

Black Walnut and the Effects of Juglone

Juglone is the name of the chemical produced by the black walnut tree. The detrimental effects of juglone on neighboring plants may depend on soil and moisture conditions. Toxicity may persist for more than one year after a tree is removed. Roots can extend 16-18 m (50-60 ft) from the trunk and may affect vegetation that far way. Plants closer to the trunk may not be affected. Symptoms will appear when the walnut is 7-8 years old.

Perennials that seem to resist the effects of juglone

Anemone apennia (anemone)	Ophiopogon (Lily turf)
Arisaema triphyllum (jack in the pulpit)	Poa (blue grass)
Athyrium (lady fern)	
Bulbinopsis bulbosa	Podophyllum emodi (May apple)
Cyclamen	Polygonatum verticillatum.
Epimedium	(Solomon's seal)
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Erythronium (dog's tooth violet)	Polystichum (Christmas fern)
Gentiana asclepiadea	Primulas
Gentiana septemfida	Ranunculus ficaria (pilewort)
Helleborus cvs.	Solanum aviculare (nightshade)
Heuchera (coral bells)	Thalictrum (meadow rue)
Hosta cvs.	Tricyrtis hirta (toad lily)
Iris cvs.	Trifolium repens (white clover)
Lilium cvs.	Trillium
Matteucia struthioptens (ostrich fern)	Uvularia (beltwort)
Myosotis alpestris (forget me not)	Vinca minor (periwinkle)
Narcissus	

Shrubs and trees that seem to resist the effects of juglone.

Acer (maples)	Philadelphus (mock orange)
Carya (hickories)	Quercus (oak)
Euonymus alatus (burning bush)	Rosa (species)
Forsythia	Rubus occidentalis (black raspberry)
Juniperus Virginiana	Syringa (lilac)
Lonicera	Viburnum
Parthenocissus quinquefolia (Virginia creeper)	Vitis (grape)

Resistant annuals: impatiens, Rudbeckia, Salvia

Resistant vegetables: Lima beans, Snap beans. Beet, Sweet corn, Onion, Parsnip

Resistant bulb: Tulips, Crocus, Snowdrops. Grape hyacinth, Narcissus

Plants that are particularly susceptible to juglone include: Tomatoes, alfalfa, apple, pear, blackberry, blueberry, mountain laurel, azaleas, rhododendrons, potentilla fruticosa, red pine, white pine and other evergreens.

These plants occasionally show symptoms: Poverty grass (Danthorna), sweet peppers, Common lilac, Persian lilac (this may be a situation where soil conditions make a difference), viburnum, autumn crocus, peony, crab apple, magnolia, raspberry, peach, euonymus spp.

Source: Olga Piedrahita, "Black Walnut Toxicity", Ministry of Agriculture and Food Publication 84-050, Nov., 1984.
Grace Andrews, July 1997