



# Environmental Appeal Board

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## APPEAL NO. 95/28 - PESTICIDE

In the matter of an appeal under section 15 of the *Pesticide Control Act*, R.S.B.C. 1979, c. 322.

**BETWEEN:** A. CAROL ANDERSON

KIM MacLEAN

DOROTHY BEACH

RICHARD McBRIDE PARENT TEACHER ASSOCIATION

CHERYL C. ADAMS

ALAN and RAELENE HUGHES

RICHARD and MONIKA AUGER

JAYE PARTRIDGE

MORLEY WEBB

LYNDA FLETCHER-GORDON

THAIS S. HALFORD

**APPELLANTS**

**AND:** DEPUTY ADMINISTRATOR, PESTICIDE CONTROL ACT

**RESPONDENT**

**AND:** MINISTER OF AGRICULTURE and  
AGRI-FOOD CANADA

**PERMIT HOLDER**

**BEFORE:** A Panel of the Environmental Appeal Board  
Judith Lee, Panel Chair

**HEARING:** Conducted in writing; concluded April 9, 1996

This is an appeal against the Pesticide Administrator's decision of January 30, 1996, to issue Pesticide Use Permit 214-033-96 authorizing the ground application of FORAY 48B (*Bacillus thuringiensis var. kurstaki*) ['BTK'] for use on both public and to a limited extent on private lands within a 20 hectare area in the city of New Westminster.

## APPEAL

The authority for the panel of the Environmental Appeal Board to hear this appeal is found in the *Environment Management Act*, and in section 15 of the *Pesticide Control Act*.

The grounds for appeal from the appellants included concerns for human and environmental health; efficacy since the majority of lands in the area may be excluded from spraying or those subject to spraying are non-supportive of gypsy moth; criteria for a BTK spray program, and alternatives.

The order requested was that the permit be cancelled.

This appeal was considered by way of very extensive evidence and submissions in writing from some of the appellants, the Respondent and the Permit Holder. The evidence from the parties included summaries of studies with references given where the summaries arose from specific medical and scientific journals.

On the application of several of the Appellants, the Board granted a stay against use of the above-noted permit up to and including April 15, 1996, or until the date of the Board's decision, whichever is earlier.

## **BACKGROUND**

Pheromone baited sticky traps have been used in B.C. since 1978 to identify developing populations of gypsy moths.

In the New Westminster area, these pheromone traps have been used for many years and in 1995, initially 5 and finally a total of 8 male gypsy moths were found in one pheromone trap. The trap density in the area was 64 traps per square mile. Additional infill traps were added based on the finding of 8 male moths but no additional moths were trapped.

DNA analysis established they were the North American/European type of gypsy moth. A search failed to turn up any egg masses.

This information about 5 male moths and no egg masses was presented to the Plant Protection Advisory Council, Gypsy Moth Committee. In minutes dated November 14, 1995, the Plant Protection Advisory Council recommended they "apply for spray block approximately 20 ha. Treat by ground spray regardless if egg masses are found as we are very close to the centre of the population;" i.e. an eradication program be undertaken.

As a result, Agriculture Canada considered that there was an infestation of European gypsy moth in the area which should be treated to prevent the spreading of gypsy moths.

On November 30, 1995, Agriculture Canada applied for a pesticide use permit authorizing the application of BTK and it was issued on January 30, 1996.

The permit authorized BTK pesticide use "on provincial and municipal lands, and those private lands used for forestry, transportation or public utility purposes". It was proposed that there would be up to four applications by using a ground application by rotary mist blower and hose/nozzle.

## **DISCUSSION**

The issue for decision arises under the Pesticide Administrator's power under section 12(2) of the *Pesticide Control Act*; namely, whether or not the Administrator was correct to issue a permit and particularly, his determination that in this particular instance BTK use will not result in an unreasonable adverse effect.

## Applicable Law

As one Appellant pointed out, the correct approach for the Environmental Appeal Board on these appeals has been considered by the Supreme Court of British Columbia and the B.C. Court of Appeal in Canadian Earthcare Society vs. Environmental Appeal Board CA008290 [June 1988].

