

POISON IVY

(Rhus radicans)

SEEDLING DESCRIPTION

Poison ivy shoots emerge from the overwintering parts of the plant at about the time lilacs begin to bloom. Smooth, slender stems grow from buds on the roots and vines. The shoots are not true seedlings, so they lack cotyledons. The tightly folded tips are only ½ inch (12 mm) long and soon open into three-leaflet leaves. Leaves are bright, shiny green, and often tinged with red.

BIOLOGY

Poison ivy belongs to the Cashew family (Anacardiaceae). It grows as a vine — trailing along the ground and forming a loose mat, covering fenceposts and reaching the tops of trees as high as 100 feet (30 m). Vines grow as much as 20 feet (6 m) in one season, and most of this growth takes place before flowering. In full sun, poison ivy takes on a shrub form and grows 1 to 4 feet (30 to 120 cm) tall.

A perennial, poison ivy propagates by seed, by leafy shoots sent up from the roots, and by stems that can take root where they touch the soil. The root system may reach 20 feet horizontally but rarely grows deeper than 1 foot.

The stem is woody, and the trunks of old vines may be 6 inches (15 cm) thick. Stems have tough, stringy air roots by which the vines cling to and climb up trees and rock walls.

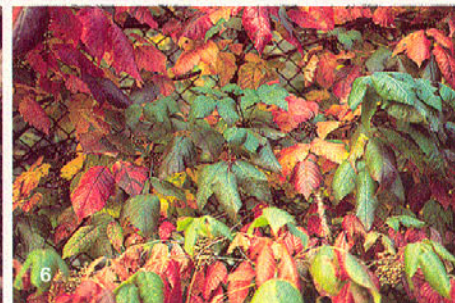
Poison ivy has compound leaves, so that what looks like three leaves is actually a single leaf consisting of three individual leaflets. The leaves are alternately arranged along the main stem and are attached by a central leafstalk or petiole that grows up to 4 inches (10 cm) long. The two side leaflets are attached by short stalks; the central leaflet, by a longer one. The leaflets are bright or deep green in the spring and summer and turn brilliant red in the fall. They are usually smooth and glossy but may be slightly hairy or dull. The leaf surfaces frequently have a blistered appearance.

Leaflets are oval or elliptical, 1 to 6 inches (2.5 to 15 cm) long, and about half as wide. Leaf tips are always pointed and leaf margins are hairless, but leaf shape varies greatly depending on the plant. Edges may be smooth, wavy, or have one or several lobes. Regardless of shape, poison ivy leaflets are always arranged in threes. To avoid poison ivy, the rule of the woods is “Leaflets three, let it be.”

Male and female flowers are borne on separate plants. Flowers emerge in spring and form

clusters 2 to 5 inches (5 to 12 cm) long, attached where the leafstalk meets the stem. Individual flowers are greenish white and only ⅛ to ¼ inch (3 to 6 mm) across. The male flowers have five yellow anthers and are slightly more conspicuous than the female blossoms. When bees visit the blossoms in search of pollen and nectar, they fertilize the flowers.

1. Young leaves emerge from overwintering vines.
2. Poison ivy often climbs trees to reach the light.
3. Air roots enable stems to cling to bare rock.
4. Leaves are alternately arranged along the stem.
5. Leaflets may be lobed or have smooth margins.
6. In fall, leaves turn red and berries turn tan.



After fertilization, clusters of small green berries develop. The berries soon turn tan and, by late summer, become hard and waxy. Each berry is about 1/8 inch in diameter and has a scaly outer coat that is segmented like an orange. Berries remain on the plant all winter, providing valuable food for birds, which digest the fleshy outer part and excrete the seeds undamaged. Seeds remain viable up to six years and germinate in mid- to late spring.

SIMILAR SPECIES

Poison sumac (*R. vernix*) is a woody shrub that grows in swampy areas. Flowers and berries resemble those of poison ivy, but the compound leaves contain seven to thirteen leaflets rather than three. The leaflets are oval, unlobed, and often turn upward.

The harmless boxelder (*Acer negundo*) often grows in shrubby patches, and some people mistake it for poison ivy because of its three-leaflet foliage. However, since boxelder is a maple, its leaves are attached opposite each other along the main stems rather than alternately like poison ivy.

Virginia creeper (*Parthenocissus quinquefolia*) is a creeping vine with five leaflets arranged like outspread fingers, not to be confused with the three-leaflet leaves of poison ivy.

NATURAL HISTORY

Poison ivy is a native of North America, and its natural range includes all of the United States except for the western deserts. It grows in Canada, south into Central America, throughout Japan and China, and has somehow reached Bermuda and the Bahamas. Great Britain has so far escaped the wrath of poison ivy.

Poison ivy grows in any type of ground except for low peaty soils. It prefers dry woods and thickets and rich alluvial woodlands, especially where the soil has been disturbed. Common on flood plains, sand dunes, bottomland, and along lake shores, it also grows along roadsides and trails, power line clearings, and especially under telephone wires and along fencerows where birds perch.

