655-421

5/17/2001

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

May 17, 2001

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5-594881

Prentiss Incorporated
C.B. 2000
Floral Park, NY 11002-2000

Attention: Richard A. Miller

Subject Prentox® Sympren-Fish Toxicant
EPA Reg. No. 655-421
Your amended application of February 13, 2001

The labeling submitted with the above letter, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is acceptable, provided you submit one (1) copy of final printed labeling to us, before you ship your product. A copy of the stamped label is enclosed for your records.

Existing stocks of labels Stocks of existing labels may be used for eighteen (18) months.

Consequence for non-compliance If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of this condition.

EPA contact If you have any questions about this letter, please contact me by phone (703-305-5407), fax (703-305-6596), or E-Mail (peacock.dan@epa.gov).

Sincerely,

DBP

Daniel B. Peacock, Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

Enclosure
1. Stamped label
2. Minimum Type Size Requirements for Final Printed Labeling

Letter location A:\Rotenone\655-421.wpdMay 17, 2001

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RESTRICTED USE PESTICIDE

DUE TO AQUATIC AND ACUTE INHALATION TOXICITY

For retail sale to, and use only by, Certified applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

SYNPREN-FISH TOXICANT

Liquid-Emulsifiable

*For Control of Fish in Lakes, Ponds, Reservoirs and Streams

ACCEPTED
with COMMENTS
In EPA Letter Dated:
MAY 17 2001
Under Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 655-421

ACTIVE INGREDIENTS:	
Rotenone	2.5% w/w
Other Associated Resins	5.0%
Piperonyl Butoxide, Technical*	2.5%
INERT INGREDIENTS:**	90.0%
TOTAL:	100.0%

*Equivalent to 2.0% [Butylcarbityl] [6-propylpiperonyl] ether and 0.5% related compounds.
**This product contains aromatic petroleum solvents.
PRENTOX® - Registered Trademark of Prentiss Incorporated

KEEP OUT OF REACH OF CHILDREN

DANGER - POISONOUS

See Additional Precautionary Statements Below.

FIRST AID Have *product container or* label with you when obtaining treatment advice.	
If swallowed	• Call a poison control center, doctor or the National Pesticide Telecommunications Network at 1-800-858-7378 immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center, doctor or the National Pesticide Telecommunications Network at 1-800-858-7378 immediately for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center, doctor, or the National Pesticide Telecommunications Network at 1-800-858-7378 immediately for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center, doctor, or the National Pesticide Telecommunications Network at 1-800-858-7378 immediately for treatment advice.
For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Telecommunications Network at 1-800-858-7378.	

E.P.A. REG. NO. 655-421 7/00 E.P.A. EST. NO. 655-GA-1

Manufactured by:

PRENTISS INCORPORATED

Plant: Kaolin Road, Sandersville, GA 31082
Office: C.B. 2000, Floral Park, NY 11002-2000

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER

Fatal if inhaled. May be fatal if swallowed. Harmful if absorbed through skin. Causes substantial but temporary eye injury. Causes skin irritation. Do not breathe spray mist. Do not get in eyes, on skin or on clothing. Wear goggles or safety glasses.

When working with undiluted product, wear either a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter.

Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish. Fish kills are expected at recommended rates. Consult your State Fish and Game Agency before applying this product to public waters to determine if a permit is needed for such an application. Do not contaminate untreated water when disposing of equipment washwaters.

CHEMICAL AND PHYSICAL HAZARDS

Combustible mixture. Flash point of this formulation is 115° F. DO NOT USE OR STORE NEAR HEAT OR OPEN FLAME.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Storage: Store only in original containers, in a dry place inaccessible to children and pets. Prentox Synpren-Fish Toxicant will not solidify nor show any separation at temperatures down to 40° F and is stable for a minimum of one year when stored in sealed drums at 70° F.
Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions contact your state pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

General Information
Prentox Synpren-Fish Toxicant is a specially formulated product containing synergized rotenone, to be used in fisheries management for the eradication of fish from lakes, ponds, reservoirs and streams.

Since such factors as pH, temperature, depth and turbidity will change effectiveness, use this product only at locations, rates, and times authorized and approved by appropriate state and federal fish and wildlife agencies. Rates must be within the range specified on the label.

