

# Giant Hogweed

(*Heracleum mantegazzianum*)

Best Management Practice Technical Document for Land Managers

March 2023

- DISCLAIMER -

This document relays specific information relating to invasive plant control practices that have been recommended by leading professionals across Ontario. It contains the most up-to-date research and knowledge available at the time of publication and reflects current provincial and federal legislation regarding pesticide usage. It is subject to change as legislation is updated or new research findings emerge and is not intended to provide legal advice. Tailor the timing of control to your region.

Use this document after you have monitored, assessed your priority areas, and ensured that the control options listed in this document are permitted and appropriate for your site. Consider using an Integrated Pest Management (IPM) approach designed to restore desired plant communities and promote public health and safety by preventing and controlling invasive plants like giant hogweed that are poisonous to human touch. This approach involves using a combination of control tactics (e.g. manual control and chemical control) to manage invasive plant populations. The prevention and early detection of giant hogweed populations is essential for an effective plant management strategy. Regardless of the management option, always wear protective clothing and eye protection when removing giant hogweed. It is highly recommended to hire licensed professionals to manage this plant to ensure safe procedures are followed.

This technical bulletin contains the most up-to-date information on control methods. For more information on the biology and life cycle of this invasive plant, please refer to the Ontario Invasive Plant Council's Best Management Practices document for giant hogweed.

**SAFETY WARNING:** Giant hogweed sap contains furanocoumarins, phototoxic (reacts with UV light to create a toxin) compounds which cause phytophotodermatitis. This can result in partial thickness or full thickness burns, permanent scarring and/or eye damage. Extreme caution and protective clothing is necessary when working with this species. Wear a disposable spray suit, on top of long sleeve shirts and pants, waterproof gloves, rain boots and eye protection. When working with plants at chest level or higher, a face shield is essential, and a respirator is recommended when working in hot temperatures as the sap can become airborne and cause respiratory issues. If exposure occurs, immediately (within 20 minutes of exposure) wash the area preferably with detergent (as opposed to soap) and cool water and cover the area from sunlight. Soap forms a scum that might stick to the skin while detergent emulsifies compounds and allows them to be washed away.

## Strategy and Cautions

- In early spring (April / May), survey for this plant in its typical habitat (i.e. near rivers and streams, ditches or lowland areas with moist soil). At this time, giant hogweed is in its vegetative stage, called a basal rosette.
- Undertake control as early in the season as possible (April to early May) - before giant hogweed starts to flower and is still in the basal rosette form. Timing is critical – giant hogweed grows quickly (up to 6 feet) and becomes unmanageable in size, and unsafe to control. The safest way to manage this species is implementing control early in the growing season.
- If dealing with large populations – prioritize outlying populations (isolated plants or satellite populations) first to prevent further spread via seeds (one plant can produce over 100,000 seeds).
- In early summer (June to July), if dealing with only a few isolated plants, flowerheads can be removed to prevent the production of seeds. This should only be done if the plant can be safely accessed. Follow up control is also necessary, as new flowers can develop within 7 to 10 days of cutting.
- Individual plants, or small populations (< 25 plants) can be removed manually by digging and removing the roots. Digging will require follow-up monitoring, as any roots that remain will regrow. In addition, the soil disturbance from digging can encourage the germination of new giant hogweed plants from the seed bank.
- Small populations, or large populations (≥ 25 plants) are most effectively controlled using a systemic herbicide.
- When possible, control giant hogweed populations using manual removal techniques. Controlling giant hogweed with herbicides should be considered a last resort.
- Never use motorized tools (whipper snipper, mowers, etc.) to control giant hogweed because they pose extreme danger of sap exposure.





Caution: Make sure that all equipment, boots, and clothing, are cleaned with detergent and water at the site to ensure seeds are not transported from the site. Bag clothing onsite and wash separately from other laundry. Do not move soil that could contain seeds, especially from riparian areas. Seeds can float and start populations downstream. See the [Ontario Invasive Plant Council's Clean Equipment Protocol](#) for more details on how to prevent the spread of invasive plants.

### Management of Small Populations (<25 plants)

Digging can be used for individual plants or small populations in environmentally sensitive areas where herbicides cannot be used. Giant hogweed grows rapidly, and control methods implemented early in the growing season are strongly recommended. Remove giant hogweed in late April or early May before it develops a flowering stem and when plants are typically less than 30 cm in height and easier to dig up. As the growing season progresses, giant hogweed becomes more difficult to work with due to its large size and increased health and safety concerns for workers. Monitoring for the establishment of new giant hogweed populations before they become infestations is recommended.

