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*Purdue Extension Weed Science*

## The “Don’t Touch Me Plants”

There are several plants that can cause irritation when touched. These are also considered toxic plants and should not be ingested. The most common of these is the well-known poison ivy, but it is a bit of a challenge for most people to tell the differences between poison ivy and

poison oak. If you spend time in the woods or gardening in the yard, it would be beneficial to know which plants are the “don’t touch me plants.” This article looks at several of the plants in Indiana that can produce problems when touched. Some of you may already have experienced the itch of poison ivy or the burning and welting of stinging nettle.

### Poison Ivy and Poison Oak

The telltale sign that you could be looking at poison ivy (*Toxicodendron radicans* - eastern poison ivy or *T. rydbergii* - western poison ivy, Indiana has both) or Atlantic poison oak (*T. pubescens*) is the characteristic trifoliate leaf. The two opposite leaflets will have very little or no petiole and the terminal leaflet will be extended from the two opposite leaflets (Figure 1 and 2). There are other plants that might have a similar leaf<sup>1</sup>, but it might be wise to treat everything with this leaf arrangement as potential poison ivy. According to the USDA plant database, poison oak has not been reported in Indiana as of yet, but it has been reported in Illinois<sup>2</sup>. However, although the USDA has not officially confirmed poison oak in Indiana, I have received word-of-mouth reports that it is present.

Poison ivy can grow as a vine or low shrub. It will climb trees, power line poles, fences or just about anything available to climb. Poison oak is a shrub with hairy leaves that have an oak-leaf appearance, hence the name. Both plants produce greenish-white berries which birds eat, spreading the seed. In the winter time, the berries still have the oils that cause dermatitis so they need to be avoided also. Decreases in cases of poison ivy in the winter time is most likely due to the extra clothing worn to fight the cold.

The compound that causes all the trouble is urushiol oil or toxicodendrol<sup>3</sup>. Although sensitivity to urushiol oil can be different for different individuals, very small amounts are generally required to cause a rash. Sensitivity to the oils can also change as a person gets older. Although I have spent a fair amount of time in the woods and have come in contact with poison ivy, I have yet to experience the displeasure of the rash, yet this may change one day. Other people that I know are often fond of saying, “If I even see the stuff I break out in a rash.”

The oils can last for a long time on surfaces. The use of water alone will not remove the oils and in some cases water alone can spread the oils. To remove the oils wash skin or clothes with an alkaloid soap. Alcohol will also remove oils<sup>2</sup>. There have been many proposed treatments of poison ivy dermatitis. In the “Peterson Field Guide to Edible Wild Plants” it mentions that washing with Jewelweed (*Impatiens capensis*) juice can be used as a home

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Figure 1. Poison ivy trifoliate leaf. Two leaflets close to the rachis with one at the tip of the rachis. Photo Source: M. Ross, Purdue University



Figure 2. Poison oak trifoliate. Photo Source: Robert H. Mohlenbrock. 1991. *Southern wetland flora: Field office guide to plant species*. South National Technical Center, Fort Worth, TX.

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remedy<sup>4</sup>. A 1902 report in *The American Journal of Nursing*, it mentions, “...bathing the affected parts with a solution of sugar of lead (lead acetate), with the addition of laudanum<sup>5</sup>.” I can see where the laudanum (an opiate) would reduce the discomfort, but I would not attempt this at home. The same report mentions turning to a solution of water, alcohol, witch-hazel, and ammonia<sup>5</sup>.

## Poison Sumac

A shrub or small tree, poison sumac (*T. vernix*) can be more toxic than poison ivy<sup>4</sup> (Figure 3). Plants can grow from six to 20 feet tall. The compound leaves have seven to 13 leaflets with smooth margins and the leaflets are elliptic to oblong. Flowers are green and approximately 1/16 of an inch in diameter.

There are other sumacs in the state of Indiana that are not toxic. Although poison sumac has been moved to the *Toxicodendron* genus, the other sumacs remain in the *Rhus* genus. The USDA plant database reports fragrant, winged, smooth, Northern smooth, and staghorn sumac in Indiana and the surrounding states<sup>2</sup>. These are often used for landscaping. The number of leaflets are often the same between the toxic poison sumac and its nontoxic counter parts. One way to help identify between the nontoxic sumacs and poison sumac is that the berries of poison sumac are hairless, drooping, and are green when immature, but then turn grey-white as they mature. The berries of other non-toxic sumacs often have hairs on the berries and are red to crimson<sup>6</sup>. Another way poison sumac can be differentiated from the non-toxic sumacs by carefully looking at the leaves. Poison sumac leaflets are entire and do not have a winged rachis. Non-toxic sumacs either have serrations on the margins of the leaves, like staghorn sumac (*Rhus hirta*) and smooth sumac (*R. glabra*) or have entire leaves but with a winged rachis, as in winged sumac (*R. copallina*).



**Figure 3. Poison sumac.** Photo Source: Ted Bodner in James H. Miller and Karl V. Miller. 2005. *Forest plants of the southeast and their wildlife uses*. University of Georgia Press., Athens.

Information listed here is based on research and outreach extension programming at Purdue University and elsewhere.

