

KNOTWEED – TREATMENTS

ISC BC POST FORUM WORKSHOP

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TOPICS

1. Treatment methods
2. New Herbicide Guidelines for Control of Knotweed
3. Some Examples

Treatment Methods

1. Biological Control
2. Mowing
3. Targeted grazing
4. Digging and Excavating
5. Smothering
6. Other Methods
7. Herbicides

Mowing – (From the Guidelines)

2. Dwarfed Foliar Applications

- ▣ Due to the tall stature of mature knotweed, it is sometimes necessary to “dwarf” the plants prior to doing foliar applications. To dwarf the knotweed, mature stems are cut below the first node and disposed of by means that will eliminate the risk of regrowth (ie. Must not be allowed to touch soil or water until fully desiccated), then the remaining stem stumps will regrow at a shorter, stouter stature allowing for selective foliar applications to be easily completed. The applicator should ensure that there is sufficient leaf regrowth before making foliar applications (e.g.: At least one meter of vertical growth)

Digging and pulling





Excavation

1. Knotweeds have rhizomatous roots that may extend beyond the parent plant by up to 7 meters laterally and to a depth of 3 meters or more! Therefore a “buffer zone” needs to be established when digging out these plants as grubbing and chopping can stimulate and further encourage root development.
2. Completely contain any removed soil or plant material from knotweed infested areas

Smothering











Other Treatment Techniques

MESHTECH REMOVAL

Mesh Tech is a patented technology designed and developed in the UK by Dr Eric Donnelly and Japanese Knotweed Solutions Ltd. It is an environmentally-friendly method of controlling Japanese knotweed.



The main advantages of MeshTech are that it requires no chemical treatment

and it causes minimal impact on the sites where it is used. MeshTech can also provide protection of riparian areas against soil erosion – a particular problem where Japanese knotweed grows on riverbanks. It is an environmentally sound solution to a problem which all too often involves significant disturbance to contaminated sites – with damaging consequences to other flora (and fauna), and it is a cheaper solution than removal to landfill.

MeshTech works by using Japanese knotweed's aggressive growth against it – forcing the plant to sever its own stems as they grow (as shown in the

photographs below). The method also exposes the plant to increased damage by frost and rot – further weakening the plant. Eventual death of the plant results through exhaustion of the nutrient stores in the rhizome (root system).

Mesh Tech is specifically targeted at Japanese knotweed but it can also be adapted to treat giant hogweed. It leaves the overwhelming majority of other plant species relatively unaffected.

