

Chontrol Peat Paste Demonstration for Invasive Buckthorn Control – FAQ's

Q: Why is a bioherbicide (Chontrol Peat Paste) being used in High Park?

A: City of Toronto is conducting a demonstration plot in High Park to review the potential use of the bioherbicide Chontrol Peat Paste, in the management of invasive buckthorn species. As part of an adaptive management process, City of Toronto staff are committed to reviewing new invasive species control options as they become available with the intent of improving methodology, and reducing the use of pesticide. This demonstration will allow us to test the feasibility of using this product in an urban environment on buckthorn management, and whether its use can be adopted within current operational practices.

Q: What is the Bioherbicide being used?

A: The bioherbicide being used is Chontrol Peat Paste, which contains the naturally occurring fungi *Chondrostereum purpureum*. This fungus is a plant parasite that can colonize fresh cut stumps or wounds of woody plants. Since 2009, Chontrol Peat Paste has been registered in Canada to control the resprouting and regrowth of alders, trembling aspen and other deciduous species.

Successful research trials in Quebec and Ontario have demonstrated the effectiveness of Chontrol Peat Paste in the control of buckthorn with mortality rates of 89%-93% over 16- 24months. Currently the addition of buckthorn to the Chontrol Peat Paste label is being reviewed by Health Canada's Pest Management Regulatory Agency (PMRA).

Q: Why is the City of Toronto removing buckthorn shrubs in High Park?

A: Invasive plants are being managed in High Park to protect the black oak savannah and woodland plant communities that are part of the Environmentally Significant Areas (ESA) and Areas of Natural and Scientific Interest (ANSI – Provincial designation). Common buckthorn (*Rhamnus cathartica*) is one particularly aggressive species being managed. This introduced species tolerates a range of soil and light conditions allowing it to successfully invade a variety of habitats displacing native plants. Buckthorn spreads easily with abundant berries that are carried widely by birds and other wildlife. Buckthorn also alters nitrogen levels in soil to create growing conditions better suited to its own growth, and discouraging the growth of native plants. By reducing the buckthorn population in High Park, native plant species will be encouraged to grow, and the sustainability of native habitats and species will be supported.

Q: What management strategies are used by the City of Toronto to control buckthorn?

A: Urban Forestry staff use a combination of physical, mechanical and chemical control methods to manage invasive species. Methods are regularly updated based on research, field observations, and Best Management Practices developed by the Ontario

Invasive Plant Council. Pesticides are used as a last resort when all other control methods have been proven ineffective or inefficient for control on a landscape scale. Methods have been developed to increase efficiency and minimize pesticide use by combining mechanical and chemical control whenever possible (i.e. cutting plants back and treating re-sprouts with pesticide when the root system has been weakened). In larger buckthorn populations that Urban Forestry staff are managing, the pesticide Garlon RTU (active ingredient triclopyr) has been proven to effectively control this species through application to cut stumps or basal bark treatment.

Q: Who will be performing the demonstration trial treatment?

A: This treatment is being carried out as part of a research trial intent on collecting data to support buckthorn's inclusion on the label, and to test the feasibility of its operational use in urban areas. Technical guidance will be provided by a forest pest management company BioForest (a subsidiary of Lallemand Plant Care), since 2015 they have been taking the lead on researching the use of *Chondrostereum purpureum* (product name Chontrol Peat Paste) for invasive buckthorn control.

City staff, trained and licensed in pesticide application, will be performing the removal of buckthorn and subsequent treatment of their stumps using the Chontrol Peat Paste.

Q: How does Chontrol Peat Paste Work?

A: Chontrol Peat Paste is a paste formulation applied to cut stumps within 30 mins. The active ingredient *Chondrostereum purpureum*, is a naturally occurring fungi that is found in the environment. It works by colonizing fresh cuts or wounds of woody species, causing Silver Leaf disease which ultimately inhibits growth and kills the plant. The fungi takes time to effectively colonize the cut stumps and impede the plant's growth, so in many cases the plant will send initial resprouts following the cut and in time the resprouts will die back from Silver Leaf disease.

Q: Are there any limitations in the use of Chontrol Peat Paste?

A: There are both environmental and management limitations to be considered prior to adopting the use of this product operationally:

- The product does not translocate and therefore must be applied to all stems requiring suppression (main stem, plus all coppiced, or root suckering stems).
- The height of the stump after cutting must be lower than 10cm to allow the fungus to colonize and eventually reach root crown.
- Conditions supporting fungal development are required for best efficacy (adequate shade cover). During application, the product must be kept cool and protected from extreme heat
- The entire contents of the container must be used on the same day after opening.
- Chontrol Peat Paste cannot be used near waterways, and should not be applied if heavy rainfall is forecast within 48 hours before or after application.

- There is a short application window (June/July) to achieve best results
- Chontrol Peat Paste may take up to 24 months to effectively kill buckthorn shrub resprouts

Q: Does Chontrol Peat Paste impact the surrounding vegetation or soil communities?

A: A research study completed by De Jong et al. (1996) determined that the use of *Chondrostereum purpureum* as a bioherbicide did not result in an increase in fungi activity in the environment. *Chondrostereum purpureum* activity was found to be similar to naturally occurring levels or even lower in test plots, so therefore would be highly unlikely to have negative impact on the local plant and soil community.

The active ingredient *Chondrostereum purpureum* is a naturally occurring fungus. It only colonizes fresh cuts or wounds of woody species, it will not impact non-targeted healthy woody stems.

Q: Is Chontrol Peat Paste safe for people, dogs, wildlife?

A: Direct contact with the product could cause moderate eye or skin irritation, but the potential exposure to people, dogs, and wildlife is very low due to product formulation and application method.

According to the product's Safety Data Sheet:

- *No ingredients are considered toxic, pathogenic, or infectious.*
- *There is minimal or negligible potential hazard to humans and non-target organisms (plants, insects, aquatic freshwater, estuarine and marine animals and wildlife), and to ground and surface water contamination through the use of this product according to label instructions.*

Q: What Personal Protective Equipment (PPE) is required?

A: According to the product label for Chontrol Peat Paste, the required PPE for application of the product is long sleeved shirts and long pants, waterproof gloves, waterproof shoes and socks. Staff may also choose to wear an additional disposable protective coveralls over top of their clothing to provide an additional layer of protection against environmental stressors (poison ivy, stinging plants, or insects) and to prevent product from getting on clothing while moving about the treatment area.

Q: Will there be signage posted on site during treatment?

A: The bioherbicide application will be carried out under a trial research permit granted by the Pest Management Regulatory Agency (PMRA). Following removal of buckthorn and stump treatment the permit will be posted at all entry points to the research plot so that park users can be informed about the research. Additional information signage about the buckthorn management will also be posted on site.