Properly dispose of unused product. Do not use dead fish for food or feed.

Do not use water treated with rotenone to irrigate crops or release within 1/2 mile upstream of a potable water or irrigation water intake in a standing body of water such as a lake, pond or reservoir.

RE-ENTRY STATEMENT: Do not allow swimming in rotenone-treated water until the application has been completed and all pesticide has been thoroughly mixed into the water according to labeling instructions.

For Use in Ponds, Lakes and Reservoirs
The actual application rates and concentrations of rotenone needed to control fish will vary widely, depending on the type of use (e.g., selective treatment, normal pond use, etc.) and the factors listed above. The table below is a general guide for the proper rates and concentrations.

Prentox Synpren-Fish Toxicant disperses readily in water both laterally and vertically, and will penetrate below the thermocline in thermally stratified bodies of water.

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Computation of Acre-Feet: An acre-foot is a unit of volume of a body of water having the area of one acre and the depth of one foot. To determine acre feet in a given body of water, make a series of transects across the body of water taking depths with a measured pole or weighted line. Add the soundings and divide by the number made to determine the average depth. Multiply this average depth by the total surface area in order to determine the acre-feet to be treated. If number of surface acres is unknown, contact your local Soil Conservation Service, which can determine this from aerial photographs.

Amount of Prentox Synpren-Fish Toxicant Needed for Specific Uses: To determine the approximate number of gallons of Prentox Synpren-Fish Toxicant (2.5% Rotenone) needed, find your "Type of Use" in the first column of the table below, and then divide the corresponding numbers in the third column, "Number of Acre-Feet Covered by One Gallon" into the number of acre-feet in your body of water.

General Guide to the Application Rates and Concentrations of Rotenone Needed to Control Fish in Lakes, Ponds and Reservoirs[1]

Type of Use	Parts Per Million Synpren-Fish Toxicant	Parts Per Million Active Rotenone	Number of Acre-Feet Covered by One Gallon
Selective Treatment	0.20 to 0.25	0.005 to 0.007	15 to 12
Normal Pond Use	1.0 to 2.0	0.025 to 0.050	3.0 to 1.5
Remove bullheads or carp	2.0 to 4.0	0.050 to 0.100	1.5 to 0.75
Remove bullheads or carp in rich organic ponds	4.0 to 8.0	0.100 to 0.200	0.75 to 0.38
Preimpoundment treatment above dam	6.0 to 10.0	0.150 to 0.250	0.50 to 0.30

[1]Adapted from Kinney, Edward. 1965. Rotenone in Fish Pond Management. USDI Washington, D.C. Leaflet FL-576.

Pre-Mix and Method of Application: Pre-mix with water at a rate of one gallon Prentox Synpren-Fish Toxicant to 10 gallons of water. Uniformly apply over water surface or bubble through underwater lines.

Detoxification: Prentox Synpren-Fish Toxicant treated waters detoxify under natural conditions within one week to one month depending upon temperatures, alkalinity, etc. Rapid detoxification can be accomplished by adding chlorine or potassium permanganate to the water at the same rate as Prentox Synpren-Fish Toxicant in parts per million, plus enough additional to meet the chlorine demand of the untreated water.

Removal of Taste and Odor: Prentox Synpren-Fish Toxicant treated waters do not retain a detectable taste or odor for more than a few days to a maximum of one month. Taste and odor can be removed immediately by treatment with activated charcoal at a rate of 30 ppm for each 1 ppm Prentox Synpren-Fish Toxicant remaining. (Note: As Prentox Synpren-Fish Toxicant detoxifies, less charcoal is required.)

Restocking After Treatment: Wait 2 to 4 weeks after treatment. Place a sample of fish to be stocked in wire cages in the coolest part of the treated waters. If the fish are not killed within 24 hours, the water may be restocked.

Use in Streams Immediately Above Lakes, Ponds, and Reservoirs

The purpose of treating streams immediately above lakes, ponds and reservoirs is to improve the effectiveness of lake, pond and reservoir treatments by preventing target fish from moving into the stream corridors, and not to control fish in streams per se. The term "immediately" means the first available site above the lake, pond or reservoir where treatment is practical, while still creating a sufficient barrier to prevent migration of target fish into the stream corridor.

