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and

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and

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Sea Lamprey Control Centre  
1219 Queen Street East  
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Canada

## **TECHNICAL OPERATING PROCEDURE**

### **PROCEDURE TITLE:**

Procedure for large-scale applications of Bayluscide 3.2% Granular Sea Lamprey Larvicide

### **APPLICABILITY:**

Procedures apply to large-scale treatment applications of Bayluscide 3.2% Granular Sea Lamprey Larvicide (granular Bayluscide) conducted alone or in conjunction with applications of TFM or the combination of TFM and Bayluscide to streams or lakes.

### **PRINCIPLE:**

Granular Bayluscide is a restricted use lampricide (EPA Registration Number 6704-91, Health Canada Pest Product Control Number 25563).

### **SAMPLE COLLECTION AND PRESERVATION:**

Biological specimens are collected by scap net and if retained, are preserved in a 10% formalin, or 70% ethanol solution, or are frozen.

### **EQUIPMENT REQUIRED:**

Personal protective equipment (refer to Personal Safety in the SAFETY section)

Application boat (refer to IOP 18.x for all required equipment)

**POTENTIAL INTERFERENCES:**

Aquatic vegetation may interfere with the dispersal of granules or with the dispersion of active ingredient in the water. Aquatic vegetation is often present in desirable sea lamprey habitat; however, if vegetation is considered too dense the treatment supervisor or their designee may defer treatment. Water current, wind, rain, shallow water may affect the application and efficacy of the granules. Other interferences include commercial/recreational boat traffic and overhead structures (bridges/grain elevators) which may block satellite connectivity.

**SAFETY:**

Environmental Hazards

When applied as directed, Bayluscide 3.2% Granular Sea Lamprey Larvicide is not likely to harm game fish populations that may be present in treated waters. Applications may kill freshwater clams and mussels and may kill fish species that are physiologically bound to the lake or stream bottom.

Personal Safety

Bayluscide 3.2% Granular Sea Lamprey Larvicide is a restricted use pesticide. See precautionary statements on pesticide label.

A Safety Data Sheet (SDS) for granular Bayluscide, a copy of the pesticide label, and a contingency plan for countering spills of lampricides which includes emergency telephone numbers are supplied to workers (Appendix D). Applicators are required to read, to become familiar with, and to comply with all listed restrictions, safeguards, and procedures.

All employees are provided with and are required to wear protective equipment when measuring, transferring, or applying the granular Bayluscide, and when cleaning application equipment or disposing of containers. Safety kits are available. The kits are stored in work vehicles.

Personnel protective equipment required when handling granular Bayluscide is listed on the pesticide label.

Additional available equipment:

1. Emergency eyewash bottle
2. Soap
3. Replacement respirator filters, gloves, and goggles
4. Tyvek protective suits, hood, and positive air flow respirator

Employees remove outer garments and thoroughly wash their hands and face with soap and water before preparing food or eating.

I. Pre-application safeguards

- A. Protection of the public and the environment is a critical consideration before, during, and after any application of granular Bayluscide. The area proposed for application is examined before an application begins. The purpose of applications is explained to bystanders who are kept a safe distance from treatment activities. Municipalities and agricultural irrigators that use streams and lentic areas requiring treatment as potable water or irrigation water sources must be notified of the impending treatment at least 24 hours prior to application.

- B. High winds and lightning increase the chance of unsafe boating conditions. Applications are conducted so operators and observers are always upwind of the application.
- C. All applications of granular Bayluscide follow specific procedural guidelines that cover the methods of site preparation, methods of application post-application measures which safeguard the public and the environment, and emergency procedures for spill containment and clean-up.
- D. Granular Bayluscide will not be applied if nontarget organisms are seen congregated in the application area and attempts to disperse were unsuccessful.
- E. In lentic Bayluscide treatments with low velocity, analysis of pre-treatment information (dissolved oxygen, temperature, general atmospheric conditions, presence and relative density of vegetation, etc) by the treatment supervisor may indicate a basis of concern for potential negative effects to non-target organisms. In such instances, a small area should be test-sprayed to assess effects to nontarget organisms.

