

CREC Concerns Re: Proposed Gypsy Moth Spraying (Foray 48B)

Campbell River's Mayor and Council are identified as a stakeholder in Dec.19 letter from Forest Health Officer Tim Ebata re: proposed Gypsy Moth spraying. There is no other form of legitimate consultation proposed by the ministry – citizens are only offered minimal “engagement” for the purposes of information at a meeting to be announced. The city, on the other hand, has been asked to provide feedback, questions and concerns.

Non-invasive trapping methods have been used effectively in other communities to address the Gypsy Moth. CREC therefore requests the city insist Campbell River be given the opportunity to apply this method instead of the risky, invasive ground spraying.

This document summarizes CREC's broad concerns about this program, the risks it poses to human and ecological health, and its highly undemocratic nature.

1. Foray 48B product description and use

Bacillus thuringiensis subsp. kurstaki strain ABTS-351..... Potency: 10,600 Cabbage Looper Units (CLU)/mg of product (equivalent to 10 billion CLU/kg).

<https://www.valent.ca/products/foray/label-msds.cfm>

Other Ingredients are undisclosed as Proprietary Information, however according to the Green Party of New Zealand's fact sheet on the product [

<https://home.greens.org.nz/features/bacillus-thuringiensis-bt>], it has contained:

- **Sodium Hydroxide**, more commonly known as lye, causes "severe corrosive damage to the eyes, skin, mucous membranes and digestive system Breathing sodium hydroxide dust or mist leads in mild cases to irritation of the mucous membranes of the nose ... and in severe cases to damage of the upper respiratory tract.
- **Potassium Phosphate**, was registered by EPA as an active pesticide ingredient.
- **Methyl Paraben**, was registered by the US EPA as an active pesticide ingredient.
- **Sulfuric Acid**, can cause severe deep skin burns and permanent loss of vision. When inhaled as a mist, sulfuric acid may cause severe bronchial constriction, and bronchitis.
- **Phosphoric Acid**, is an irritant to skin and mucous membranes, and its vapors may cause coughing and throat irritation.

A UBC study [Teschke *et al* -

<https://open.library.ubc.ca/cIRcle/collections/facultyresearchandpublications/52383/items/1.0048188>]

makes this point: “Fine spray droplets which stay suspended in air include all components of the insecticide formulation, and can be inhaled. Therefore, identification of all agents in the formulation is important. A cost-effective method to ease public concerns about the constituents of the formulated Foray 48B would be the release of this information by the manufacturer.”

The same UBC study determined some of the volatile organic compounds used in Foray 48B – including Thietane; acetic acid, 2-propenyl ester; 2-butanone- 4-acetoxy; 1,5 hexanediene-3,4-diol, 2,5-dimethyl; cyclotrisiloxane, hexamethyl; cyclotetrasiloxane, octamethyl (D4); cyclohexasiloxane, dodecamethyl (D6); Trisiloxane; butylated hydroxy toluene; Benzoic Acid; and Cyclohexasiloxane, dodecamethyl.

Some of these compounds can cause adverse health effects, depending on concentrations and exposure. We don't know the degree of risk they pose to human health as the formulation remains protected under corporate secrecy. That very fact is unacceptable. **How can we be asked to accept the product is harmless when we are kept from knowing what's in it?**

Finally, The Canadian product supplier, Valent Canada, Inc, Label [<https://www.valent.ca/products/foray/label-msds.cfm>] restricts residential spraying to aerial spraying only. It is illegal to use any pesticide in Canada other than as directed by the manufacturer. **Why is Campbell River being targeted for an unapproved urban ground spraying program?**

2. Human Health Risks

In his letter to Mayor and Council, Tim Ebata made the bold, sweeping statement: **“Humans, pets, birds, bees, plants (including berries, leaves and bark) and other wildlife are not affected.”** The available evidence - summarized below suggests this is not the case.