#### Flower/Seed Removal

If the plants are flowering, remove the flower heads first and carefully place them in sturdy clear garbage bags for solarization to ensure seeds are not produced and released. **Note: If the seeds have started to dry out (i.e. no longer green) it will be very hard to remove the seed heads and/or cut the plant without spreading the seeds.** If the plant is of a size where it is safe to do so, cover the seed head gently with the plastic bag, secure around the stem, and cut below the bag to capture any seeds. Plants will have to be revisited at least three times a growing season as another flower head can form within 7 to 10 days.

#### Digging

If the plants are not flowering, digging can be an effective technique for small populations. First, cut the stalk to at least below eye level, in half for instance, to reduce the chance of sap exposure to face and eyes. Cut again to a height comfortable for you to dig out. Plants can also be cut at the base and tipped over onto the ground to avoid using pruners above your face and eyes. Tip: A long handled shovel can be used as an axe to sever the stem above the ground and remove leaves to allow better access to the plants. Cutting the stalk can also be accomplished using large pruners.

Dig the remaining plant out and attempt to remove the entire root system. This may be unfeasible if the root is too thick and deep. It is recommended to revisit the site (in approximately 3 weeks) to cut back re-growth and dig out missed root fragments. Using a sharp shovel or spade, cut the taproot > 15 cm below ground. It is important to note that digging may not be 100% effective as some roots are vigorous and will resprout. For help, call a professional or local authorities who can properly destroy the plant and its seeds.

### Management of Large Populations ( 25 plants)

When manual control is no longer an option, chemical control is the most effective method for managing large populations. Foliar or stem injections applications (where the label allows) of a systemic herbicide are recommended. Since systemic herbicides are translocated through an actively growing plant, herbicide applications must be applied during the growing season. Some products may be applied through injection devices that deliver specified amounts of the pesticide product into targeted hollow-stem plants growing in any site specified on the label. Foliar sprays are most effective in spring and should never be done once the plant has flowered. Drift may prohibit pesticide use near water.

## Legal Requirements for Chemical Control Measures

Please note that this is only for general guidance and not intended as legal advice. Land managers are responsible for ensuring that the management or control project complies with all relevant legislation. The management of pesticides is a joint responsibility of the federal and provincial governments. The federal government, through the Pest Management Regulatory Agency (PMRA), is responsible for approving the registration of pesticides across Canada under the Pest Control Products Act. Ontario regulates the sale, use, storage, transportation and disposal of pesticides including issuing licenses and permits under the Pesticides Act and Ontario Regulation 63/09.

Federally registered pesticide products are assigned one of four federal product class designations (i.e., Manufacturing, Restricted, Commercial and Domestic). The class of pesticides determines who can sell or use the pesticides products as well as what restrictions are placed on its use (e.g. requires a license and/or permit). Ontario's Cosmetic Pesticides Ban permits the use of pesticides that are listed in a document entitled "List of Active Ingredients Authorized for Cosmetic Uses" (referred to as the "Allowable List") for cosmetic (non-essential) purposes. Unlisted pesticides can only be used for an exception to the ban, such as for public health or safety purposes to control plants that are poisonous to the touch.

Under the poisonous plants exception only herbicides whose active ingredient is glufosinate ammonium or glyphosate (or both) may be used to control giant hogweed. Domestic pesticides containing glufosinate ammonium or glyphosate are available to homeowners, while Restricted and Commercial classes of these pesticides are only available to licensed exterminators and certified farmers. Other exceptions to the ban may apply to control giant hogweed. An example may be the use of Commercial or Restricted unlisted pesticide by a licensed exterminator or certified farmer for the purposes of controlling noxious weeds to comply with the Weed Control Act under the



## Legal Requirements for Chemical Control Measures Continued

“Other legislative requirements” exception. Conditions for each exception under the ban are described in Ontario Regulation 63/09 under the Pesticides Act and must be followed. Each class of exterminator license authorizes the use, and conditions of use for the corresponding type of extermination. For more information regarding pesticide licensing requirements, please access pesticide licenses and permits to see if you meet all the conditions set out in the regulations.

For information on obtaining a license or a permit refer to Ministry of the Environment, Conservation and Parks website at <https://www.ontario.ca/page/pesticide-licences-and-permits>.

