

## HERBICIDE INJURIES

Herbicide injuries in vineyards in Illinois and other grape growing areas are common. Herbicide drift from nearby small grain, corn, and soybean fields is common. Only injuries by 2,4-D, glyphosate, Dicamba, and Paraquat herbicides are discussed here.

### Symptoms

**2,4-D injury.** Symptoms caused by 2,4-D to grapevines are easily distinguished. The youngest terminal growth is most severely affected (Figure 1). Vines and leaf petioles are twisted. Leaf blades may be misshapen with closely packed, thick veins. If the injury is severe, growth will be retarded for several weeks.



*Figure 1. A grapevine shoot injured by 2,4-D. (Courtesy APS, A. N. Kasimatis).*

Affected vines may not produce normal growth for remainder of the season. Vines injured by 2,4-D also may delay fruit ripening. Cultivars vary in their tolerance of 2,4-D. Concord is one of the most susceptible, while some Vinifera cultivars are fairly tolerant to 2,4-D.

**Glyphosate.** Glyphosate injury shows up about two weeks after contact. New leaves are arrow-shaped and very rugose (Figure 2). Internodes of new shoots of new shoots may be shortened. Apical dominance may be broken, resulting in growth of numerous lateral shoots. Following year, early shoot growth is stunted, with severely strapped leaves.



*Figure 2. Grapevine shoots injured by glyphosate. (Courtesy APS, A. N. Kasimatis).*

**Dicamba.** Dicamba affected leaves are cupped and have a distinct marginal band of restricted growth (Figure 3). Enations are very frilly. Dicamba is not usually used in vineyards. Injury is commonly associated with drift.

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For further information contact **Mohammad Babadoost**, Extension Specialist in Fruit and Vegetable Pathology, Department of Crop Sciences, University of Illinois, at Urbana-Champaign. (Phone: 217-333-1523; email: [babadoos@illinois.edu](mailto:babadoos@illinois.edu)).

**Paraquat.** Injury of paraquat is generally results from contact. Chlorotic and necrotic spots develop on leaves (Figure 4). These spots may be confused with black rot symptoms. Injury is usually from vineyard application.



**Figure 4.** Paraquat injury on grape leaves. (Courtesy APS, A. N. Kasimatis).



**Figure 3.** A grapevine shoot injured by Dicamba. (Courtesy APS, A. N. Kasimatis).