

# The Herb Society of America's

## Notable Native™ Herb 2022

### *Hydrastis canadensis*, goldenseal



*Hydrastis canadensis*, goldenseal  
Courtesy Peter Dzuik, Minnesota Wildflowers CC BY-NC-ND 3.0 US

**Family:** *Ranunculaceae* (Buttercup family)

**Latin Name:** *Hydrastis canadensis* L.

**Common Names:** Goldenseal, yellow puccoon, Indian paint

**Growth:** Herbaceous perennial; colonizing

**Hardiness:** Grows from VT to MI & MN, s. to VA, mts. of GA, AL, TN & AR .

**Light:** Shade to Part shade

**Soil:** Moist humus-rich soil, though can tolerate drier soils with regular rain

**Water:** Moderate rainfall

**Uses:** Historic medicinal; red dye

**Propagation:** Seed, rhizome divisions

**CONSERVATION STATUS:** once abundant throughout its range, habitat loss and over-collection has moved it to Endangered, Threatened, Special Concern/Vulnerable, or Rare status in 27 states in which it is native.

## History

The genus name *Hydrastis* is from the Greek *hydro* for water and *rheo* meaning to flow. This may have been an indication of the diuretic properties of the plant. Another possible explanation is that the name was chosen by Linnaeus because of similarities in appearance to the leaves of *Hydrophyllum* species, or Waterleaf, also native to North America.

The common name goldenseal describes the annual scars left on the yellow rhizome by the plant's flowering stem; these scars are said to resemble the imprint of an old-fashioned letter seal.

Native to Canada and much of the eastern half of the United States, goldenseal has a long history of medicinal use among Indigenous people, particularly the Cherokees and Iroquois. Early arriving settlers quickly discovered the virtues of goldenseal from Indigenous people, who showed them how to use the root for medicine, dye and as an insect repellent.

## Description

Goldenseal grows from eight to twelve inches tall with a single basal leaf that can be as much as 10" long and wide. The unbranched hairy stem has two

leaves near the apex of the stem, usually one sessile and one with a short petiole. These leaves can be up 8" long and wide.

While in bloom, the leaves are smaller, wrinkled and hairy. After bloom, the leaves attain their full size and lose some of the hairiness.

A flowering plant produces two or more stems, each with a single flower from 1/2 to 3/4 inch in diameter. Three pale green sepals appear, then drop before appearance of the flower, which has no petals but 30—40 showy white filaments topped with a yellow anther that surround the 10 pistils at the center. Early to mid-summer, the pistils are followed with a dense cluster of 2-



Goldenseal leaves. Courtesy Peter Dzuik, 2007, Minnesota Wildflowers.

seeded bright red berries.

Colonies of plants develop with time, spread by seed and by offshoots from the rhizome. They are slow growing, taking up to 5 years to bloom. Once they do, they are a lovely addition to the garden.

## Culture & Habitat

Goldenseal grows in mature, rich woodland ecosystems, enriched with a thick layer of decaying deciduous tree leaves and wood from fallen trees with soil that is well-drained and moist, but not wet. Its preferred pH range is slightly acidic, 5.5 to 6.5, and preferred light quality is 30 -70% shade . It is not generally drought tolerant but mature plants will survive a late season drought, especially with a little supplemental water.

You will find it growing in small groups with other woodland herbaceous species such as ginseng, black cohosh, blue cohosh, bloodroot, trillium, wild yam, and woody species such as beech, maple, hickory, hawthorn, honey and black locust, oak, and tulip trees.

## Pollinators

Goldenseal typically blooms from April through May depending upon altitude and latitude. The greenish-yellow anthers are the primary attractant of pollinators, the most common in the United States being syrphid flies and some larger bees.

The red fruit of the goldenseal plant is eaten by animals and birds. However, dispersal by animals is considered less effective.

## Uses

### Medicinal:

**Traditional:** Native Americans used the root as a tonic, stomachic, for sore eyes, and general ulceration. They taught European settlers to use the plant for medicinal purposes, primarily as an eyewash, to treat sore throats, as a digestive, and to chew the root to relieve mouth sores.



Goldenseal in a cultivated setting.  
© Katherine Schlosser

After the Civil War, the plant became a popular general cure-all and was an ingredient in many patent medicines. It was listed as an astringent and antiseptic in the U.S. Pharmacopoeia from 1831 to 1936, and was used traditionally to treat yeast and other fungal infections.

**Modern:** Consult with your physician before using this herb as a medicinal product.

Goldenseal remains one of the most popular herbal supplements sold in natural food stores in the U.S. and is used extensively in Chinese and Indian medicine. Its antifungal and antibacterial berberine constituent makes it a popular antibiotic. It is used as an antiseptic for treating canker sores, chapped lips, wounds, and many other external problems. Although very few clinical studies document the validity of the claims made about it, it is used as a tonic to aid digestion and soothe upset stomachs, as an antiseptic and astringent to treat infected gums and sore throat. It is often mixed with *Echinacea purpurea* in immune system-boosting preparations.

