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EXTENSION

WEED WIZARD

Controlling Poison Ivy in the Landscape

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Poison ivy (*Toxicodendron radicans*; formerly named *Rhus radicans*) is a common poisonous plant in Georgia. The taxonomy of the *Toxicodendron* species was updated in 2024 (Flora of North America, Vol. 13, p. 58–63). There are now five subspecies of *Toxicodendron radicans*: *radicans*, *divaricatum*, *rydbergii*, *eximium*, and *verrucosum*.

The subspecies separations are based on leaf shape. These leaf shapes and textures are different and can be confusing to identify. However, the widest distribution is with the two subspecies *radicans* (not much in the Western U.S.) and *rydbergii* (not much in the Southern U.S.). All the subspecies of poison ivy produce skin-irritating urushiol oil. The preferred habitat of poison ivy is moist, deciduous forests and wooded areas. However, it is also found in pastures, fence rows, ornamental plantings, and various types of noncropland areas.

There are two species of poison oak: Eastern poison oak (*Toxicodendron pubescens*) and Western poison oak (*Toxicodendron diversilobum*), and one species of poison sumac (*Toxicodendron vernix*). Both poison oak and poison sumac are not encountered as much as poison ivy.

Chemicals (urushiols and others) found in special internal cannel systems of poison ivy, oak, and sumac cause contact dermatitis (redness, rash, blisters, itching) in hundreds of thousands of people in the United States every year. The American Medical Association estimates that every year in the United States, poison ivy, oak, and sumac cause more cases of contact dermatitis than all other plant, household, and industrial chemicals combined.

Every person who works outdoors with plants or participates in hiking, camping, or other outdoor activities should be able to identify poison ivy. Failure to do so can lead to severe allergic reactions.

Biology of Poison Ivy

Poison ivy is a woody perennial that belongs to the Cashew (*Anacardiaceae*) family. It may grow as a small shrub or as a high-climbing vine with aerial rootlets on trees, fence rows, and buildings (Figure 1). In contrast, poison oak and poison sumac usually grow as small shrubs.

Poison ivy reproduces by creeping roots and seed. Leafy shoots can arise from the creeping roots several yards away from the parent plant. There are many subspecies of poison ivy, and leaves can be highly variable in shape, color, and thickness even on the same plant or plants near each other.

The leaves of poison ivy are alternately arranged on the stem. Each compound leaf consists of three bright green, shiny leaflets (Figure 2). Leaflets are elliptic to egg-shaped and have either smooth, toothed, or lobed margins. The upper leaf surface is smooth, or lacks hair, while hairs are commonly found on the veins of the underside of the leaf.

People may incorrectly identify poison ivy when observing a poison ivy plant with an unusual leaf shape. However, the old saying "Leaflets three, let it be" should always be followed. While this approach may cause unjust suspicion of a harmless plant, one must consider their sensitivity to poison ivy.

Left: Figure 1. Poison ivy vine (*Toxicodendron radicans*) with aerial rootlets on trees.

Right: Figure 2. Poison ivy (*Toxicodendron radicans*) leaf with three leaflets.

A plant found in Georgia that is often confused with poison ivy is box elder (*Acer negundo*; Figure 3). Seedlings of box elder have a leaf with three leaflets that resemble poison ivy. Young box elder plants can be distinguished from poison ivy in that seedlings have opposite leaves, while poison ivy has alternate leaves. Virginia creeper (*Parthenocissus quinquefolia*; Figure 4), a viny plant similar in growth habit and appearance, may also be confused with poison ivy. However, Virginia creeper has compound, palmate leaves with five leaflets. Occasionally, Virginia creeper plants have three to seven leaflets.

Left: Figure 3. Box elder (*Acer negundo*). Leaves are often confused with poison ivy.
Right: Figure 4. Virginia creeper (*Parthenocissus quinquefolia*) foliage. Leaves are often confused with poison ivy.

Flowers of poison ivy are arranged on slender stalks. Each flower is small and has five yellowish-green petals. The fruit of poison ivy is grayish-white in color, nearly round in shape, about 3/16 in. in diameter and contains a single seed. Over 55 species of birds are known to consume poison ivy fruits.

Poisonous Principles of Poison Ivy

Symptoms of contact with poison ivy include skin inflammation and blistering. All parts (stems, leaves, roots, flowers, and fruits) are poisonous at all times of the year. A toxic, or sensitizing, oily compound (urushiol) is contained in specialized resin ducts in the various plant parts. The toxin is not normally found on the outside surface of intact leaves and stems. However, the toxin is quickly exuded if the leaves or stems are crushed, bruised, brushed, chewed by insects, or otherwise damaged.

