

### *Herbicide-damaged plants common*

Colorado State Extension agents commonly see herbicide-damaged plants this time of year. Phenoxy herbicides cause over half of the plant injury seen in CSU's disease/injury clinics. Tomatoes, grapevines and many vegetable and ornamental plants are extremely sensitive to herbicides containing phenoxy-type active ingredients.

Phenoxy herbicides include 2,4-D, MCPA, Crossbow, Banvel, Garlon, Weed-B-Gone and Brush Killer. They also are the active ingredient (2,4-dichlorophenoxy-acetic acid, 2-methyl-4-chloro-phenoxyacetic acid, triclopyr or dicamba) in "weed and feed" and brush control products for use in the home landscape.

This family of pesticides includes many very effective broadleaf weed killers. They are used on lawns, golf courses, rights-of-way and agricultural fields. They are very popular for controlling kochia and other broad-leafed plants. They do not require a pesticide license for purchase and are readily available from many retailers.

The symptoms of phenoxy herbicide damage are most dramatic on the youngest leaves and the tips of growing shoots. Affected leaves are small, narrow and misshapen and have closely packed, thick veins that lack chlorophyll. The leaves sometimes are cupped, and the leaf margins often terminate in sharp points. Small, interveinal spots retain some green chlorophyll.

Unintended drift of all herbicides can be caused by wind, shifting air currents, climatic inversions or spraying at high pressures (which causes a very fine mist). In addition, applying phenoxy herbicides in and before hot temperatures can cause drift of the volatile herbicide chemical.

This gas drift is one of the more common sources of unintended drift injury on sensitive plants. Sensitive vegetation in close proximity to a sprayed area is at highest risk. However, even plants some distance from a phenoxy-treated area can be damaged under certain conditions.

Temperatures above 70-75 degrees Fahrenheit allow ester formulations of phenoxy herbicides to volatilize (vaporize) and be carried by the wind several hours and sometimes a day after the spray application. Amine formulations are less likely to volatilize than the ester formulations.

## Green and Growing

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However, if air temperatures exceed 86 F within 24 hours after treatments, all phenoxy herbicides are likely to volatilize and drift. Spraying in the cool of the morning doesn't prevent volatilization later in the day.

Wait for weather forecasts for a cooler day to use phenoxy herbicides in the summer. When forecasts are for hot conditions, use other non-volatile herbicides (glyphosate containing herbicides for example) or simply use mechanical or other non-chemical weed control methods.

Always read the pesticide label before buying it and follow the pesticide label directions when mixing or using it. Use of any pesticide in any way that is not consistent with label directions and precautions is illegal. It may also be ineffective and dangerous. The basic steps in reducing pesticide risks are:

—choose the form of pesticide best suited to the target site and determine the pest to control.

—determine the right amount to purchase and use: do not assume that using more pesticide than the label recommends will do a better job, it won't.

—find the signal word—either danger, warning or caution on the pesticide label. The signal word tells how poisonous the product is to humans.

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