

## Garden Update

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### When Plants Defend Themselves

There is a great line in the first Jurassic Park movie when Ellie, the character played by Laura Dern, says, and I'm paraphrasing here, "Plants can be pretty but will defend themselves if threatened." Assuredly, not all plants are sweet and accommodating. Of course, there are plants that throw in their lot with humans, giving people fruits and vegetables for food, fiber for textiles, and medicines for health. We manipulate plants to get what we need, and we aid their survival by saving seed and propagating plants. It begs the question, though, are we manipulating plants or are they manipulating us?

Poison ivy (*Toxicodendron rydbergii*) is a great example of a plant that defends itself. Urushiol, the highly viscous oil found in poison ivy, causes contact dermatitis. It gives people a rash, in some cases a quite severe one. Anything with fur is oblivious to the effects of poison ivy, but pets can get it on their fur and transfer urushiol to humans. Deer will eat leaves and birds will eat the fruits of poison ivy with no ill effects. Never burn any part of poison ivy because the smoke can carry the toxin to lungs.

Rhubarb (*Rheum x cultorum*) are plants that giveth and taketh away. The stalks are not high in sugar but impart a pleasant tartness to pies, cobblers, and crisps. The leaves, however, contain poisonous oxalic acid. Humans should steer clear of eating the leaves.

All parts of pokeweed, *Phytolacca americana*, are poisonous, with the roots having the highest concentration of saponic glycosides and the berries having the least. It is often mistaken for chokecherry (*Prunus virginiana*) which is edible. Birds eat the seeds of pokeberry with no poisonous effect, but humans and livestock have died from ingesting all or parts of pokeweed. Indigenous cultures have passed down from one generation to the next very specific methods for safely preparing pokeweed stems and leaves for eating—but no one should attempt this without a thorough understanding of how to do it.

Rue (*Ruta graveolens*) is a perennial herb historically used for medicinal purposes. Though native to southern Europe, it has escaped cultivation here in the U.S. and can be found along roads and in ditches. In addition to its toxicity when ingested, rue also is phototoxic. Sunlight, in combination with the presence of sap from rue, will cause serious and painful welts on the skin. The saying "to rue the day" came from the negative effects the plant causes.

Not all plant defenses have impacts on humans. Trees communicate with one another through the production of pheromones. This helps to spread the message when an invasive insect is on the hunt for leaves. Healthy nearby trees have receptors that take in the odorous message and produce more defensive compounds, making the trees less tasty and reducing edibility for the invading insect.

Walnut trees secrete a herbicide, juglone, into the soil to discourage neighboring plants from developing in the walnut's root zone.

Then there are thorns (think cacti), prickly hairs (like stinging nettles), and a host of other defenses. The list goes on. Some plants play nice, some don't.