Poison ivy is often a problem in recreational areas and hay fields. Although the weedy growth itself can be a nuisance, the worst characteristic of poison ivy is the oil, called urushiol, which exists in all parts of the plant except for the pollen and the inner wood. The oil is concentrated in the plant's resin, which is at first milky or clear but turns black and tarry on contact with air. Research indicates that the plant must be broken in some way in order for the oil to come in contact with skin. Even the chewing of tiny insects can puncture the leaves and release the oil.

The oil is nonvolatile (does not evaporate), so a rash cannot be contracted "through thin air." However, dust and ash carry droplets of

the oil, and breathing the smoke of burning poison ivy can have disastrous consequences. The oil is toxic all year and can be transferred to people by touching contaminated clothing, pets, tools, or firewood, by pulling up plants after the leaves have died, or even by shaking the hand of someone who has recently touched poison ivy leaves. The severity of reaction varies with the time of year, condition of the plant, and individual sensitivity.

All people have a natural immunity to poison ivy. In sensitive people (about half the population), this immunity is broken by the first contact with the oil. First contact does not produce a reaction, but causes antibodies to form in the blood. The reaction occurs with the next contact and results in dermatitis, ranging from a mild, itchy, red rash to severe blisters that look like burns. The blisters exude fluid and may become infected, but the fluid itself does not spread the rash. Severe reactions have led to death. A harmful misconception is the "old woodsman's tale" that eating a leaf of poison ivy can produce immunity. In fact, eating a poison ivy leaf can cause death.

Sensitivity can develop at any age after any number of contacts. Adults who have never suffered a reaction and who try to prove their immunity by rubbing themselves with leaves may be unhappily surprised to learn that they are no longer immune.

Once established, the rash must run its course and will usually disappear in several weeks' time. Cortisone skin creams help reduce swelling and itching, as do solutions of potassium permanganate, baking soda, or Epsom salts. Soaking in very hot water also gives relief. Tests show that the reaction between the oil and skin is immediate, but the old-time advice to quickly shower (not bathe) with strong, alkaline, non-oily soap may remove excess poison that has not yet had time to react.

Shortly before or after contact with poison ivy, wiping the skin with a 5 percent solution of ferric chloride (diluted with half alcohol and half water) may prevent an outbreak. Soap lather allowed to dry on the skin provides a preventive barrier against the oil. Wherever poison ivy grows, one is likely to find the wild touch-me-not or jewelweed (*Impatiens capensis*) growing nearby. The juice of this plant seems to nullify the effect of the oil and can prevent a rash.

Despite the misery it can cause, poison ivy is not all bad. It gives good erosion control, and the Dutch plant it to stabilize earthen dykes. Its nectar produces a light, high-quality honey that is completely non-toxic. Livestock can eat the foliage without suffering ill effects. The seeds remain on the vine all winter, providing valuable feed for many species of songbirds, including warblers, thrushes, bluebirds, wren-tits, and flickers. Deer, black bears, muskrats, and rabbits eat the fruit, stems, and leaves. Vines growing along the ground provide thick pro-

tective cover for small mammals. Well-labeled plantings of poison ivy may help to protect natural habitats that are sensitive to human traffic, such as breeding areas of ground-nesting birds.

Poison ivy is closely related to the Oriental lacquer tree (*R. verniciflua*), from which a black gummy resin is collected and used to produce the black lacquerware, "urushi," of Japan and China. Sensitive people have developed dermatitis from handling lacquerware bowls or refinishing urushi furniture.

CONTROL

Since poison ivy does not survive cultivation, it is easy to control in conventionally grown field crops. However, control is becoming a problem in many no-till fields. Chemical herbicides for broadleaved weeds are effective if treatment is repeated for two years. In landscaped and other noncultivated areas, such as hay fields and parks, several options are open. Mechanical controls include mowing, girdling trunks (removing a strip of bark all the way around), and hard grazing, especially with goats and sheep.

Several systemic herbicides are effective in controlling poison ivy. A solution of ammonium sulfamate is painted on freshly cut stumps, or axe cuts are made in the trunk and filled with the crystals. The chemical breaks down into nitrogen and sulphur, both soil nutrients. The breakdown takes several months, during which time no vegetation will grow in soil that has absorbed the herbicide.

Glyphosate will kill or injure any plant, whether grassy or broadleaved, having treated foliage. Within a week of treatment, other plantings may be made, because contact with the soil inactivates glyphosate.

Dicamba is effective on poison ivy and does not injure grass. However, spray drift may damage nearby trees and shrubs. In addition, because dicamba remains active in the soil, it may harm broadleaved plants whose roots are growing in the treated area.

For specific recommendations, consult your county Extension agent or the most recent *Weed Control Manual and Herbicide Guide*, available through Meister Publishing Company, 37841 Euclid Avenue, Willoughby, Ohio 44094. Follow label instructions for all herbicides and observe restrictions on grazing and harvesting procedures.

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