Haida Qwaii 2006

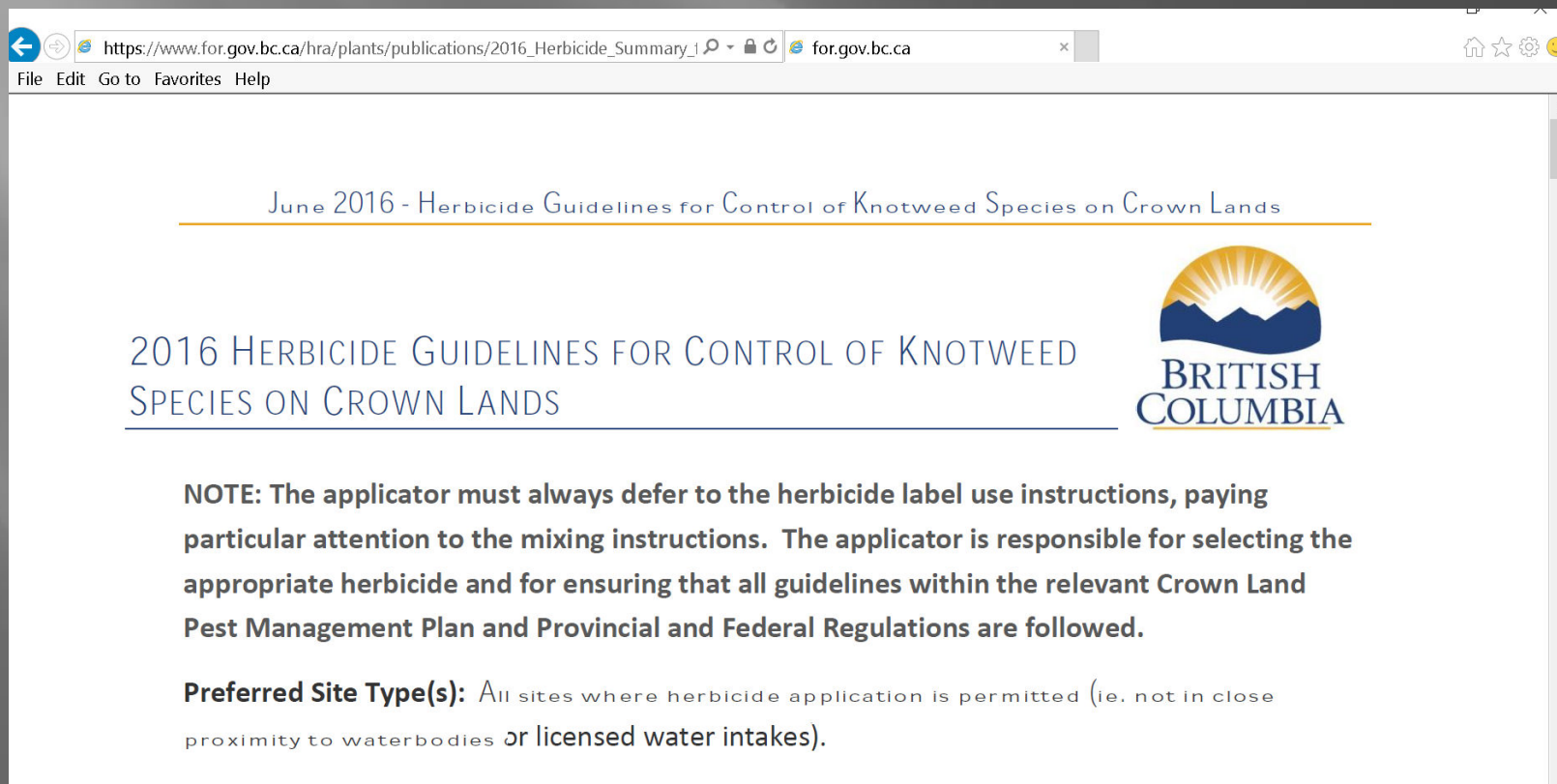


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June 2016 - Herbicide Guidelines for Control of Knotweed Species on Crown Land.


https://www.for.gov.bc.ca/hra/plants/publications/2016_Herbicide_Summary_for_Control_of_Knotweeds_on_Crown_Lands.pdf



The screenshot shows a web browser window with the address bar containing the URL: https://www.for.gov.bc.ca/hra/plants/publications/2016_Herbicide_Summary_for_Control_of_Knotweeds_on_Crown_Lands.pdf. The browser's menu bar includes "File", "Edit", "Go to", "Favorites", and "Help". The page content features a title "June 2016 - Herbicide Guidelines for Control of Knotweed Species on Crown Lands" underlined in orange. Below this is the title "2016 HERBICIDE GUIDELINES FOR CONTROL OF KNOTWEED SPECIES ON CROWN LANDS" underlined in blue. To the right is the British Columbia logo, which consists of a stylized sun rising over mountains with the text "BRITISH COLUMBIA" below it. A bolded note states: "NOTE: The applicator must always defer to the herbicide label use instructions, paying particular attention to the mixing instructions. The applicator is responsible for selecting the appropriate herbicide and for ensuring that all guidelines within the relevant Crown Land Pest Management Plan and Provincial and Federal Regulations are followed." Below the note, the "Preferred Site Type(s)" are listed as: "All sites where herbicide application is permitted (ie. not in close proximity to waterbodies or licensed water intakes)."