- 1. Plot conditions potentially warranting test-spraying
  - a. Large plot size (>5 ha; about 12 acres)
  - b. Distinctly different areas of shallow and deep waters
  - c. One or more plot boundaries adjacent to the shoreline

- 2. Test area(s)

The test area(s) should be no larger than 1-3 ha (about 2.5 -7.5 acres) in size and at least one of the distinctly different areas should be tested. If no adverse effects are evident within one hour post-application, the remainder of the plot can be sprayed.

- 3. Subplots

Plots larger than 15 ha (37 acres) should be broken into subplots of about 8 ha (20 acres) in size. Adjacent subplots should be treated after a one hour delay to allow for escapement of any non-targets from the treated areas. Noncontiguous subplots can be treated without delay.

- II. Post-application safeguards

- A. If bystanders or landowners are present, they are cautioned about the recent application of granular Bayluscide.

- III. Storage

See AOP:008.x

- IV. Transport

See AOP:008.x and Appendix R

- V. Spills

See Appendix D

**DISPOSAL:**

Empty containers are triple-rinsed (or equivalent) on site. The empty containers are disposed of according to label instructions.

**REAGENTS:**

None

**PROCEDURES:**

Bayluscide 3.2% Granular Sea Lamprey Larvicide is applied as a control tool in areas where standard application techniques and other formulations of lampricide are less effective or efficient. The granules are spread over the water surface at 156 pounds/acre (175 kilograms/hectare), settle to the bottom, dissolve, and cause lampreys to emerge from their burrows. Some larvae swim to the surface where they may be captured with scap nets before they die. Proposed application sites are identified and reported to the states and province annually.

I. Preparations

A. Site

1. Download the polygon of plot.
2. Survey the area for obstructions that may conflict with the safe, uniform application of granules. Clear the area of obstructions, and if possible, check the area for water clarity and for the presence of aquatic vegetation.
3. Temperature and dissolved oxygen readings will be conducted prior to starting the application particularly if any of the following conditions exist:
  - a. The treatment is unavoidably scheduled in the latter part of the field season when environmental conditions may be less favorable for conducting granular Bayluscide treatments
  - b. The proposed application site has been historically susceptible to nontarget mortality
  - c. The responsible treatment crew suspects that environmental conditions in the proposed application site may be not suitable for applying lampricides without causing undue nontarget mortality

Treatments should not be conducted when the level of dissolved oxygen in the water is less than 4mg/L for warm water species and 6mg/L for cold water species. In the event that both cold and warm water species exist in the treatment area, then the dissolved oxygen concentration should be a minimum of 6 mg/L. The procedure for obtaining dissolved oxygen measurements can be found in TOP: 008.x.

- B. Calculations
  - 1. Ensure application equipment on spray boat is calibrated prior to treatment

II. Application procedures

- A. Prepare and use all required protective equipment.
- B. Load spray boat hopper with granular Bayluscide. Record the amount on the Granular Bayluscide Application Sheet.
- C. Apply product beginning from the land side of the plot into the body of water. Wind and other obstruction within plot, or the shape of the plot may dictate the direction of transects used.
- D. Avoid crosswind applications if possible while taking advantage of long transects.
- E. Check calibration by dividing the number of pounds Bayluscide added to hopper by 156 lbs/acre. This equals the number of acres applied and should match the number of acres treated as displayed on the Envizio screen. If calibration is off, see calibration settings and change spreader constant in (IOP:018.0).
- F. Reload hopper with product using supply boats if required.
- G. When plot is completed record all pertinent information on the application sheet.

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This procedure has been reviewed and approved by the undersigned representatives of the U.S. Fish and Wildlife Service and Fisheries and Oceans Canada.

REVIEWED/APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
Field Supervisor (U.S.)

REVIEWED/APPROVED Mike Shives DATE 05 MAR 2020  
Program Manager (Canada)