



## **ORGANIZING AN AERIAL SPRAYING PROGRAM FOR FOREST INSECT DEFOLIATORS (2015)**

This information is prepared for landowners who are considering protecting their woodlots from the effects of defoliating insects. In many woodlots, aerial spraying may be the most economical and effective means of protection.

In Ontario, aerial spraying is regulated. The company (aerial applicator) hired to treat your property must be licensed and insured. They must also operate in accordance with the Pesticides Act administered by the Ontario Ministry of the Environment and Climate Change. Only insecticides registered for aerial application can be used.

### **How Do I Contact an Aerial Applicator?**

There are not many aerial spray companies in Canada. A list of companies who provide this service in Ontario is attached. This is not a complete list of all applicators as the list of companies conducting this type of work changes often.

### **How Much Will it Cost to Spray my Woodlot?**

The cost of spraying depends on several factors. The most important are: the type of insecticide used, the size of the property, the distance from an airfield or helipad, and the proximity to other areas to be sprayed. If multiple landowners work cooperatively, they may be able to spread the fixed costs (such as ferrying the aircraft to the area) over a greater number of hectares, thereby reducing the cost/hectare.

### **When Will Spraying Occur?**

Every insect and insecticide situation has its own most effective period when the spraying will be most effective. As a general guideline, though, spraying should be conducted when insects are actively feeding but before tree defoliation becomes visible. This is usually when the insects are very small, between the second and fourth instar, for gypsy moth, forest tent caterpillar, or budworm caterpillars. For products such as B.t.k., which must be ingested by the insect, there needs to be sufficient foliage for the spray droplets to land on where they can be eaten by the caterpillar. Typically, this means spraying starts when the leaves have reached 25%-35% of their mature size.

The best time for spraying also depends on weather conditions. There should be sufficient drying time before or after precipitation (approximately 6 hours for B.t.k.), winds should be light but not zero, and temperatures below 20°C with a high relative humidity (above 50%). Good spray conditions typically occur in early morning (just after dawn) and sometimes in the early evening (just before dusk). Anticipated weather conditions will influence spray timing as well, and may advance or delay the timing of the spray.

Thus, the ideal conditions for spraying are:

- when the caterpillars are young and most vulnerable to the insecticide
- before the insect can do significant feeding damage
- after the leaves have reached 25% to 35% of their full size
- under weather conditions of light winds, cool morning temperatures, high relative humidity, and no rain for 6 hours prior to or after the spraying.

The contractor will be able to provide further details of his or her precise operating conditions.

### **What Will Happen During Spraying?**

The spray aircraft will fly in successive swaths, about 15 metres (50 feet) above the trees at speeds of 120 - 160 km/hr (75 - 100 mph). You will not see large amounts of liquid trailing from the aircraft. The total spray mixture is rarely more than 2.5 litres per hectare (less than 1 quart/acre). The spray is deposited as a fine mist.

### **How Do I Plan a Spray Program and Obtain the Services of an Aerial Applicator?**

The following steps briefly outline procedures. If you need assistance at any stage, consult your local Ministry of Natural Resources and Forestry District Office.

1. Identify the insect that you wish controlled in your woodlot and whether a control program is needed. Consider how high the insect population is expected to be, and how severe its impacts might be on the forest (e.g., tree or forest health, tree growth, aesthetic values, recreational values, wildlife habitat).
2. Determine the area you wish treated. On a topographic map (scale 1:50,000) or an aerial photograph, mark the exact area that you wish to have sprayed. When you choose boundaries, use landmarks that are visible from the air, such as edges of fields or rocky outcrops.
3. Carefully calculate the acreage or area of forested property you wish treated -called the spray block(s).
4. Speak to other landowners in your area who may also be interested in protecting their woodlots. If you all work together you can reduce your cost per hectare.
5. Make a list of landowners in your locale who are interested in spraying. The list should include the location of each property by county, township, lot and concession, the area of each spray block, and the insect you wish controlled.
6. Appoint one or two spokespeople for the group. At this point the spokespeople take over.
7. Prepare a tender to be forwarded to aerial applicators introducing your group. The tender should contain:
  - a) The insect you wish controlled.
  - b) The specific insecticide or type of insecticide (biological or chemical) desired.
  - c) A request for the applicator to provide you with an *Insecticide product label* and a *Materials Safety Data Sheet (MSDS)* for that product.
  - d) A copy of the map(s) or digital image(s) of the property to be treated.
  - e) A request for a price quotation, per hectare, to treat all the properties on the list.