June 2016 - Herbicide Guidelines for Control of Knotweed Species on Crown Lands

2016 HERBICIDE GUIDELINES FOR CONTROL OF KNOTWEED SPECIES ON CROWN LANDS



NOTE: The applicator must always defer to the herbicide label use instructions, paying particular attention to the mixing instructions. The applicator is responsible for selecting the appropriate herbicide and for ensuring that all guidelines within the relevant Crown Land Pest Management Plan and Provincial and Federal Regulations are followed.

Preferred Site Type(s): All sites where herbicide application is permitted (ie. not in close proximity to waterbodies or licensed water intakes).

Hwy 7 - Chawathil 2011







Parking lot Chilliwack 2015



EXAMPLES

- ▣ Clients sometimes have time line requirements that are quite challenging.
- ▣ Costs with herbicides can be kept quite reasonable considering the overall costs of projects and consequences of not controlling knotweed.
- ▣ There are techniques that can be tested to improve efficacy. (e.g. walk down).

Consistency

- ▣ It takes multiple treatments over several years to remove knotweed.
- ▣ Contrary to the above, clearing 'deficiencies' in plans are sometimes the emphasis.
- ▣ Inappropriate advice can complicate matters.

Questionable Information

- ❑ Knotweeds are hard to kill and you need to have high concentrations of herbicides.
- ❑ Knotweeds spread fast and must be controlled quickly.
- ❑ Roundup is the preferred or only herbicide to use on knotweed.

Use the correct application rates – e.g. Roundup

- The literature indicates a range of application rates mostly between a dilution rate of .75 to 3%
- If your delivery rate is 400 liters per hectare then a 2% solution will give you an 8 L/ha application rate. Label rates for knotweed are at 8 to 9 litres/ha . With the size and stature of knotweed you need to be careful about your delivery rate.
- Look at the active ingredient content and the label recommendation.
- For spring treatments or treatments integrated with cutting when the plants are smaller dilution rates may be 2 or 3%. For late summer and fall treatments when there is a lot more foliage dilution rates may be 2% or possibly 1%.
- A slow kill may mean more translocation to deeper roots
- Stem injection which may be back in the tool kit soon has a delivery rate, on the U.S. label, of 5 ml per stem which equates to 16.4 L / ha on 3200 stems /ha
- In my observations - tolerance displays occur with both over and under dosage.

STOMATA PROPERTIES OF INVASIVE PLANT *Reynoutria japonica* Houtt. IN THE AREA OF TOPCIDER RIVER SIDES

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Abstract: *Reynoutria japonica* Houtt. (Poligonaceae) is one of the most invasive plants with a great spreading potential and it was ranked in a group of 100 the most invasive organisms by the International Union for Conservation of Nature (IUCN). It is very common and with luxury growth on the sunny, open and wet habitats. It can be found near the roads, railways, river banks and on degraded urban areas. In the paper

the more sunny sites in compare with plants in shade. Number of stomata was larger on the lower side than on the upper side of leaves in all populations and ecological conditions.

Stomata analysis can help in better understanding of physiological processes, water regime and photosynthesis. The damages of invasive plants are the great challenge in environment protection and for that reason it is important to have detailed information of their ecological and physiological properties, reproduction, spreading, taxonomy and other characteristics which can help to found the best measures how to control and destroy them.

Miami River Example



Damage to Knotweed 2-10-10
This knotweed site will be
treated with an herbicide.
Avoid contact with this
24 hours of application.
Authorized by Washington State Department
of Ecology (WSDOE) under the Washington State
Herbicide Use Act (WSHUA)
7/22/10 C. B. B. Inc.



0.10 and 0.11
This treatment site will be treated with an herbicide.
Avoid contact within
24 hours of application.
Excess herbicide is to be collected
within the treatment site. Contact 800-877-7825



NOTICE
No Parking
No Stopping

Langley 2016



Surrey 2016





KG 7406



solo

solo
430-2G











Herbicide Recommendations in the 2016 Guidelines

Milestone – aminopyralid

Garlon – triclopyr

Roundup, Vantage, etc. – glyphosate

Arsenal - imazapyr