Table 1: Exceptions to the Ontario Cosmetic Pesticides Ban Act which may be applicable for control of giant hogweed.

|                                 |   |
|---------------------------------|---|
| <b>Public health or safety:</b> | Giant hogweed poses a hazard to human health by causing phytophotodermatitis. |
| <b>Agricultural:</b>            | Giant hogweed is listed as a Noxious Weed under the Weed Control Act.         |

For more information on these exceptions and applicable procedures, please visit <http://omafra.gov.on.ca/english/crops/resource/using-pesticides.htm>.

## Herbicide Selection and Application

Controlling giant hogweed with herbicides should be considered last resort. As the list of herbicides products registered for giant hogweed changes over time, please ensure you have the most current label. Pesticide labels can be found using the PMRA’s label search tool, which can be found by searching “PMRA label search” in any major search engine. **Read the entire label before using and follow the label instructions.** All applicable federal and pesticide legislation must be followed. Applicators must observe the specified buffer zones for protection of sensitive aquatic habitats and be aware of the drift potential of the selected herbicide. Avoid damaging non-target areas by following pesticide label instructions.

Table 2: Chemical control techniques recommended by experts for giant hogweed.

| Chemical Control Method: Timing and Application | Details   |
|---|---|
| <b>Foliar</b>                                   | Late April / early May when plants are actively growing. Follow with summer application prior to seed set for missed plants or those that may have re-grown. This should be done before the beginning of July.<br><br>Some herbicides are effective if a plant is flowering. The plants must have growing leaves. Cover leaf surfaces thoroughly. Temperatures must rise above 10°C for at least 2 hours for the chemical to be absorbed and translocated to the roots. |
| <b>Stem Injection</b>                           | Late May / early June or when flowering but before seeds are formed. Insert injection gun at about chest height but below a node on the stem.<br><br>For plants > 2 m tall or plants that have bolted and are flowering.  |

As there are areas where pesticide use is restricted or where pesticides cannot be applied, you may need to maintain specific spray buffer zones when applying pesticides or comply with setback distances from water sources.

## Giant Hogweed Treatment Times

| Treatment Method                 | J | F | M | A | M | J | J | A | S | O | N | D |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Digging</b>                   |   |   |   | A | M | J | J | A | S | O | N | D |
| <b>Flower/Seed Head Removal</b>  | J | F | M | A | M | J | J | A | S | O | N | D |
| <b>Chemical (Foliar)</b>         | J | F | M | A | M | J | J | A | S | O | N | D |
| <b>Chemical (Stem Injection)</b> | J | F | M | A | M | J | J | A | S | O | N | D |

Optimum treatment time

Suboptimal treatment time but can still be effective

## Disposal

**NOTE: Extreme caution should be taken when disposing of giant hogweed. Ensure to wear proper PPE to avoid sap exposure. Contact with the sap can happen by brushing up against any plant parts, handling plant materials or accidentally touching equipment used to remove the plant.** If you have questions concerning your health status, consult a professional. For medical or health information, please contact your local health care provider or Telehealth Ontario at 1-866-797-0000.



## Disposal Continued

**Onsite disposal:** Giant hogweed plants without flower/seeds can be left to decompose on site after the root has been severed from the crown and the stem has been severed from the roots. **DO NOT BURN as sap can become airborne and cause respiratory issues. DO NOT COMPOST as temperatures do not get hot enough to kill plant material.**

**Offsite disposal:** Do not compost viable plant material (flowers, seeds and roots) at home. Put the plant in doubled up garbage bags and solarize. Bags will contain sap and can become hazardous. **Do not use black plastic bags. Use clear bags so that identification is easy. Most accidents happen when handling the bags. Be sure to suit up and wear PPE. NOTE: Using weaker, thinner bags will increase the chance of tearing and exposure to sap.** Bags should also be labelled clearly with the words “giant hogweed”. When in doubt about how to dispose of invasive plant material, consider getting help from professionals or local authorities who can destroy and dispose of the plant and its seeds. For large patches, a proper landfill disposal appointment will be required.

## Rehabilitation and Monitoring

Control is most successful when heavily infested areas, often with seed-saturated soil seedbanks, are re-planted with native trees and plant species that can out-compete new growth. See the Ontario Invasive Plant Council’s Best Management Practices document for giant hogweed for more details. **Follow-up monitoring and removal of new growth is crucial for effective control of giant hogweed. Monitoring germination is recommended for at least 5 years and sites should be revisited at least three times a season.**