Humans are commonly exposed as they brush against the plant and bruise the leaves. Exposure also occurs when sensitive people contact the toxin by touching equipment, clothing, or animals that have been in contact with poison ivy. Dogs and cats frequently transfer the toxin to people. Additionally, the toxin can be carried on soot particles in smoke from burning poison ivy and cause severe allergic reactions.

First Aid for Poison Ivy

Sensitivity to poison ivy varies among individuals. Some are extremely allergic; others are not as sensitive. Following contact with the poison ivy toxin, 12 to 48 hr usually elapse before symptoms occur. However, with some individuals, symptoms may not appear for several days.

If contact with poison ivy is suspected, wash the skin with cold water as soon as possible. If done within 5 min, cold water may keep the urushiol from contacting your skin. Within the first 30 min, soap and water may be used. If contact is suspected, clothes should be washed with detergent. Clothes can transfer urushiol to furniture and other household items.

There are several products on the market that can prevent or reduce the formation of allergic reactions if used immediately after suspected exposure (e.g., Tecnu® and Ivy-X™). Information is available on the internet about these products and might be good to keep on hand if you are an active gardener or often outdoors.

Only the oily toxin from poison ivy can spread the rash. The fluid contained in blisters is nonallergenic.

Numerous topical ointments and lotions are available for treating the symptoms of poison ivy. A physician or pharmacist should be consulted for appropriate treatment.

Cultural Control Methods

Poison ivy will not tolerate repeated tillage, cutting, or mowing. Continually clipping the plant at or near the ground level will eventually control poison ivy. However, several clippings during the year and for several years are often necessary to control poison ivy.

Poison ivy shoots commonly encroach from wooded areas into newly established lawns. Herbicide use is not usually necessary as frequent mowing will eliminate the plant from the lawn. To prevent future encroachment into the lawn, poison ivy should be controlled in the adjacent wooded area.

Digging, or "grubbing out" poison ivy plants and roots can be used as a control method in small beds of landscape ornamentals. Water impermeable gloves should always be worn when handling poison ivy plants (including the roots) to prevent poisoning.

How to Control Poison Ivy With Herbicides

Numerous herbicides are available for control of poison ivy. Before any herbicide is used, read all label directions. Because poison ivy has an extensive root system, multiple applications of systemic herbicides are usually necessary for effective control. Repeat applications should be made at the full-leaf stage of growth.

Glyphosate

Glyphosate is the active herbicidal ingredient in Roundup. There are also numerous generic formulations of glyphosate sold in retail outlets. Glyphosate is applied directly to the foliage of poison ivy. The best control is achieved when glyphosate is applied on a warm, sunny day when plants are actively growing.

Glyphosate requires a 1-hr rain-free period for maximum activity. Glyphosate is a systemic herbicide and is translocated throughout the leaves, stems, and roots of plants. The best control with glyphosate occurs when it is applied to poison ivy plants in the flower or fruit stage of growth. Applications at earlier stages of growth are not as effective. However, it may not be practical in many situations to delay the application until poison ivy is in the flower or fruit stage of growth. Flowering generally occurs in the early summer months in Georgia.

Glyphosate can cause severe injury to desirable plants if the spray droplet particles contact their foliage or immature green bark. Glyphosate should not be applied on windy days. Coarse sprays with large spray droplets rather than fine mist applications should be used to minimize drift. Glyphosate may be used along fence rows, as a spot treatment in turfgrasses and pastures, and as directed treatment in ornamentals, and fruit and nut trees.

In situations where poison ivy has grown into the canopy of large trees, up walls, or along other vertical structures, glyphosate can be used in combination with clipping the vine. In this method, the poison ivy vines are cut 2 to 3 ft above the soil surface. This will kill the portions of poison ivy above the cut. The remaining vine stems can be treated (painted or sprayed) with concentrated glyphosate. A glyphosate concentrate of at least 41% should be used to treat the cut portion of this stem. It is recommended to paint the fresh cut with full strength glyphposate solution or diluting it by 50% with water. This treatment should occur within 48 hr of cutting the vine.

If any regrowth is seen, it should be treated with a 5% or 10% treatment solution. Again, it is recommended to use at least a 41% glyphosate solution to make this treatment solution. That would be approximately 6 to 12 oz of a 41% glyphosate solution to 1 gallon of water.

