



CMG GardenNotes #656

Herbicide Use Around Landscape Trees

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There are times when using pesticides around trees is necessary and it is important to understand how they can potentially affect tree health. The most common pesticides used around trees in the home landscape are herbicides.

How herbicides can damage trees

1. Direct “hits” to the canopy, suckers or trunk that contact live tissue.
2. Absorption through the root system, which can extend several times the width of the canopy and can be extensive. Depending on soil type, tree roots are generally located within the top 12” of soil. In compacted or mostly clay soils, more than half of tree roots can be located in the top six inches of the soil.
3. Drifting or volatilization (become a gas) with movement to sensitive tree tissue when conditions are too windy, too hot or when the relative humidity is low.

It is critical to read and follow all directions on the label of a pesticide product before using it. Reading the label in its entirety helps the homeowner determine if the product can cause damage to woody landscape plants. Some trees are more sensitive to certain herbicides than others.



Figure 1 Volatilization Injury to Ash Leaves

It is also important to understand the herbicide's mode of action (how it works). Some may be contact herbicides, some may be root absorbed and some may be systemic.

Table 1. Post-emergence Herbicides that are Safe to Use Around Trees

Class of Herbicide	Products	Mode of Action
Amino Acid inhibitors	<ul style="list-style-type: none"> • glyphosate (Roundup, Kleenup) 	Foliar (systemic), but can be mixed with sterilants
Burndown products (non-selective)	<ul style="list-style-type: none"> • Diquat • Essential oil herbicides • Glufosinate (Finale) • Horticultural vinegar (20%) • Pelargonic acid (soaps) (Scythe) 	Foliar (contact)
Phenoxys	<ul style="list-style-type: none"> • 2,4-D • Clethodim (Grass Out) (grasses only) • dichlorprop • Fluazifop (Grass B Gon) (grasses only) • MCPA • MCPP 	Foliar (systemic)

Table 2. Preemergence Herbicides Safe for Use Around Trees.

Chemical Name	Trade Name
Isoxaben	Gallery
Oryzalin and trifluralin	Snapshot
Oryzalin	Surflan
Prodiamine	Barricade
Trifluralin	Preen

Weed and grass growth at the base of the trees is one area where herbicides may be applied frequently. In this situation, consider using mulch, mowing, hand pulling the weeds and grass, using glyphosate or burndown products (i.e. horticultural vinegar). When using glyphosate, only apply to the weeds or grass and do not spray the trunk, suckers or exposed roots of trees. Pre-emergence weed control products may be used under trees in spring.

Figure 2 Accidental root absorption of herbicide applied to rock mulch.



Author: Dr. Alison O'Connor, Colorado State University Extension. Photos courtesy Mary Small and Alison O'Connor, Colorado State University Extension.

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Revised August 2017