

POKEWEED: A NATIVE WEED

Whenever the subject of weeds is brought up, everyone has their own idea of what constitutes a weed. Many people think of weeds only as non-native plants. However, there are some native plants that are considered by many to be a weed. One such plant might be the Pokeweed (*Phytolacca americana* L.). (The previous scientific name for this plant was *Phytolacca decandra* L.).

The Pokeweed is a member of the Pokeweed Family (*Phytolaccaceae*). The generic name, *Phytolacca*, is from the Greek words, *phuton*, *phyto*, and *phyton*, which is “plant”, and from Latin word, *lacca*, which is “red”. (*Lacca* came from the Arabic and Persian words, *lakk* or *lak*, and from the Hindu word, *lakh*.) One of the specific epithets, *americana*, is Latin for “America”. The previous specific epithet, *decandra*, is Greek for “10 stamens”, with *dec* meaning “10” and *andra* meaning “male parts”.

At both different times and different places, Pokeweed had many different names with different spellings. Some of these other common names have been American Cancer, American Nightshade, American Pokeweed, American Spinach, *Amerikanische Scharlachbeere*, Bear’s Grape, Bledo Carbonero, Cancer Jalap, Cancer Root, Chongrass, Coakum, Cocum, Cokan, Common Pokeberry, Crowberry, Cunicum, Dyer’s Grape, Garget, Garget Plant, Haystack Weed, *Herbe de la Laque*, Indian Greens, Indian Polk, Inkberry, Ink Bush, *Kermesbeere*, *Mechoacan du Canada*, Mockingbird Berry, *Morrelle a Grappes*, Pigeonberry, Pocan, Pocanbush, Pocum, Poke, Pokeberry, Pokeroot, Poke Salad, Poke Salet, Poke Sallet, Poke Sallit, Poor Man’s Asparagus, *Raisin d’ Amerique*, Red-ink Plant, Redweed, *Reujin d’ Ours*, Scoke, Skoke, Virginia Poke, White Top, *Yoshu-Yama-Gobo*, and *Yyamilin*.

Toxic Properties

Almost all of the Pokeweed is highly toxic. The root is the most toxic part of the plant. During the winter, most of the plant’s toxins are stored in the roots. When the plant grows back during spring and summer, the toxins will translocate from the roots to the rest of the plant.

Some of the toxins in this plant are mitogen (a glycoprotein lectin), sapogenic glycosides, saponin phytohemagglutinin, triterpene saponin phytolaccine (an alkaloid), phytolaccic acid, phytolaccatoxin, and phytolaccagenin. The Pokeweed also contains oxalic acid, resins, and tannins.

If consumed, the toxic symptoms may appear within 1-3 hours. Some of these symptoms may include burning sensations in the mouth and throat, convulsions, drowsiness, gastroenteritis, labored breathing, muscle spasms, prostration, seizures, salivation, sweating, visual impairments, and weak pulse. Although these symptoms may last up to 48 hours, excessive consumption of this plant can be fatal.

Even handling this plant can be dangerous. The toxins in the sap can penetrate the skin through a cut or an abrasion and can damage red blood cells, cause dermatitis, or even cause chromosomal damage. Safety gloves should always be worn when handling this plant.

This plant is also toxic to animals. Most of the time, domestic livestock will avoid this plant in the field. However, swine may grub out the roots and then eat them.

Unfortunately, this plant can get mixed in with the hay during harvest. Because of these possible risks, all Pokeweed should be removed from pastures. Accidental consumption of this plant may also be fatal to livestock.

Medicinal Uses

Although the Pokeweed is toxic, it did have some medicinal uses. Both the Native Americans and the European settlers used the Pokeweed as a medicinal plant. In fact, the Pokeweed was listed in the *U. S. Pharmacopoeia* (1820-1916) and in the *National Formulary* (1916-1947).

The highly toxic root even had some medicinal uses. The root was used as a poultice for treating bruises, neuralgia, and rheumatism. A dried root was used for treating hemorrhoids, inflammations, pain, and skin parasites. A powdered root was used as a poultice for treating tumors and skin eruptions. A crushed and roasted root was used as a blood purifier. A root wash or ointment was used for treating eczema, fevers, fungal infections, ringworms, scabies, sprains, and swellings.

The berries also had medicinal uses. The Native Americans made a tea made from the berries and used it for treating arthritis, rheumatism, and dysentery. Some people living in the Ozarks ate one berry a year to prevent or to treat arthritis. The berry juice or poultice was used for treating acne, cancer, hemorrhoids, skin eruptions, skin ulcers, sores, swellings, and tremors.

Even the leaves had medicinal uses. The leaf was used as a cathartic, and emetic, and as an expectorant. The leaf was also used as a poultice for treating acne and scabs and to stop bleeding.

The plant's mitogen has potential in modern medicine. Its antiviral properties may someday be used for treating cancer, herpes, or HIV. Its ability to affect cell division may be used to stop the division of B- and T-lymphocytes (white blood cells), which can cause leukemia. More research is still being done on this plant's medicinal uses.

Edible Uses

Despite the Pokeweed's toxicity, there are a few parts of the plant that may be eaten. However, the consumer must know which parts of the plant to eat and how to properly prepare them. Because of this plant's toxicity, extreme caution must always be observed.

