were similar at all three dip temperatures.

The final recommendation for the Dowicide B pre-plant corm dip treatment, which would fit a wide range of climatic conditions, would be the 3 pound rate for a 7½ minute dip at whatever air temperatures exist at the particular time.

**LITERATURE CITED**


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**CALYCOPHYLLUM SPRUCEANUM, A NEW FLOWERING TREE FOR SOUTH FLORIDA**

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Among the recent plant introductions at the Sub-Tropical Experiment Station, one species shows particular promise as an ornamental. Seeds of *Calycophyllum spruceanum* (Benth.) K. Schum. were received from the Atkins Garden and Research Laboratory, Cienfuegos, Cuba, in 1952. Two trees were grown from the seed. These were planted in the field in 1953. One tree has survived and has developed into a beautiful specimen.

*Calycophyllum spruceanum* is in the family Rubiaceae. MacBride (1) gives the following botanical description of the species: "A tree 15 to 27 meters high, with brown bark; leaves petiolute, the blades oblong to oblong-ovate, acute to obtuse at the base, 9-17 cm. long, minutely puberulent beneath at first but soon glabrate, barbate in the axils of the nerves; cymes dense and many-flowered, the inflorescences at first wholly enclosed by the thin bracts; calyx 6-9 dentate, the lobes all minute; corolla white, 6-7 mm. long, the lobes spreading; hypanthium densely white-pilosulous, capsule oblong, 8-11 mm. long, densely appressed-pilose."

*Florida Agricultural Experiment Stations Journal Series, No. 1222.*
Record and Hess (2) state that *Calycophyllum spruceanum* is common along the Amazon River, particularly in its upper reaches, and grows in inundable lowlands. It is called "pau marfim" or ivory wood, and the wood is used in the manufacture of furniture.

One of the trees at the Sub-Tropical Experiment Station was planted in a location where it was exposed to winds and cold. It sustained cold injury during a frost in January, 1956, and was killed by exposure to low temperatures in February of 1958. The other tree received considerable protection because it was planted close to several larger trees. In the severe freeze of 1958, it suffered damage to leaves and small wood, but recovered quickly. This tree withstood the hurricane winds of September, 1960, relatively well. Several lateral branches broke off, but there was no apparent damage to the trunk and roots.

*Calycophyllum spruceanum* is upright in habit. The tree at the Sub-Tropical Experiment Station is approximately 35 feet in height at the age of 9 years. Before the hurricane of September 1960, it had a spread of about 20 feet. The spread would probably have been greater if the tree had grown in the open. The roots have shown no tendency to become buttressed and to extend above the surface of the soil, even though the tree is growing in very shallow soil. The leaves, which are deep green and glossy, are held on the tree all year (Figure 1).

When not in flower, the most outstanding characteristic of the tree is its bark. The bark is reddish brown, smooth, and shiny. It continually sloughs off in elongate strips of irregular shape.

The tree first flowered at the Sub-Tropical Experiment Station in December of 1959. At that time, it was covered with dense cymes of small, white flowers (Figure 2). That bloom lasted approximately two weeks. A second, smaller bloom occurred during March of 1960. There was only one small bloom during the winter of 1960-61. This was probably a result of hurricane damage to the tree.

This species is apparently well adapted to the limestone soils of the Homestead area. It had received no special care other than an occasional application of general purpose fertilizer. No symptoms of nutrient deficiencies have been observed.

Because this tree is easily injured by temperatures below the freezing point, it probably is suitable for cultivation only in the southern coastal region of Florida. From its native habitat, it may be inferred that it will grow in low areas which are occasionally inundated.

The foliage, bark, and flowering characteristics of *Calycophyllum spruceanum* recommend it for trial as an ornamental in South Florida.
USE OF SOIL FUMIGANTS IN THE PRODUCTION OF GLADIOLUS Corms FROM CormELS

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For many years, Florida gladiolus growers have purchased planting stock from the northern United States, Canada or Holland because of the expensive task of weeding and maintaining disease and nematode control in Florida soils. Research over the past decade has established that these problems can be greatly reduced by the use of soil fumigants. Burgis and Overman (1, 2, 3, 9) have demonstrated that as little as 12.5 gallons of Vapam* (Sodium methyldithiocarbamate) or 25 pounds of Mylone (3,5-dimethyltetrahydro-1,3,5,2H thiodiazine-2-thione) per acre applied directly in-the-row was effective in controlling weeds, diseases, and nematodes in vegetable crops. According to Magie (6, 7, 8), 50 gallons of Vapam or 200 pounds of Mylone broadcast per acre gave excellent control of weeds and the dry rot fungus, Stromatinia gladioli (Drayt.) Whet., in gladiolus corm plantings.

The object of this study was to determine the usefulness of Vapam and Mylone in the production of corms from cormels.

METHODS AND PROCEDURES

1958—A preliminary non-replicated experiment started October 29, 1957 on Blanton fine sand included (1) untreated check, (2) Mylone 50D at 400 lbs. active material/A. and (3) Mylone 85W at 400 lbs. active material/A. as soil treatments. Each plot was 3.5x80 feet and contained two rows of cormels 10 inches apart. Both Mylone treatments were applied in split applications by rotary-tilling one half of the Mylone into the first 8 inches of soil and then broadcasting the other half over the soil surface and incorporating with a garden rake. One inch of water was applied immediately with overhead irrigation and one-half inch of water was applied each day for the next three days. Twenty-five Spic & Span cormels per foot of row were planted on September 9. The check plot was cultivated several times during the crop season, whereas Mylone plots received very little cultivation.

1959—Two fumigants (Vapam and Mylone) and an untreated check, four locations within the field, and three varieties (Valeria, Elizabeth the Queen, and Friendship) were combined in a split-split-plot experiment with three replications on Blanton fine sand February 4. Fumigants and the untreated check represented the whole plots. Each sub-plot (location) was 3.5x15 feet and contained three rows of cormels—one row of each variety. Three hundred pounds per acre of active Mylone (95W) were raked into the upper 1 inch of soil. Seventy-five gallons per acre of Vapam were applied as a drench. All plots were irrigated immediately in the same manner as in 1958. Twenty-five cormels per foot of row were planted February 19. Microbiological data were obtained as previously described. The corms were dug and counted July 25.

1960—Two fumigants (Vapam and Mylone) and an untreated check and five varieties (White Excelsior, Elizabeth the Queen, Spic & Span, Friendship, and Florida Pink) were arranged in a split-plot experiment with four replications November 23. The fumigants and

LITERATURE CITED