Foliage, once fully expanded, should be sprayed until runoff. If poison ivy is growing on trees, one should not be concerned if treatment is occurring on large trees with mature, course brown bark, as no injury should occur to the tree. If inspection of the bark reveals green tissue, as is commonly found on deciduous trees that have been planted for 1 to 2 years, do not spray glyphosate on the bark of the tree.

2,4-D

2,4-D is either sold alone or in mixtures with herbicides such as MCPP, dicamba, and triclopyr. 2,4-D is only marginally effective in controlling poison ivy. Products that contain 2,4-D in combination with dicamba and triclopyr will provide better poison ivy control than 2,4-D alone. 2,4-D in combination with dicamba (Banvel) or triclopyr (numerous trade names) will usually provide better control than the herbicides that contain just 2,4-D. To get the best control of poison ivy, 2,4-D and 2,4-D mixtures should be applied when leaves are fully expanded. Repeat treatments can be used to control new flushes of growth.

2,4-D and 2,4-D mixtures will not injure most turfgrasses and other grasses. However, numerous broadleaf plants, e.g. ornamentals, fruit trees, muscadines, grapes, cotton, tobacco, and many vegetables, are highly sensitive to 2,4-D. Spray drift of 2,4-D can severely injure these plants. 2,4-D drift injury can be minimized by using coarse sprays and by staying several feet away from sensitive plants.

2,4-D products are formulated as either amine salts or esters. Ester formulations of 2,4-D are subject to vapor drift, especially at high air temperatures (> 80 °F.). Volatilization or vapor drift of 2,4-D ester herbicides can injure sensitive plants at considerable distances from the original site of application. Ester formulations should not be used during the warm months of the year when close to sensitive plants. Follow labeled directions for use of products on leaves or cut stumps of poison ivy.

Triclopyr

Triclopyr is a highly effective postemergence herbicide for the control of poison ivy as well as numerous other woody vines. This herbicide is sold under a wide variety of trade names for use in commercial agriculture, forestry, and noncropland areas. Most of these products are not sold in lawn and garden stores and other retail outlets. However, Ortho markets a brand name of triclopyr called Brush-B-Gon in numerous retail outlets. For most homeowners, Brush-B-Gon would be the preferred formulation of triclopyr.

Similar to 2,4-D, triclopyr should be applied to poison ivy when leaves are fully expanded on a warm, sunny day. Follow labeled directions for use of the product on actively growing leaves or cut stumps of poison ivy. Triclopyr can also injure desirable broadleaf plants by spray droplet drift, and use should be avoided on windy days.

Unlike glyphosate, triclopyr solutions should not be sprayed on the mature bark of trees. Triclopyr can be absorbed through the bark of some tree species and cause severe injury. Triclopyr (Brush-B-Gon) is recommended for use around homes, fences, and in nongarden areas. It can be used near ornamentals, but do not spray when wind conditions favor spray drift.

Triclopyr is commonly used to prevent the regrowth of sprouts from tree stumps. When used in this fashion, undiluted triclopyr is "painted" on the sides and cut surface of the freshly cut tree stump. This "cut stump" method can be adapted to control poison ivy. Simply clip the poison ivy vine near the soil surface and "paint" the freshly cut surface with undiluted triclopyr. This method is useful for the control of small infestations of poison ivy in areas that are difficult or not practical to spray. When using the "cut stump" method, some regrowth of poison ivy may occur and repeat "cut stump" applications can be made.

ATTENTION! Pesticide Precautions

1. Observe all directions, restrictions and precautions on pesticide labels. It is dangerous, wasteful, and illegal to do otherwise.

2. Store all pesticides in original containers with labels intact and behind locked doors. KEEP PESTICIDES OUT OF THE REACH OF CHILDREN.

3. Use pesticides at the correct label dosage and intervals to avoid illegal residues or injury to plants and animals.

4. Apply pesticides carefully to avoid drift or contamination of nontarget areas.

5. Surplus pesticides and containers should be disposed of in accordance with label instructions and state laws so that contamination of water and other hazards will not result.

6. Follow directions on the pesticide label regarding restrictions as required by state or federal laws and regulations.

7. Avoid any action that may threaten an endangered species or its habitat. Your county Extension agent can inform you of endangered species in your area, help you identify them, and through the Fish and Wildlife Service Field Office identify actions that may threaten endangered species or their habitat.

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