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## Poison Hemlock

At first glance poison hemlock (*Conium maculatum*) may appear like wild carrot (*Daucus carota*) or some kind of giant parsley, but it is not a mistake that you should make (Figure 4). Although poison hemlock is more known for poisonings as a result of ingesting, for example the death of the Greek philosopher Socrates<sup>7,8</sup>, the plant’s natural oils may absorb through the skin. So if you find yourself hand pulling poison hemlock, it would be a good idea to wear gloves.

Both poison hemlock and wild carrot belong to the parsley family (*Apiaceae*). Both have the characteristic umbel inflorescence of small white flowers and leaves that expand at the bases sheathing the stems. You can tell poison hemlock apart from its benign cousin, wild carrot, by the presence of purple blotches on the stem. The leaves of poison hemlock are also sharper in detail compared to wild carrot.



**Figure 4. Poison Hemlock in corn stubble.** Photo Source: Glenn Nice Purdue University

## Cow Parsnip and Giant Hogweed

Also members of the parsley family, both these plants can cause a reaction to sunlight called phytophotodermatitis. However, the reaction from giant hogweed (*Heracleum mantegazzianum*) is more severe than that of cow parsnip (*H. maximum*), resulting in large blisters and red to purple rashes that can scar. Giant hogweed is NOT common in Indiana; only two plants have been reported to date as of writing this article. However, it has been reported in 11 counties in Michigan<sup>2</sup>. Cow parsnip, although not that common, can be found in Indiana and is often confused with giant hogweed (Figure 5). Reactions to both these two plants are dependent on an individual’s sensitivity, but they both require ultraviolet light to cause damage. The compounds found in these plants that cause this reaction are suspected to be used in these plants as protection against UV light because of their ability to absorb UV light<sup>9</sup>.

The first indication that you are looking at giant hogweed is the plants sheer stature. Giant hogweed can reach a height of 15 feet tall. Its stems can be up to 4 inches in diameter, and its leaves can be 5 feet broad. Even the inflorescence is large, up to 2.5 feet wide. Cow parsnip can reach up to 8 feet, but are more commonly 4 to 5 feet tall<sup>10,11</sup>. The stem has a diameter of at most 2 inches and leaves can get up to 2.5 feet broad. Although cow parsnip has lobed leaves, they are not as detailed and deeply loped as giant hogweed’s. The stems of cow parsnip are green or light purple and have fine hairs giving it a fuzzy appearance, but giant hogweed has coarse hairs and purple blotches. These hairs are most noticeable where they circle the stem at the nodes.

## Stinging Nettle

Stinging nettle (*Urtica dioica* L.) is a very common sight in the woods, on the banks of rivers, and in waste areas in Indiana (Figure 6). Touching stinging nettle can produce itching and welts; walking though stinging nettle with shorts or sandals is not advised. Stinging nettle is armed with small hairs that, when touched, can inject a cocktail of histamine, serotonin, acetylcholine and formic acid<sup>11</sup> (Figure 6). Histamine causes an immune reaction in the body, serotonin and acetylcholine are neural transmitters and formic acid is the same compound involved in bee stings and fire ant bites.

Stinging nettle often grows in patches and can become quite tall, growing up to 5 feet, but I generally see it between 2 to 3 feet tall. Stems are unbranched and leaves are opposite, egg shaped and with serrated margins. Stinging nettle can be confused with a couple other plants in Indiana, such as white snakeroot (*Ageratina altissima* or *Eupatorium rugosum*), Canadian clearweed (*Pilea pumila*), and smallspike false nettle (*Boehmeria cylindrical*). To identify stinging nettle, look carefully at the stems to see if the obvious stinging hairs are present.



Figure 6. Left, stinging nettle and right, stinging nettle’s hollow hairs. Picture source: left, Uwe H. Friese, Bremerhaven 2003. Right, Donar Reiskoffer. As seen on Wikipedia.com.

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Figure 5. Cow parsnip top and Giant hogweed bottom. The two plants can be easily confused. The identification is in the stature and details. Photo Source: Top, Gary A. Monroe. No. USA, CA, Marin Co., Point Reyes National Seashore, as seen on USDA Plant Database and bottom Terry English, USDA APHIS PPQ, Bugwood.org

## Spurges

The plants in North America that belong to the group of plants called the spurges (Euphorbia spp. or Chamaesyce spp.) often have a milky sap that is an acrid latex compound. This sap is a mild skin irritant, but is also poisonous and is considered a carcinogenic<sup>12,13,14</sup>. Like cow parsnip and giant hogweed above, exposure to the sun induces irritation. There are many plants that belong to this group. They include such notables as poinsettia, prostrate spurge, spotted spurge, and leafy spurge. This is a large group of plants that includes several species, but a common uniting feature is a three chambered ovary leading to a three lobed capsule<sup>6</sup> (Figure 7). If you have ever inspected a Christmas poinsettia you would see these capsules nestled in the colorful bracts of the plant.

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**Figure 7. Three chambered capsule.**  
**Photo Source: Richard A. Casagrande,**  
**University of Rhode Island, Bugwood.**  
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