Herbicide Damage to Vegetable Plants

By Nebraska Extension Horticulture Educator Kathleen Cue, Dodge County

Twisting, curling, and cupping of leaves are often symptomatic of herbicide damage on vegetable plants. The culprits that most readily cause this type of damage include 2,4-D (used to kill broadleaf weeds in lawns and pastures), dicamba (lawn and crop broadleaf weeds) and picloram (pasture broadleaf weeds). These herbicides are plant growth regulators, killing weeds by stimulating excessive growth and exhausting the plant's carbohydrate reserves. When vegetable plants are exposed to smaller amounts of these herbicides, then distortion of growth results.

Since there is nothing that can be done to counter the effects of herbicide drift, it is helpful to know how herbicide damage occurs on desired plants. There are 4 possibilities:

Wind
The greater the wind speed, the higher the likelihood the herbicide's air-borne droplets will be carried onto desired plants. Spray when wind speed is less than 5 miles per hour and set the sprayer to a larger droplet size.

Volatilization
When temperatures surpass 85° F, herbicides can vaporize and these herbicide-carrying vapors will settle elsewhere. If temperatures are hot, spray in the cooler morning hours.

Sprayers
Insecticides applied through sprayers previously used to apply herbicides may have enough herbicide residue to carry over during the insecticide application. Instead, use separate sprayers for different applications and clearly mark the containers as to their use.

Lawn Clippings, Soil, Compost and Manure
Lawns or pastures treated with herbicides can be a problem when grass clippings, soil, compost, hay, and animal manure from these sites are used in gardens. Knowing the history of how these sites are managed will help determine if these materials can be used in the vegetable garden.

Herbicides moved via wind, volatilization and contaminated sprayers tend to be one-time incidences. As vegetable plants put on new growth, the leaves and stems will most likely be their normal shape and size, indicating that plants have outgrown the effects of the herbicide.

The damage to vegetable plants via herbicide-laden lawn clippings, soil, compost, hay, and manure is ongoing, particularly if picloram was used on the lawn or pasture. Consequently vegetable plants don't recover and should be removed.

The Extension Master Gardener horticulture helpline and open clinic hours are:
Mondays, 9:00 am to 12:00 noon, Washington County Extension, 402-426-9455
Tuesdays, 1:00 to 3:00 pm, Cuming County Extension, 402-372-6006
Wednesdays and Fridays, 9:00 am to 12:00 noon, Dodge County Extension, 402-727-2775