

WALNUT TOXICITY

Black walnuts (*Juglans nigra* L.) make great shade trees and are highly valued for their tasty (and hard to crack) nut and high quality lumber. But as garden companions, they make bad neighbors!

What makes Black Walnuts bad for the garden? Black walnuts contain a chemical called “juglone” which can be toxic to other plants. This comes in contact with plants through roots or nut hulls and starts wilting the plant almost immediately which can eventually lead to the plant’s death. This walnut toxicity can extend an unbelievable 50-60’, and up to 80’, out from the trunk and continues to increase in area as the tree matures. Toxicity is also intensified by poor drainage and heavy compacted soil. All walnuts produce some juglone, as do other trees in the walnut family: bitternut and shagbark, hickory and pecan. However the amount of juglone produced is insignificant compared to the black walnut and the effect on other plants is minimal, if any.

Are all plants sensitive to juglone? Until recently not a lot of research had been done to test walnut toxicity, however several universities have been working on compiling a more thorough list of sensitive plants. Many factors can affect toxicity and it is important to remember that what might grow under one walnut tree might not grow under another. Juglone toxicity can also remain in the soil for years after a tree is removed, especially if the roots are not removed along with the tree.

What do I do? The best way to avoid problems is to plant as far away from the walnut tree as possible. If planting closer can’t be avoided, create raised beds to improve drainage which lessens the effects of juglone. You can also add screening to the planting holes to decrease contact with tree roots. And remember to clean your beds and be careful that nuts and debris from the black walnut tree don’t accumulate. And finally, choosing juglone tolerant plants will help your garden as well!

Can I compost Black Walnut leaves? Research has shown juglone can degrade in a compost pile in 2-4 weeks, however it should never be used around sensitive plants. If you do want to compost the leaves consider keeping them in a separate pile.



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8424 Farley	7036 Nieman	830 W Liberty Dr
913.642.6503	913.631.6121	816.781.0001

Plants Sensitive to Juglone

Perennials

Aquilegia (Columbine)
 Chrysanthemum (Some Varieties)
 Baptisia
 Lilium
 Narcissus (Daffodil Var)
 Peonies (Some Varieties)

Annuals

Nicotiana
 Petunias

Trees

Acer saccharinum
 Alnus glutinosa
 Betula (White Birch)
 Celtis occidentalis
 Malus (Crabapple)
 Picea abies
 Pinus mugo
 Pinus resinosa
 Pinus strobes
 Tilia heterophylla

Shrubs

Aronia
 Hydrangea
 Kalmia
 Ligustrum
 Lonicera
 Potentilla
 Syringa
 Taxus

Edibles

Apple
 Asparagus
 Blackberry
 Blueberry
 Cabbage
 Eggplant
 Peppers
 Potatoes
 Rhubarb
 Tomatoes

Plants Tolerant of Juglone

Trees & Shrubs

Acer palmatum
 Acer saccharum
 Asimina triloba (Paw Paw)
 Betula nigra
 Catalpa
 Cercis canadensis
 Cornus florida
 Daphne
 Euonymus
 Forsythia
 Gleditsia triacanthos
 Hibiscus syriacus
 Ilex
 Juniperus
 Kerria
 Koelreuteria paniculata
 Lonicera tartarica
 Parthenocissus quenequefolia
 Philadelphus
 Populus
 Prunus

 Pyrus

 Quercus

 Rosa multiflora

 Sambucus

 Thuja occidentalis

 Tsuga canadensis

 Viburnum

Bulbs

Glory of the Snow Crocus
 Spanish Bluebell
 Winter Aconite
 Snowdrop
 Hyacinth 'City of Harlem'
 Grape Hyacinth
 Narcissus (Daffodil Var)
 Siberial Squill
 Tulips (Some Varieties)

Annuals

Begonia (fibrous, tuberous)
 Calendula
 Impatiens
 Heavenly Blue Morning Glory
 Pansy
 Viola
 Zinnia

Edibles

Black Raspberry

 Jerusalem Artichoke

 Beans

 Carrots

 Corn

 Melons

 Onions

 Squash

Perennials

Ajuga
 Hollyhock
 Am Wood Anemone
 Jack-in-the-Pulpit
 Wild Ginger
 Astilbe
 Bellflower
 Turtlehead
 Claytonia
 Lily-of-the-Valley
 Dutchman's Breeches
 Bleeding Heart
 Leopard's Bane
 Crested Wood Fern
 Coneflower
 Sweet Woodruff
 Cranesbill Geranium
 Sneezeweed
 Common Daylily
 Hesperis
 Heuchera

Hosta (Some Varieties)
 Siberian Iris
 Monarda
 Sweet Cicely
 Primrose
 Sensitive Fern
 Cinnamon Fern
 Summer Phlox
 Creeping Phlox
 Mayapple
 Jacob's Ladder
 Solomon's Seal
 Lungwort
 Bloodroot Sedum
 Lamb's Ear
 Spiderwort
 Trillium
 Big Merrybells
 Periwinkle
 Viola



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