HERBICIDE INJURY

Some of the most frequent plant disorders seem to be

the result of the extensive use of herbicides (weed

killers). The constantly increasing number of herbicides

in use by more and more people for general or specific

weed control is creating numerous problems among

those who use them, their neighbors, and those who use

soil that has been treated with herbicides.

Herbicides are either specific against broad-leaved

weeds [atrazine, simazine, (2,4-dichlorophenoxy) acetic

acid (2,4-D), dicamba (Banvel-D)] and are applied in

corn and other small grain fields and on lawns or they

are specific against grasses and some broad-leaved

weeds [Dacthal, trifluralin (Treflan)] and are applied in

pastures, orchards, and in vegetable and truck crop

fields. In addition, some herbicides are general weed or

shrub killers [glyphosate (Roundup), paraquat, terbacil

(Sinbar), picloram]. Most herbicides are safe as long as

they are used to control weeds among the right crop

plants, at the right time, at the correct dosage, and when

the correct environmental conditions prevail. When

any one of the aforementioned conditions is not met,

abnormalities develop on the cultivated plants with

which the herbicides come in contact. Affected plants

show various degrees of distortion or yellowing of leaves

(Figs. 10-14A–D), browning, drying and shedding of

leaves, stunting (Fig. 10-14E), and even death of the

plant (Fig. 10-15). Much of this damage is caused by

too high doses of herbicides or by applications made too

early in the season or on too cold or too hot a day or

when dust or spray droplets of an herbicide are carried

by the wind to nearby sensitive plants or to gardens or

fields in which plants sensitive to the herbicide are

grown. Of course, direct application of the wrong pesticide

in a field with a particular crop plant will kill the

crop just as if it were a weed.

Use of preplant or preemergence herbicides through

application to the soil before or at planting time often

affects seed germination and growth of the young

seedlings if too much or the wrong herbicide has been

applied. Most herbicides are used up or are inactivated

within a few days to a few months from the time of

application; some, however, persist in the soil for more

than a year. Sensitive plants planted in fields treated

previously with such a persistent herbicide may grow

poorly and may produce various symptoms. Also, home

owners, home gardeners, and greenhouse operators

often obtain what looks like good, weed-free soil from

fields that, unbeknown to them, had been treated with

herbicides. Such soil when used to grow potted, bench,

or garden plants results in smaller, distorted, yellowish

plants, which sometimes shed some or all of their leaves

and either die or finally recover.