Risk	Source
Sensitization (allergic reaction from exposure)	Manufacturer's warning - http://www.evenspray.com/linked/foray_48b_abel.pdf
Eye Irritation	Manufacturer's warning
Toxicity - treat symptomatically	Manufacturer's warning
"Bacillus Thuringiensis toxin (Btk) can be fatal to people using anti-ulcer drugs."	Dr. Joseph C. Cummins, Assoc. Professor University of Western Ontario – included in evidence for BC Environmental Appeal Board - Appeal No. 95/28 Pesticide https://crocwebcom.files.wordpress.com/2018/02/report-our-case-against-moth-spraying.pdf
"Foray 48B contains compounds additional to B.t. that are potentially harmful to man and animals, such as sodium hydroxide which is on an EPA hazards list"	Dr. Bryan P. Reirne, Professor Emeritus Simon Fraser University – included in evidence for BC Environmental Appeal Board - Appeal No. 95/28-Pesticide https://crocwebcom.files.wordpress.com/2018/02/report-our-case-against-moth-spraying.pdf
"There have been reports of health effects related to the spraying that occurred on April 15th. At least two individuals who were directly exposed to the spray have sought care in emergency departments. Health complaints from past sprays have included headaches, eye irritation, wheezing, coughing, shortness of breath, and dermal and GI (gastrointestinal) symptoms."	2015 The Fraser Health Authority advisory to doctors to be on the lookout for a long list of potential health complaints from patients related to aerial gypsy moth spraying in Surrey and Delta. https://www.pressreader.com/canada/vancouver-sun/20150430/28152224641656
Headache, insomnia	Health Canada Incident Report Number 2015-4308 (This and other Health Canada incident reports viewable here: http://pr-rp.hc-sc.gc.ca/pi-ip/result-eng.php?&1=0&2=501&3=ir&4=a&5=1&6=DESC&7=BACILLUS%20THURINGIENSIS%20SUBSPECIES%20KURSTAKI%20(ALL%20STRAINS)&8=C)
Sore throat, Runny nose, Bronchitis	Health Canada Incident Report Number 2015-4307
Abnormally fast heart rate, Rash	Health Canada Incident Report Number 2015-4505
Vomiting	Health Canada Incident Report Number 2015-4304
Nose bleed, Difficulty Breathing	Health Canada Incident Report Number 2015-2564
Burning skin, Edema, sore throat	Health Canada Incident Report Number 2015-2363

Moreover, the Environmental Appeal Board [EAB APPEAL NO. 95/28 – PESTICIDE] stated:

“The panel is acutely aware that the existing published studies on this pesticide relate mainly to its short-term infection effects. They show no adverse effects. However, **there are almost no studies on long term effects.**” [emphasis added]

The BC Government Ground Spraying information states, “Both residents near the spraying area and the person applying the spray are more exposed to the insecticide than with aerial spraying, though Btk formulations do pose minimal health risks.”

<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/invasive-forest-pests/gypsy-moth/spraying-with-btk>

There are those with compromised immune systems, elderly citizens and children in the proposed spray area. The spray area also borders the of École Mer-et-montagne school and grounds, which may be in the spray drift area.

In its 1996 decision, the Environmental Appeal Board [APPEAL NO. 95/28 - PESTICIDE] stated, “With smaller weight, and developing systems, **children are likely to be more susceptible for all potential health effects.**” [emphasis added]
<http://www.eab.gov.bc.ca/pest/95-28.pdf>

3. Ecological Risks

The manufacturer’s own directions include the following warning:

DO NOT apply this product through any type of irrigation system. DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes. As this pesticide is not registered for control of pests in aquatic systems, DO NOT use to control aquatic pests.

The proposed spray zone in Campbell River sits directly uphill from Simms Creek - a fish-bearing stream and wildlife corridor. We also know from a UBC study [Teschke *et al*] that “Drift of the *Btk* droplets was detected throughout a zone up to 1 km away from the spray area.” CREC is concerned that the application of Foray 48B in the proposed area would reach Simms Creek by both aerial drift and ground flow, posing a risk to aquatic life there.

Moreover, according to the Environmental Appeal Board [APPEAL NO. 95/28 – PESTICIDE], “Material from the Permit Holder and B.C. Fish and Wildlife Management acknowledged that BTK spray effects are significant on non-target species - particularly, other moths, butterflies and insects. It can depress both numbers and species richness for at least 3 years following treatment.”

A subsequent multi-year study by the provincial government [https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/forest-health/forest-health-docs/gypsy-moth-docs/2003_final_report_-_nontarget_leps.pdf] showed that that the impact of Btk on non-target Lepidoptera was more severe at 12-13 months post-spray than 1-2 months post-spray, and, more than a year after application, the affected species had not yet begun the recovery process. At 12-13 months post-spray, four additional

species were shown to be reduced by 1999 Btk applications, indicating that some effects went undetected in 1999.

The data in 2000 also indicated that the total number of caterpillars in the spray-zones was reduced by 53.5% and 84.0% on snowberry and Garry oak, respectively. These estimates are considerably higher than those of 1999, which were 66.3% and 29.1% on snowberry and Garry oak, respectively. Thus, monitoring non-target Lepidoptera in 2000 was important and supported the hypothesis that the full extent of the pesticide side effects would be manifest only in the long-term.

4. Economic Argument

There is little information available about the specific economic threat or other impacts posed by the gypsy moth. The decision to proceed with any program which poses a threat to human and ecological health needs to involve the weighing of risk vs. reward – or avoidance of a negative impact. In our view that due diligence has not been done here. The ministry has not even attempted to make its case for the need for this program.

Conversely, when Leona Adams asked Forest Health Officer Tim Ebata if Campbell River could have a pheromone baited trapping program as opposed to ground spraying, he told her that was unlikely, purely because it would be too expensive. CREC has researched the cost of the traps required and learned that they cost approximately \$20 per unit. If community volunteers could assist with the program – something CREC would be happy to coordinate – we are confident this alternative program could be carried out at minimal cost.

Moreover, should cost be the sole basis for ministry staff to force an invasive ground spray program on a community? Are there not other values we should be considering in this equation – such as human and ecological health, property owners' rights and peace of mind?

