

Giant Hogweed

(*Heracleum mantegazzianum*)

Best Management Practice Technical Document for Land Managers

March 2017

- DISCLAIMER -

The intent of this document is to relay specific information relating to invasive plant control practices that have been advised by leading professionals across Ontario. This document 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. The timing suggested will differ throughout Ontario and should be tailored to your region.

Use this document after you have performed monitoring, assessed your priority areas and made sure that the control options listed in this document are allowed and appropriate on your site. For more information, please refer to the Ontario Invasive Plant Council's Best Management Practices document for giant hogweed.

Strategy and Cautions

- Prioritize hogweed in flower. The vegetative stage can be controlled the following year but flowering hogweed will produce seed and continue the population.
- In addition to the flowering hogweed, remove the outlying populations (isolated plants or satellite populations) first to prevent further spread.
- Small populations (≤ 400 plants) can be removed manually.
- Large populations (> 400 plants) are most effectively controlled using a systemic herbicide.
- Motorized tools (whipper snipper, mowers, etc.) are not effective for long-term control and pose a danger of sap exposure to operator and for anyone/anything walking through the site.
- Cutting the flowering heads is not effective as a control as a new flower can develop within 7–10 days of cutting.

SAFETY WARNING: Giant hogweed sap contains furanocoumarins, phototoxic (reacts with UV light to create a toxin) compounds which may cause phytophotodermatitis, 2nd degree burns, permanent scarring and/or eye damage. Extreme caution and protective clothing is essential when working with this species. Wear waterproof gloves, long sleeve shirts, pants and eye protection. When working with plants at chest level or higher, a face shield is essential. See the Ontario Invasive Plant Council's Best Management Practices document for giant hogweed for details.

Management of Small Populations (≤ 400 plants)

Digging is the most effective method for small populations or in environmentally sensitive areas where herbicides cannot be used. Remove giant hogweed in late April or early May when plants are typically less than 30 cm in height and easier to dig out. 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. Cut the plants in stages for manageability and safety. Work in pairs, if possible, with one holding the plant being cut and the other doing the cutting.

Stage 1: If the plants are flowering green, remove the flower heads first and carefully place them in black garbage bag for solarization (see below) to ensure seeds are not produced and released. **Note:** If the seeds have started to dry out 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 just below the bag to capture any seeds.

Stage 2: 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.

Stage 3: Dig the remaining plant out, ensuring that the entire root is removed or re-sprouting may occur. If the root is too thick and deep it may be necessary to make several visits to the same plant, cutting back re-growth and digging out missed root fragments.



Management of Large Populations (>400 plants)

Chemical control is the most effective method for managing large populations. Foliar, wick, stem injections or wipe applications of a systemic herbicide containing glyphosate or triclopyr are recommended. As systemic herbicides are translocated throughout an actively growing plant, herbicide applications must be applied during the growing season. Foliar sprays are most effective in spring and should never be done once the plant has already flowered. Pesticide drift may prohibit pesticide use near water.

Legal Considerations and Regulatory Tools for Chemical Control

Herbicides must be applied in accordance with the federal *Pest Control Products Act*, the Ontario *Pesticides Act*, Ontario Regulation 63/09 and in accordance with all label directions. Ensure you have the most current label and are aware of any re-evaluation decisions. The easiest way to find a chemical label is by using the PMRA's label search tool, which can be found by searching "PMRA label search" in any major search engine. Only licensed pesticide applicators are legally allowed to apply restricted pesticides in Ontario.

Ontario's *Cosmetic Pesticides Ban Act* prohibits the non-essential use of prescribed pesticides (Class 9) on land. Exceptions exist to allow the use of these herbicides for control of plants, such as giant hogweed, that are detrimental to the environment, economy, agriculture and/or human health. To qualify for these exceptions specific criteria must be met and appropriate ministry approval is required.

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

Public health or safety:	The sap of the giant hogweed plant poses a hazard to human health.
Agricultural:	Giant hogweed is listed as a Noxious Weed under the <i>Weed Control Act</i> .
Natural resource:	Giant hogweed can negatively impact the environment and reduces biodiversity.

For more information on these exceptions and applicable procedures, please refer to the Ontario Invasive Plant Council's Best Management Practices document for giant hogweed.

Herbicide Selection and Application

Professionals consulted for this document recommend using glyphosate, a broad spectrum, non-selective systemic herbicide which is translocated throughout an actively growing plant and kills the perennial root. Triclopyr-based products can also be effective, particularly when applied directly to the entire surface of leaves and stems during periods of active growth. Numerous applications may be needed to kill the root stalk. Chlorsulfuron/aminocyclopyrachlor-based herbicides have also proven effective. Experts consulted say iron-based herbicides are not effective.

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

Chemical Control Method	Chemical and Concentration	Timing and Application	Details
FOLIAR	Glyphosate (1 - 5% solution*).	Late April / early May. Follow with summer application for missed plants or those that may have re-grown.	Not effective if a plant is flowering.
	Triclopyr (3% solution**).	Late April / early May. Follow with summer application for missed plants or those that may have re-grown.	Must have growing leaves present.
WICK OR WIPE	Glyphosate (22% solution*).	Spring to fall.	Must have growing leaves present.
STEM INJECTION	Glyphosate (5 ml of 5% solution*).	Late May / early June or when flowering. Insert injection gun at about chest height but below a node on the stem.	For plants 1-2 m tall or plants that have bolted and are flowering.

*Based on a product containing 540 g/l of chemical. **Based on a product containing 755 g/l of chemical. Please read the label in full before use to ensure that these recommendations meet the requirements of the herbicide you have selected.



Disposal

Do not compost viable plant material (seeds and roots) at home or send to landfill. Burning is not recommended, as it is unknown if smoke as an exposure route is a problem. If your municipality has a high-heat compost program, plants can be sent there. Alternatively, solarize viable plant material by placing it in 3.0 MIL gauge black plastic bags, seal the bags tightly and leave them in direct sunlight for about 1-3 weeks.

Note: Using weaker, thinner bags will increase the chance of tearing and exposure to sap.

Rehabilitation and Monitoring

Control is much more successful when heavily infested areas, often with seed-saturated soil, are re-planted with native tree and plant species that are able to out-compete new growth. See the Ontario Invasive Plant Council's Best Management Practices document 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 3 years.