- f) A request for a quotation for any additional area(s).
  - g) The deadline for receipt of written quotations.
  - h) A request for information on the applicator and references.
  - i) A statement that the applicator will be liable for all damages incurred as a result of the operation, i.e., "*hold harmless the landowner.*"
  - j) Indicate who is responsible for posting the spray block (see #14 below).
  - k) A statement that the applicator has the appropriate licenses and insurance.
8. Send the tender with the details to several companies. Prices can vary considerably.
  9. Consider all quotations; the lowest is not necessarily the best. Check references before you select an applicator.
  10. Discuss terms, timing of payments, and performance guarantees with prospective applicators.
  11. Consult your group and select an applicator.
  12. Notify the successful applicator.
  13. Notify neighbours of your intentions to spray. A timely explanation of methods and purpose may avoid confrontation. (You do not require your neighbour's permission). However, if problems are encountered, bring them to the attention of the aerial applicator. (see #7.i above)
  14. Ensure the spray block is posted at the time of spraying (contact the local MOECC office for requirements).
  15. Assess the effectiveness of the treatment (i.e., did it work?).

It is strongly recommended that landowners who wish to spray in the spring get started in the fall. Ideally, you should be approaching applicators no later than February. As an alternative, landowners can hire a contractor or forestry consulting firm to organize and conduct the spraying on their behalf as a *turnkey operation*. This could include forecasting the insect population and potential impacts of the insect, selecting the insecticide, mapping out spray blocks, hiring the aerial applicator, determining the best time to start spraying, posting the spray blocks, and assessing the effectiveness of the spray.

For more information contact your local Ministry of Natural Resources and Forestry District Office.

Fact Sheet on The Regulation of Pesticides in Canada:

[http://www.pmra-arla.gc.ca/english/pdf/fact/fs\\_pestreg-e.pdf](http://www.pmra-arla.gc.ca/english/pdf/fact/fs_pestreg-e.pdf)

**AERIAL APPLICATORS/PEST MANAGEMENT CONSULTANTS  
PARTIAL LISTING**

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**BioForest Technologies Inc.**

59 Industrial Park Crescent  
Sault Ste. Marie, ON P6B 5P3  
Attention: Mr. Joe Meating  
Tel: 705-942-5824  
Fax: 705-942-8829  
Toll free: 1-888-7378  
Email: [jmeating@bioforest.ca](mailto:jmeating@bioforest.ca)

**\* Can-Ag Applicators**

2774 Regional Rd 25  
Delhi, ON  
N4B 2W5  
Attention: Mr. Larry Lysiuk  
Tel: 519-428-0627  
Fax: 519-428-1952  
email: [ca@nageon.aibn.com](mailto:ca@nageon.aibn.com)

**Forest Protection Ltd.**

Fredericton Airport (CYGC)  
2502 Route 102 Hwy  
Lincoln, NB  
E3B 7E6  
Tel: 506-446-6930  
Fax: 506-446-6934  
Email: [info@ForestProtectionLimited.com](mailto:info@ForestProtectionLimited.com)

**General Airspray Ltd.**

R. R. #1  
Lucan, ON NOM 2J0  
Attention: Mr. Paul Hodgins  
Courier: Lot 36, Conc.3  
Diddulph, Twp.  
Tel: 519-227-4091  
Fax: 519-227-1588  
email: [genairspray@hotmail.com](mailto:genairspray@hotmail.com)

**Jim's Flying Service Ltd**

39 Cranberry Road  
Tillsonburg, ON  
N4G 4G8  
Attention: Mr. Jim Horvath  
Tel: 519-842-3898  
Email: [jimsdf@sympatioco.ca](mailto:jimsdf@sympatioco.ca)

**\* Supermarine Aircraft Inc.**

52750 Nova Scotia Line  
R.R. #1  
Port Burwell, ON  
N0J 1T0  
Attention: Mrs. Sharon Martindale  
Tel: 519-874-4990  
Fax: 519-874-4980  
email: [superair@amtelecom.net](mailto:superair@amtelecom.net)

**\* Universal Helicopters**

Box 529 Station C  
Happy Valley - Goose Bay, NL  
A0P 1C0  
Attention: Mr. Geoff Goodyear  
Tel: 709-896-3541  
Fax: 709-896-9344  
e-mail: [goodyear@uhnl.nf.ca](mailto:goodyear@uhnl.nf.ca)

**Zimmer Air Service Inc.**

9706 Burk Line  
Blenheim, ON NOP 1A0  
Or:  
510 Wieben Cres.  
Thunder Bay, ON  
P7E 6M9  
Attention: Mr. Paul Zimmer  
Tel: 519-676-9550  
Fax: 519-676-9552  
email: [info@zimmerair.com](mailto:info@zimmerair.com)

**Wilderness Air Ltd.**

Wawa Municipal Airport  
27B Hwy 101  
P.O. Box 259  
Wawa, ON P0S1K0  
Tel: (705) 856 1660  
Fax: 705-856-0274  
Toll free: 1-888-554-3662  
email: [heli@wildernesshelicopters.com](mailto:heli@wildernesshelicopters.com)

UPDATE @ July 2020 –these (\*) companies may not be operating any longer