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Use Weed Control Chemicals Carefully

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Chemicals for weed control are of great benefit to horticulture and are widely used in modern agriculture. These useful chemicals may create special problems to the flower grower, however.

There are many types of weed killers or herbicides. Some kill only certain types of plants and are classed as selective herbicides. This selectivity is not absolute and may depend upon the amount of chemical, the way it is applied, the soil moisture, texture, temperature, humidity, and other factors. Other

herbicides are non-selective and are used to kill or remove any type of plant. Herbicides may be applied to the plant foliage or to the soil and after application they may be active for many months or only for a few days (1).

Most growers are acquainted with the danger from spray or vapor drift when herbicides are sprayed in the vicinity of a susceptible crop. There are more subtle dangers. Residues of herbicides are very difficult to wash out of equipment. It is recommended that spray equipment, contain-

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Fig. 1.
Distorted poinsettia plants.



Fig. 2. Normal tomato plants (at right) grown in new soil and pot which had contained healthy poinsettia plants. Distorted tomato plant (at left) grown in new soil but in a pot which had contained distorted poinsettia plants.

ers, or hand-gun hoses used for applying herbicides should not be used for applying fungicides or insecticides to susceptible plants. Hoses, especially, should never be used to apply herbicides, then later used as watering hose. It is important not to store herbicides close to seeds, fertilizers, insecticides or fungicides as they may become contaminated by the fumes or may be used in error by careless workmen (1). Soil may be contaminated before it is brought into the greenhouse by stacking it on a treated area or by obtaining treated soil from the field.

Last winter (1961-62) distortion of poinsettia plants was observed in a commercial greenhouse several weeks before Christmas. The tip ends of the plants were severely wrinkled and the leaves and flower parts of the bracts were curled; the flowers became pale green and asymmetrical, the bracts being very distorted (Fig. 1). The stems were twisted and abnormal. These affected plants were distributed at random in the greenhouse. The symptoms suggested a weed killer, but no weed killer had been applied in the area for many months. In no instance were symptoms observed on a fraction of the plants in a pot: all were either distorted or all were healthy. This suggested that the cause was associated with soil or root contact, or with the pot.

Pots associated with distorted plants were filled with new soil, and soil in which plants with symptoms had grown was placed in new pots. Tomatoes, which are very sensitive to herbicides, were planted in these pots. The results (Fig. 2) in-

dicated that the crippling was associated with the pots. There was a lag between planting and appearance of symptoms which corresponded to the time required for the roots to come in contact with the bottom of the pot. Thus some of the pots in the greenhouse were harboring a significant amount of weed killer. The sporadic distribution of the disease in the greenhouse was probably due to the careless spraying of a weed killer during the summer near stacks of new pots that were later used for the poinsettia plants. The top pot of each stack received a harmful amount of weed killer. This experience indicates that great care should be exercised when using herbicides near stored clay pots, and it is suggested that pot storage areas be well separated from herbicide storage areas.

Literature cited

1. Heikes, P. E. et al. Colorado weed control handbook. 1962.

Editor's note of CAUTION: Several cases of weed killer injury have come to our attention in the past year. In most cases the source of injury is contaminated soil. 2-4D, borates, arsenicals, Karmex W, and almost all weed killers are extremely toxic to most flowering plants. A soil can be poisoned almost permanently by minute amounts of many chemicals. Once a weed killer is in the soil, about the only way to correct the problem is to change the soil. Weed killer injury is often difficult to diagnose. Be careful how you use and store weed killers, and above all be sure that all weed killer containers are labelled prominently. Destroy any chemical or spray material that is not labelled.