Taggart, J. A. found that

“Should the Board find an adverse effect, (i.e. some risk) **it must weigh that adverse effect against the intended benefit**. Only by making a comparison of the risk and benefit can the Board determine if the anticipated risk is reasonable or unreasonable...**Evidence of alternate methods will also be relevant to the issue of reasonableness**. 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.” [emphasis added]

In addition, Taggart, J. A. found that the Board may correctly

“...hear evidence on toxicity to the extent that the evidence showed that the specific site in question prevented safe application of the pesticide... [and] evidence whether the proposed pesticide use was contrary to registration intent and restrictions or that the Permit Holder was unable to apply the pesticide safely.”

### **Is there evidence of an adverse effect, (i.e. some risk)?**

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.

From the human health prospective, there is no dispute that there is an elementary school clearly marked within the 20 hectare spray area. With smaller weight, and developing systems, children are likely to be more susceptible for all potential health effects.

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.

The Material Safety Data Sheet FORAY<sup>R</sup>48B produced by Novo Nordisk indicates that repeated exposure via inhalation can result in sensitization and allergic response in hypersensitive individuals. Both the appellants and the Permit Holder referred to studies that ground spray workers and others from the general population reported skin rash and other immune, allergic and sensitization responses such as dry, itchy skin; red, burning eyes; dry sore throat; cough and tightness in the chest - particularly where there was a prior history of allergies.

Some of the ground spray workers remained culture positive for prolonged periods of time although most remained culture positive for only a few days.

The Appellants tendered numerous documents including summaries, published reports, materials as well as letters from university associated researchers and doctors specializing in respirology, allergy and immunology. This documentary evidence indicates that BTK is likely respirable in mammals and raises the possibility of lung injury. Other evidence shows that it is a 'moderate' irritant.

The panel therefore finds evidence that BTK use will have some adverse effect and some risk.

### **Weighing the adverse effect against the intended benefit.**

B.C.'s highest courts direct that only by making a comparison of the risk and benefit can the Board determine if the anticipated risk is reasonable or unreasonable, and that evidence of alternate methods will also be relevant to the issue of reasonableness.

In other words, it is necessary to do a balancing between the intended benefit of a pesticide spraying versus its potential damage to man or the environment.

Both the Respondent and the Permit Holder indicate that the intended benefit of a ground spray is the eradication of gypsy moth in this area.

However, the Panel finds that the proposed ground spraying of BTK will not achieve that goal. It will not be efficacious because the evidence shows that using BTK ground spray will not effectively treat the area and eradicate the gypsy moth.

Jon Bell, the Permit Holder's representative, indicated in a newspaper article dated March 24, 1992 that ground spray is unlikely to reach eggs in the upper part of trees.

The Respondent did not dispute the Appellants' point that the majority of the potential moth habitat - buildings and grounds in the area is on private residential property which may not be sprayed without the owner's permission and is excluded by the permit. The Respondent and Permit Holder did not dispute that most of the public property is paved roads and sidewalks, grass and a school yard - which are unlikely to be moth habitat according to the Permit Holder's information.

The Permit Holder's own evidence indicates that BTK must be ingested by the moth larva to kill it, and mere contact is not effective. They say it is inactivated by sunlight within 30 to 60 minutes, and also say ground spray requires much longer intervals of good weather to be effective, because the necessary dilutions prevent formation of a rain resistant skin that keeps the droplet liquid.

In addition the Respondent's own Draft Management Plan sets out 7 management objectives in keeping the province free from the North American gypsy moth. Two of these require the prevention of the shipment of or the interception of infested goods and some form of quarantine/inspection. While the Permit Holder endorses a

preventative approach to reduce egg introductions, no 'border station' or similar program has been implemented despite an active gypsy moth program since 1991.

Without an effective interception program, the Panel finds that ground spray is unlikely to achieve its stated goal of complete eradication and the intended benefit is at most a reduction of the gypsy moth population. The facts are that the ground spray is occurring without an effective interception program, and is unlikely to reach all the gypsy moth habitat in this area. Hence, the Board finds that ground spray is unlikely to achieve its stated goal of complete eradication. The intended benefits at most, are a partial reduction in the gypsy moth population.

Further, although the Permit Holder claims considerable success using spray eradication, their own history of gypsy moths in B.C. would indicate the evidence is weak in showing a link between reduced moth populations and BTK spraying. Page 3 states in part:

At least 102 separate introductions have occurred in the past 18 years in which 963 male gypsy moths have been trapped at 96 locations...eight were sprayed too recently to determine if they have been eradicated and three are still present but have not been sprayed. **Of the remaining 80 introductions, 65 (81.2%) died out by themselves** and the remaining 15 (18.8%) were sprayed and successfully eradicated.

