

# Giant Hogweed

## *(Heracleum mantegazzianum)*

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### Introduction

Giant hogweed (*Heracleum mantegazzianum*) is on the federal and Ohio noxious weed lists making it unlawful to propagate, sell, or transport. It has been included on these lists because of its ability to crowd out native plants and because of its potential human health hazard.

One giant hogweed plant can produce 20,000 seeds, allowing it to spread quickly when not managed. This plant, once found exclusively in ornamental gardens, has escaped and has become established in rich, moist soils along roadside ditches, stream banks, vacant farmland, and fence and tree lines. Giant hogweed plants form a dense canopy and displace many native and non-native species.



*Figure 1. Giant hogweed can grow up to 15 feet in height and flowers in late June to early July.*

Lack of detection of the rosette stage of this species has underscored the extent of the giant hogweed establishment in Pennsylvania and New York where it is widespread.

Giant hogweed's greatest danger is the effect its sap has on humans. Furocoumarins in the sap can cause a skin reaction known as phyto-photodermatitis. This causes the skin to be highly sensitive

to ultraviolet light. Swelling and blistering of the skin occurs and may lead to permanent scarring. Contact with the eyes can cause temporary and sometimes permanent blindness.



*Figure 2. The sap of giant hogweed can cause severe burns on the skin.*

Giant hogweed is native to the Caucasus region of Eurasia and was introduced into Europe in the 1800s. Giant hogweed's first recording in the United States was in 1917 in an ornamental garden in New York. To date, 2,500 sites (flowerbed, roadside, forest edge, stream bank) covering 20 acres of giant hogweed have been identified in 16 states since its inclusion on the Federal Noxious Weed list (M. Bravo, WSSA 2006). Stream bank areas have the greatest potential to produce large infestations as water is an important link to giant hogweed establishment and proliferation. Ohio's population of giant hogweed is primarily found in Northeast Ohio especially the counties bordering Pennsylvania.

### Identification

Giant hogweed is an herbaceous dicotyledonous plant that is classified as having a biennial life cycle. It is a member of the *Apiaceae* (*Umbelliferae*) family of plants, commonly known as the Carrot or Parsley family. It can live for several years but once it flowers and bears fruit it dies. Giant hogweed is hardy to zone 3 and prefers full sun and moist, well-drained soil. Giant hogweed can be

identified by its large compound umbel of white flowers, large, deeply incised leaves, and prominent white hairs and purple blotches on its stems.

**Foliage**

This plant has been a popular ornamental plant because of its massive size and eye appeal. It can be distinguished from many look-a-likes because it can grow to a height of 15 feet. Along the base of the plant, leaves are ternately compound and unfold in the early summer into deeply incised, lobed leaves measuring up to 5 feet in width. The leaflets attached higher on the stem are not as large, are triangular-lanceolate, and deeply cut. Giant hogweed has an alternating leaf arrangement. The plant remains in the rosette stage until it develops sufficient root reserves to initiate flower formation. In moist, fertile soils this usually occurs in the second year of its life, but may not occur until the third to fifth season.



Figure 3. Leaves of giant hogweed have different shapes and sizes during its life cycle.



Figure 4. Leaves of giant hogweed have different shapes and sizes during its life cycle.



Figure 5. Giant hogweed leaves develop into deeply incised, lobed leaves measuring up to 5 feet in width.

**Stem**

The hollow stem of giant hogweed is coarse and ridged with protruding white hairs that are noticeable at the node and base of the petiole. The stem is mostly green in color with purple blotches that contrast easily with the white hairs. Stems can grow to a height of 10 to 15 feet and measure between 2 to 4 inches in diameter.



Figure 6. Prominent white hairs at node and base of petiole.



Figure 7. Showing the hollow stem and possible exposure to the harmful sap.

**Flower**

The inflorescence on giant hogweed is arranged as a compound umbel with thousands of tiny, white flowers. The inflorescence forms a flat top with a diameter up to 2.5 feet and looks like a white umbrella. Giant hogweed flowers in late June to early July.



Figure 8. Giant hogweed's umbrella-shaped inflorescence can grow up to 2.5 feet in diameter.

## Seed

Giant hogweed is a moderate seed (fruit) producer. The fruit can be described as a dry, flattened, oval, two-winged mericarp, approximately 3/8-inch long containing one seed. Mature seed of the current year is dormant and will not germinate until the following spring at the earliest. Dormancy of these seeds is overcome by cold and wet weather conditions that occur during normal winters in Ohio. Seeds can remain viable in the soil for many years. Water, especially in flood plains, and wind are the primary dispersal mechanisms for giant hogweed seed; however, animals may account for some dispersal.

The most efficient seed dispersal is known to be through human activity. The inflorescence of giant hogweed has long been used in dried flower arrangements and other decorations.



Figure 9. Giant hogweed fruits (seeds).

## Roots

Giant hogweed develops an extensive tap root during its first season of growth. When fully developed, this extensive tap root along with secondary roots provides support for the enormous plant. Despite being labeled a biennial, giant hogweed appears at times to give rise to new plants from the branched taproot it develops; however, it does not reproduce vegetatively.



Figure 10. Root structure of giant hogweed.

## Look-a-Likes

Giant hogweed is easily confused with other species in this family. These include *Angelica atropurpurea*, angelica, *Conium maculatum*, poison hemlock, *Daucus carota*, wild carrot, and *Heracleum lanatum*, cow parsnip. Cow parsnip is the most similar. Other tall herbaceous plants that grow in Ohio, such as common pokeweed, giant ragweed, and ironweed are commonly misidentified as giant hogweed. For positive identification, contact your local county Extension office.

## Control of Giant Hogweed

Gardeners, landscapers, surveyors, nurserymen, and farmers should exercise caution around this plant. As was mentioned previously, the plant juices can cause phytophotodermatitis. If the plant sap comes in contact with the skin in the presence of sunlight, a severe rash and/or blistering can occur. Therefore, extreme caution should be taken when controlling this species.

Control of giant hogweed usually includes such practices as digging, mowing, cutting, removal of umbels, grazing, and herbicide application. The control strategy, or strategies, selected will be dependent on the area covered by the population, accessibility, and plant density. Because giant hogweed is a moderate seed producer, continuous management to prevent seed production is extremely beneficial.

Most research indicates that five years of intensive management is required to attempt to eradicate it. The goal of mechanical or cultural control is to deplete the energy reserves of the plant's root system and eliminate seed production. Chemical control is the most common control strategy utilized. Research trials have demonstrated giant hogweed can be effectively controlled using herbicides; however, multiple applications are usually necessary.

Triclopyr and glyphosate (Roundup and many other products) have both been shown to be effective due to their systemic activity. The minimum glyphosate rate should be 0.75 pounds of acid equivalent per acre, but the exact rate still needs to be determined through research trials. Other products such as 2,4-D, TBA, MCPA, and dicamba may control the aboveground portion of the plant but are relatively ineffective at killing the root stock.

Applications of triclopyr and glyphosate in the fall (after the first frost) to plants established that season usually provide the most effective control in a single application. However, multiple applications per year for consecutive years may be necessary to completely control a giant hogweed population. It is important to use herbicides in accordance with the directions on the label. It is recommended that landowners who find giant hogweed on their property contact their local county Extension office or a USDA-APHIS office for current spray recommendations or to determine the status of any governmental spray program being conducted.

Regardless of the method selected, protective clothing and eyewear should be worn when working around this plant, especially when cutting, as the risk of splashing the toxic sap onto the skin will be the greatest.

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