5. Lack of grounds for spray program vs. non-invasive alternative

Although FLNRO searched for them, **no Gypsy Moth egg masses were found in Campbell River** [Tim Ebata – February 16, 2018 conversation with Leona Adams, President, CREC].

The proposed Campbell River ground spray program is based solely on the ministry having found 8 moths in a pheromone baited trap. Yet the Environmental Appeal Board [APPEAL NO. 95/28 – PESTICIDE] stated “In practical terms, eradication is considered **when egg masses are found** in an area where males have also been trapped.”

“The appellants' evidence indicates that the U.S. Department of Agriculture recommends high density trapping for gypsy moths when there are less than 10 egg masses per acre, and the sterile insect release method when there are less than 2.5 egg masses per acre. In this case, no egg masses were found.”

“If the same benefits could be achieved by an alternative risk-free method then surely the use of the risk method would be considered unreasonable.”

“The Permit Holder's materials consider and reject generally what appear to be the alternative methods of using high density pheromone trapping or egg hunts to destroy egg masses. This seems

unreasonable because the third management objective in its draft policy is to seek - “new, proven, practical and environmentally sound methods of eradicating Gypsy Moths that further reduce non-target effects.”

“Neither the Permit Holder nor the Respondent considered an expansion of the current pheromone trapping program. Neither did they consider using both government personnel and volunteers to search for and destroy egg masses with the use of incentives as has been suggested in previous Environmental Appeal Board decisions.”

<https://crecwebcom.files.wordpress.com/2018/02/95-28-environmental-appeal-board-1996-decision-to-cancel-btk-spraying-for-gypsy-moth-in-new-westminster.pdf>

Even the government acknowledges, “Ground spraying is less effective when tree crowns are very high or dense. Other disadvantages of ground spraying:

Ground spraying is often intrusive, as it requires entry onto private land, and trucks and sprayers are set up in the streets for several days. Though ground spraying is focused specifically on host vegetation, high localized drift can occur during daylight hours as the wind fluctuates.”

<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/invasive-forest-pests/gypsy-moth/spraying-with-btk>

Non-pesticide methods are provided on the BC Government’s website [<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/invasive-forest-pests/gypsy-moth/alternative-treatments>]

These methods have been used successfully in the following communities:

- Sechelt
- Sidney
- Gabriola Island
- Fairfield

<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/invasive-forest-pests/gypsy-moth/treatment-history>

Finally, Professor Judith Myers, Entomologist, Associate Dean of Science, University of British Columbia, has noted, “If the gypsy moth (or any other insect) finds conditions under which it can thrive and multiply, no amount of spraying will prevent it from doing so. The spraying will only damage the eco system and hurt people.” [p.5]

<https://crecwebcom.files.wordpress.com/2018/02/addendum-our-case-against-moth-spraying.pdf>

6. Lack of Democracy

The government’s BtK spraying program is highly undemocratic and deprives citizens of important civil liberties. In recent years, in response to successful, science-based appeals at the EAB, a series of measures have been taken to strip citizens of the legal recourse available to them:

- 2010 Integrated Pest Management Act (IMPA) essentially removed oversight of EAB re: aerial spraying programs [<https://www.wcel.org/blog/no-appeal-aerial-pesticide-spraying-bc>]
- 2010 IMPA does not require a Pesticide Use Permit for ground spraying of Btk formulations.
- Under the BC Plant Management Act, an Order in Council can be issued by the Lieutenant Governor authorizing entry onto private property. [West Coast Environmental law]

Forest Health Officer Tim Ebata went as far as to confirm in his recent phone conversation with Leona Adams that these steps had been **taken by ministry staff to circumvent frivolous appeals by opponents of the program**. This despite the fact that the EAB, a judicial body, had found in favour of some plaintiffs based on evidence.

This steady erosion of citizens' rights is deeply troubling and has been enabled by the lack of public knowledge of this program and the ephemeral nature of it. People only learn about it when it is about to affect them – and they are given very little time to do anything about it. This needs to change and will only change when citizens work with local governments, media, and legal resources to ensure that the province takes a precautionary, science-based approach to addressing the Gypsy Moth.

Summary

Despite the government's assurances to the contrary, ground spraying with Foray 48B poses human health and ecological risks. It is highly invasive, infringing on homeowners' private property. Its effectiveness is suspect and the justification for its use, in this instance, is simply not there.

The case for significant economic impacts from the Gypsy Moth has not been made. Egg masses – a key indicator typically required for such a program – have not been found in Campbell River.

There are other potentially more effective, less risky and invasive methods available for addressing the Gypsy Moth, such as pheromone-baited trapping and volunteer-driven egg eradication.

CREC would be happy to help coordinate local resident volunteers to implement such a program.

We therefore ask, on behalf of the residents, that Mayor and Council intervene with the Province to initiate trapping or a non-pesticide method of treatment for the Gypsy Moth in Campbell River, instead of spraying.