In weighing the risk against the intended benefit, the Panel also noted that there was no evidence of a site-specific consideration in the respondent's materials nor did the Respondent Pesticide Administrator consider any alternative, lower risk methods.

Both omissions are in the panel's view, 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."

The undisputed evidence is that the Permit Holder uses traps for monitoring. These traps contain a small piece of material impregnated with a synthetic gypsy moth pheromone which attracts male gypsy moths from considerable distances.

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.

While using a pheromone trap method to kill moths would require a federal registration, the evidence is that it would be readily available; and the Panel takes judicial notice of the federal power to grant temporary research permit registrations.

In this case, since the use of high density pheromone trapping and destroying egg masses were considered by the Permit Holder in its draft gypsy moth management policy, these alternative methods are within the jurisdiction of the Panel. While neither is likely to result in 'eradication' as defined by the Permit Holder, neither will a ground spray program.

### **Unreasonable departure from published policy**

Further the Panel finds that the evidence establishes that the facts of this case did not meet the permit holder's recommended criteria and threshold for eradication spray programs as set out in its draft policy - Gypsy Moth Management; and there were no exceptional circumstances to warrant a departure from its recommended criteria.

Although this is draft policy, the Panel finds that the *Criteria and Thresholds for Decision Making* at pages 18-20 and *Treatment Options* at pages 20-23, are helpful guidelines for determining the reasonableness of a spray program.

Further the Panel finds that the evidence establishes that the facts of this case did not meet the Permit Holder's recommended criteria and threshold for eradication spray programs as set out in its draft policy - Gypsy Moth Management.

The Panel finds that the Pesticide Administrator ought to have found there were no exceptional circumstances to warrant a departure from the applicant Permit Holder's recommended criteria - especially given the Respondent Deputy Administrator's participation in many BTK pesticide appeals before this Board.

Paragraph 9.1 sets out that

The criteria considered to signal [permanent] establishment [of gypsy moths] are: finding more than one living life stage in an area, or finding one or more traps with more than one male moths in them. (Eis, 1995).

In practical terms, **eradication is considered when egg masses are found** in an area where males have also been trapped."

This policy recognizes that there is no quantitative way to estimate the risks of further spread but a threshold is noted at paragraph 9.2:

Spray programs are **not initiated** when only a single male moth is trapped **but only after** the size of infested areas is determined by more intensive trapping and surveys for egg masses are made. [emphasis added]

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.

Based on the evidence the panel finds that the decision to spray this particular area is unreasonable; that the ground spray is unlikely to produce the intended result; and that the use of BTK would cause unreasonable adverse effect, as defined by the courts.

## DECISION

For the above reasons it is the decision of this panel that Pesticide Use Permit 214-033-96 is cancelled and the appeal is successful.

## COMMENTS

1. The panel also feels that if other permit applications are made, the Pesticide Administrator ought to place conditions on a permit which work to remedy the clearly established lack of inventory information on the environment, on non-target species and follow-up monitoring of environment and human health.

This monitoring would permit the Administrator to better evaluate the risks and benefits of these spray programs, especially since these spray programs have been in effect for over five years and may occur for the foreseeable future. It seems reasonable to require that pesticide permits for heavily populated urban areas include the following conditions for sprayer/permit users:

gather inventory information on potential non-target species before and after spraying and, provide the name, address, phone and fax number of the local public health inspector and that every complainant be sent a medical surveillance form to complete with a map to indicate their location.

2. Policy should not be applied as if it were law. A good summary of how policy works was written by Connie Munro, Chief Appeals Commissioner of the WCB Appeal Division. In a decision found in the Worker's Compensation Reporter ((1995) 11 W.C.R. 295 @ p. 298.), she states as follows:

...where a policy puts a limitation, the limitation does not constitute an absolute bar since policies are essentially guidelines - not binding rules. There must always be willingness to depart from a policy in a deserving case. On the other hand, policies are meant to ensure consistency and predictability with reference to carefully thought-out standards. This means that a departure from a policy is only warranted in exceptional circumstances.

The Panel agrees with this analysis.

Judith Lee, Panel Chair  
Environmental Appeal Board

April 15, 1996