

showed a curvature. As lateral roots were formed, they were "burned off" as they came in contact with the soil surface. It was concluded that this was due to injury from Orthocide. In subsequent work injury by Orthocide was found to occur only when it was applied to the seedbed during the first four weeks after seeding.

Dichlone also caused severe injury. Fortunately, this material is not used by celery growers.

Foliar Sprays.—Since soil treatments were only effective against root diseases, foliar spray tests were also undertaken. This work was done concurrently with the soil treatment tests and included 10 separate trials.

Post-emergence damping-off generally is considered a soil problem, and control is directed toward treating the soil. As shown under "Symptomatology" and in Figure 3, however, damping-off symptoms occur on petioles well above soil level. This suggested that instead of drenching the beds at the rate of $\frac{1}{2}$ gallon to the square yard (over 65 gals. to the bed), a more conventional foliar spray might be adequate. This would have several advantages: 1) applications with a conventional spray rig would be possible; 2) it would also make possible combining the control operations for damping-off and for the leaf blight diseases; 3) the likelihood of phytotoxicity should be lessened because of reduced gallonage output (10 gals./bed instead of 65).

Using this procedure, it was found that any number of materials provided adequate control of damping-off. These included Sperguson (chloranil) (4/100), Fermate (ferbam) (2/100), any of the neutral coppers (2 lbs. metallic copper/100) and PCNB (2/100). Dithane M-22 (maneb) ($1\frac{1}{2}$ /100), though less effective, also showed a significant degree of control.

During this work effective control of bacterial blight was developed (7). The neutral coppers and streptomycin used alone and in mixture were effective. Information on control of early blight has long been available (10). Thus, the stage was set for the testing of combination sprays involving effective materials against damping-off, early blight and bacterial blight. Several such tests were run. Results are summarized in Table 5.

All combinations provided a high degree of control of bacterial blight and early blight, as well as damping-off. None of the mixtures was completely incompatible, although chloranil-zineb-Agrimycin-100 and CopperA-zineb-Agrimycin-100 caused a bronzing of the leaves. It was also found that Agrimycin-100