

Injury from Spray Chemicals

The chemicals we use in combatting insect and disease pests deserve the respect and caution of every grower. The physiological types of injury that may result from some of the modern chemicals are almost limitless. Deformative symptoms similar to those from weed killers have been reported from overdoses of organophosphates. Some of the newest insecticides not related to organophosphates have caused growth abnormalities indicating an action on the hormone balance within the plant. The accompanying photographs show:

- A. Interference with apical dominance thereby inducing heavy branching. Similar injury has been noted following application of Chloro IPC to control chickweed in beds of carnation cuttings.
- B. Horizontal growth cracks in stems which may break over before maturity (C), or may not break until the flowers are cut.
- D. Extremely crooked growths accompanied by overgrowth galls along the internodes (left), or shortened internodes and abnormal growth of leaves at the point of attachment (right).

All of these symptoms followed one spray application of Morocide, one of the newer miticides of considerable merit. Other applications at earlier dates on different plants produced no visible injury. While there was slight bleaching of new growths following this application, nothing of a serious nature was observed until several weeks later. These symptoms were photographed 10 weeks after spraying, as the flowers were maturing on the injured growths. This places the growths at 5- to 10-inch shoots at the time they were sprayed.

While Morocide is an excellent miticide, an overdose can cost possibly as much as the mite damage. An overdose of many chemicals can be caused by 1) using too strong concentration, 2) too much volume of spray, or 3) too much wetting agent. Many of the current spray formulations contain sufficient wetting agent for medium hard water.

To use or not to use spray materials or fumigants for control of pests and diseases is a management decision. All spray or fumigant materials probably cause plant injury. Minimizing this injury and controlling our pests may offer a very fine margin of safety.



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FIRST CLASS