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# Herbicide drift versus cold temperature injury

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# Herbicide drift versus cold temperature injury

## **Abstract**

Many trees, shrubs, and other landscape plants were damaged by the widespread frosts and below-freezing temperatures experienced during the first week of May. There will likely be situations where people suspect this damage to be caused by herbicides applied to adjacent corn and soybean fields. Frost injury normally appears as blackening or browning of newly emerged leaves or needles. Less severely damaged leaves may be malformed. Injury will usually be uniform around the entire plant.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Meteorology

# INTEGRATED CROP MANAGEMENT

## **Herbicide drift versus cold temperature injury**

Many trees, shrubs, and other landscape plants were damaged by the widespread frosts and below-freezing temperatures experienced during the first week of May. There will likely be situations where people suspect this damage to be caused by herbicides applied to adjacent corn and soybean fields. Frost injury normally appears as blackening or browning of newly emerged leaves or needles. Less severely damaged leaves may be malformed. Injury will usually be uniform around the entire plant. Less severely damaged leaves may be malformed. Susceptibility to frost varies widely among species and age of tissue, with expanding leaves more sensitive to damage than fully expanded leaves. Frost damage appears within a day or two of the frost event. Severely damaged leaves will quickly drop from the tree. Healthy trees will generate a new set of leaves to replace the frost-damaged ones.

Symptoms of herbicide injury vary widely with the specific product applied. Glyphosate and 2,4-D will primarily affect leaves that emerge following exposure. Symptoms usually will not be visible for at least a week after application. Symptoms usually involve leaf chlorosis and malformation rather than rapid necrosis. Leaf malformations involve irregular veination, strapping or cupping of leaves. Drift of atrazine may cause rapid foliar chlorosis and necrosis of leaves present at application. Individual lesions where spray droplets contact the foliage are often visible. Recent research in Illinois has shown that drift of acetamide herbicides onto oaks at the time of bud expansion can cause the damage known as oak tatters.

The pattern and timing of appearance of injury symptoms should allow determination of the source of injury. Plants in good condition prior to the cold temperatures should recover with no long-term impacts. The long-term effect of herbicide-drift injury varies with herbicide and quantity of drift. The majority of drift events involve a relatively low dose of herbicide and therefore should not threaten the future health of the plant.



*Marginal necrosis on green ash caused by freezing temperatures (Bob Hartzler).*



*Expanding needles on Douglas fir killed by cold temperatures (Bob Hartzler).*

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