

BLACK WALNUT
TOXICITY

Awareness of black walnut toxicity dates back at least to Roman times, when scientists noted a poisoning effect of walnut trees on “all” plants. Modern research has identified the chemical *juglone* and its mode of action. Plants adversely affected by being grown in association with black walnut exhibit symptoms such as yellowing foliage, wilting, and eventual death.

Plant Susceptibility and Tolerance

The lists below are not complete, but do represent species in the Grand River watershed which may be affected.

Susceptible

Vegetables: asparagus; cabbage; eggplant; peppers; potato; rhubarb; tomato.

Fruits: apple; blackberry; blueberry; pear.

Trees & Shrubs: black alder; basswood; white birch; ornamental cherries; red chokeberry; crabapple; hackberry; Amur honeysuckle; hydrangea; larch; lilac; magnolia; silver maple; mugo pine; red pine; scots pine; white pine; ; potentilla; privet; rhododendron; Norway spruce; viburnum (few); yew.

Herbaceous Plants: crocus; blue wild indigo; chrysanthemum (some); columbine; hydrangea; lily; narcissus (some); peony (some); petunia; tobacco.

Field Crops: alfalfa; crimson clover; tobacco.

Tolerant

Vegetables: lima bean; snap bean; beet; carrot; sweet corn; melon; onion; parsnip; squash.

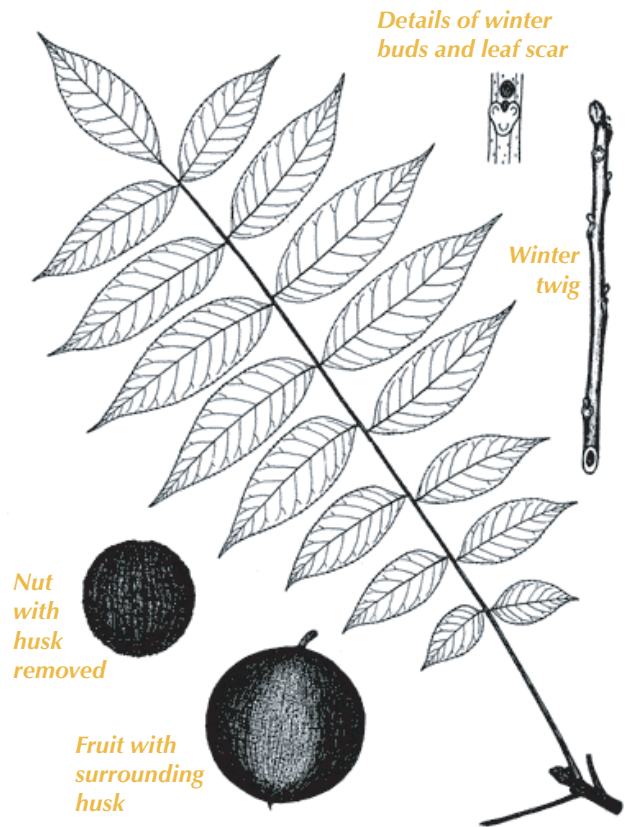
Fruits: black raspberry; cherry.

Trees & Shrubs: red cedar; catalpa; crabapple; elm; hawthorn; hemlock; hickory; honeysuckle; junipers; black locust; maple (most); oak; pawpaw; redbud; sycamore.

Herbaceous Plants: bergamot; daisy; day lily; fern; hawkweed; hyacinth; mayapple; morning glory; phlox; poison ivy; primrose; Solomon's-seal; woodruff; trillium.

Field Crops: soybean; timothy; wheat; white clover.

*Source: OMAF Infosheet on Walnut Toxicity by
Todd Leuty – Agroforestry Specialist*



The largest amounts of juglone occur in the walnut's buds, nut shells, and roots. The concentration found in the nut shells can even affect sensitive plants just by being buried in the garden by industrious squirrels. However, since small amounts of juglone are released by leaves, stems and live roots, juglone-sensitive plants may show signs of toxicity symptoms anywhere within the area of root growth of a black walnut tree.

Other trees closely related to black walnut also produce juglone, including butternut, shagbark hickory and bitternut hickory. However, all produce such limited quantities compared to the black walnut that toxicity to other plants is rarely observed.