The young shoots of the Pokeweed are edible if harvested when young. The shoot should not be any taller than 9 inches, there should be no pink or purple coloring, and the leaves should not yet be unfolded. There should also be no roots attached to the shoot.

After harvesting these young shoots, they must be boiled in at least 2 changes of water. (The first boiling should only be about 5 minutes. The second boiling may be about 20-30 minutes.) Afterwards, the boiled shoots may be eaten as a potherb, like asparagus or spinach. These boiled shoots contain vitamins A and C, beta-carotene, and iron. In the southern states, these boiled shoots are canned and are sold commercially.

In some areas, residents will plant and harvest their own Pokeweed shoots. Usually the top 6 inches of a 2-4-inch diameter root is dug out after the first freeze and is placed in a wooden box filled with dirt. This box is then placed in a greenhouse or a root cellar. Because mature plants can withstand repeated cuttings, these planted roots may send up shoots nearly every week to be harvested. A person can then have fresh shoots year-round.

The ripe berries may sometimes be eaten. Although, they are the least toxic part of the plant, they may be harmful to children. Cooked berries may be used as pie filling.

Despite these edible uses of the Pokeweed, there are still risks of accidental poisonings. It is probably best to avoid any and all consumption of this plant.

Wildlife uses

These berries make ideal food for many species of birds. The toxins in the berries do not harm the birds. The berries become more palatable to them if they remain on the plant throughout the winter and endure freezing temperatures.

For some songbirds, the berries make up to 10% of their diet. In return, these birds help spread the seeds. Unfortunately, eating these berries does give gamebirds and domestic fowl a bad taste.

Birds may sometimes become intoxicated after consuming the berries. This is either because the berries became fermented or because the seeds contain narcotics.

Cultural Uses

Like many of our other native plant species, the Pokeweed played a part in the history of this country. During the 1844 Presidential campaign of James Knox Polk, Polk and his supporters wore leaves and twigs of the Pokeweed as campaign buttons. However, despite their similar names, the Pokeweed was not named after President Polk.

Many Native American tribes used the Pokeweed for religious and folklore purposes. Some tribes used this plant in their witchcraft. Because this plant causes violent purging, the plant was believed to rid the body of evil spirits. Some Native American also wore the berries around the neck to ward off infectious diseases.

Other Uses

The Pokeweed was used in making dyes. The dried mature leaf was used in making a yellow dye.

The berry juice was used as red dye, red ink, or food coloring. This juice gives wool and linen a pink color and gives paper a purple color. Unfortunately, the pink color usually fades on cloth.

At one time the berry juice was used to color cheap wine. However, the juice gave the wine a bad taste.

Description of the Pokeweed

Perennial

Height: 2-12 feet.

Stem: Smooth, shiny, stout, succulent, and erect. Its color may be green, red, pink, or purple. It is usually branched near the top. The piths are mostly hollow but have gray or white wafer-like partitions. The stem may emit a foul odor if broken or bruised.

These stems remain intact long after the rest of the plant is gone. During the winter, the stems turn brown or black. When spring arrives, the stems became pale and then decay.

Leaves: Simple. Alternate. Thick. Each leaf is petioled and is elliptical, lanceolate, oblong, or ovate. The margins are smooth or are slightly wavy. The tip is pointed and the

base is tapered toward the petiole. Each leaf is about 3½-20 inches long and about 1½-5 inches wide, with smaller leaves near the top of the plant. The petiole is about 2 inches long and there are no stipules. The leaves are susceptible to a plant mosaic virus because this plant is an alternate host to a cucumber mosaic virus.

Roots: The plant has a large, long, coarse, thick, fleshy taproot. The root's thin bark is brown and the root's interior is white. The taproot enlarges every year and may reach a diameter of 6 inches. The rest of the root system is extensive and gnarled.

Flowers: The flowers are arranged on long, narrow, reddish, erect or drooping racemous clusters. These clusters are about 6-8 inches long and are usually found at the top of the plant or on the stem opposite the leaves.

Each flower is green or white to pink, radially symmetrical, about ¼-½-inch wide, and is not very showy. The flower has 4-5 rounded petal-like sepals, no petals, a 10-celled pistil (may vary from 5 to 15) with 10 styles, and 10 protruding stamens (may vary from 5 to 30). Depending upon the weather, these flowers are either insect- or self-pollinated. Flowering season is usually May to October.

Fruit: Berry. These berries are arranged in drooped clusters, with each berry atop a short stem. Each berry is green when young, but will later turn purple to black. It is about ¼-½ inch wide, rounded, slightly flattened, indented, and usually has 10 chambers. Each chamber has 1 seed. Fruiting season is usually August to November. These berries may remain on the plant throughout the winter.

Seeds: Small, smooth, black, glossy, round and flattened. These seeds may remain viable for over 40 years.

Habitats: Clearings, fencerows, open fields, roadsides, strip mines, thickets, waste areas, and wood's edges.

Range: Eastern United States, southeastern Canada. It has been naturalized on the West Coast, Hawaii, and in Europe (ca. 1650).

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