Goldenseal's use as a cancer treatment is supported by several animal studies showing that it helps shrink tumors. Other studies suggest the anti-cancer potential of goldenseal may make it suitable for use as a complementary medicine in liver cancer. Human data is lacking for many such claims.

One study showed that leaf extracts act against MRSA, boosting its claim of preventing infection.

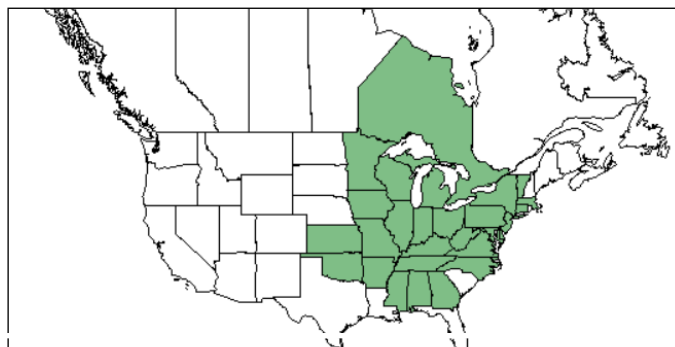
Because it stimulates uterine contractions, pregnant and lactating women should not use it.

The FDA lists goldenseal as an herb of 'undefined safety.' For otherwise healthy nonpregnant, non-nursing adults who do not have high blood pressure, glaucoma, diabetes, or a history of heart disease or stroke, it may be used cautiously for brief periods of time in amounts typically recommended.

Goldenseal can be toxic, with symptoms of poisoning including stomach upset, nervousness, seizures, and central nervous system depression. Use over a long period of time can reduce absorption of Vitamin B. It can also react negatively with some commonly prescribed medications, even fatally.

Although heroin addicts in the late 1970s believed goldenseal tea could prevent detection of opiates in urine specimens, it does not.

**Dye:** Depending on the mordant used, the root produces permanent dyes



*Hydrastis canadensis* distribution (shaded in green = native in these areas. Map from USDA Plants Database.

ranging from pale yellow to orange and a green color if mixed with indigo. It can also be used in watercolors and oil paints.

## Propagation

Goldenseal can be propagated by rhizome divisions, fibrous root cuttings and seed. Rhizome division is the easiest method and quickest to mature. Root cuttings have a low rate of shoot initiation and seed has multiple dormancy requirements, thus take the longest to reach flowering and setting seed.

Mature rhizomes are short and fat and will have several growing points. Each rhizome division should be approximately 1/2" long with a growing point. Cover each division with 2"-4" of a good soil or soilless medium which contains organic matter. You will get 2-4 divisions per rhizome. For the fibrous roots, look for small nodule-like structures as this is where roots and shoots will form. Lay the roots horizontally on 2"-3" of medium and cover with 1" of medium.

Seed propagation will take the most effort and attention. Germination rates of goldenseal seeds vary greatly. The seeds must be kept moist. The fleshy outer covering must be soaked off to remove one of the dormancy mechanisms, then the seed needs to be warm-stratified. Cold stratification will extend the dormancy period of the seed. Freshly cleaned seed given a period of warm stratification and then quickly sown usually results in the highest germination rates. For more specific information, please refer to the research conducted by North Carolina State University and by Rico Cech.



Goldenseal fruit (non-edible).  
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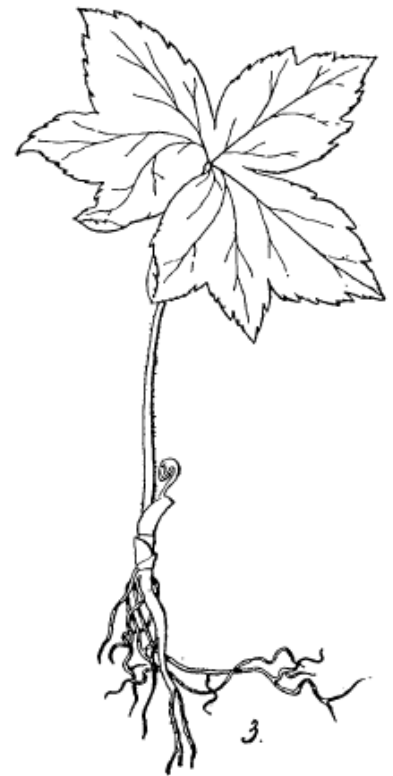
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Second year plant. Homer Bowers, 1908.

## Conservation Status

*Hydrastis canadensis* is listed as Vulnerable – “facing a high risk of extinction” in the IUCN (The International Union for Conservation of Nature) Red List. Using the At-Risk Assessment Tool developed by a team of individuals and organizations (see Goldenseal Summit in references), goldenseal has a score of 50 which indicates a high probability of local populations being extirpated.

Due to its global popularity for herbal use, and the higher price that wild collected rhizomes can command, this species has been over-collected in the U.S. and Canada. There are several organizations in the U.S. that are working to protect native populations and to promote nursery propagation of goldenseal for the marketplace. Richo Cech calls this “conservation through cultivation”.

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