In order to completely clear a fresh water aquatic habitat of target fish, the entire system above or between fish barriers must be treated. See the use directions for streams and rivers on this label for proper application instructions.

In order to treat a stream immediately above a lake, pond or reservoir, you must: (a) select the concentration of active rotenone, (b) compute the flow rate of the stream, (c) calculate the application rate, (d) select an exposure time, (e) estimate the amount of product needed, (f) follow the method of application. To prevent movement of fish from the pond, lake or reservoir, stream treatment should begin before and continue throughout treatment of pond, lake or reservoir until mixing has occurred.

1. Concentration of Active Rotenone:
Select the concentration of active rotenone based on the type of use from those listed on the table. Example: If you select "normal pond use" you could select a concentration of 0.025 part per million.

2. Computation of Flow Rate for Stream:
Select a cross section of the stream where the banks and bottom are relatively smooth and free of obstacles. Divide the surface width into 3 equal sections and determine the water depth and surface velocity at the center of each section. In slowly moving streams, determine the velocity by dropping a float attached to 5 feet of loose, monofilament fishing line. Measure the time required for the float to move 5 feet. For fast-moving streams, use a longer distance. Take at least three readings at each point. To calculate the flow rate from the information obtained above, use the following formula:

$$F = \frac{Ws \times D \times L \times C}{T}$$

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where F = flow rate (cubic feet/second), Ws = surface width (feet), D = mean depth (feet), L = mean distance traveled by float (feet), C = constant (0.8 for rough bottoms and 0.9 for smooth bottoms), and T = mean time for float (sec.).

3. Calculation of Application Rate:
In order to calculate the application rate (expressed as gallons/second), you convert the rate in the table (expressed as gallons/acre-feet), to gallons per cubic feet and multiply by the flow rate (expressed as cubic feet/second). Depending on the size of the stream and the type of equipment, the rate could be expressed in other units, such as ounces/hour, or cc/minute.

The application rate for the stream is calculated as follows:

$$R_s = R_p * C * F$$

where R_s = application rate for stream (gallons/second), R_p = application rate for pond (gallons/acre-feet), C = 1 acre foot/43560 cubic feet, and F = flow rate of the stream (cubic feet/second).

4. Exposure Time:
The exposure time would be the period of time (expressed in hours or minutes) during which Prentox Synpren-Fish Toxicant is applied to the stream in order to prevent target fish from escaping from the pond into the stream corridor.

5. Amount of Product:
Calculate the amount of product for a stream by multiplying the application rate for streams by the exposure time.

$$A = R_s * H$$

where A = the amount of product for the stream application, R_s = application rate for stream (gallons/second), and H = the exposure time expressed in seconds.

For Use in Streams and Rivers

Only state or federal Fish & Wildlife personnel or professional fisheries biologists under the authorization of state or federal Fish & Wildlife agencies are permitted to make applications of Prentox Synpren-Fish Toxicant for control of fish in streams and rivers. Informal consultation with Fish & Wildlife personnel regarding the potential occurrence of endangered species in areas to be treated should take place. Applicators must reference Prentiss Incorporated's Prentox Synpren-Fish Toxicant Stream and River Use Monograph before making any application to streams or rivers.

Warranty Statement: Our recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

PRENTOX® SYNPREN-FISH TOXICANT STREAM AND RIVER MONOGRAPH

USE IN STREAMS AND RIVERS

The following use directions are to provide guidance on how to make applications of Prentox Synpren-Fish Toxicant to streams and rivers. The unique nature of every application site could require minor adjustments to the method and rate of application. Should these unique conditions require major deviation from these use directions a Special Local Need 24(c) registration should be obtained from the state.

Before applications of Prentox Synpren-Fish Toxicant can be made to streams and rivers, authorization must be obtained from state or federal Fish & Wildlife agencies. Since local environmental conditions will vary, consult with the state Fish & Wildlife agency to ensure the method and rate of application are appropriate for that site.

Contact the local water department to determine if any water intakes are (within one mile) down flow of the section of stream, river or canal to be treated. If so, coordinate the application with the water department to make sure the intakes are closed during treatment and detoxification.

Application Rates and Concentration of Rotenone

Slow Moving Rivers: In slow moving rivers and streams with little or no water exchange use instructions for ponds, lakes and reservoirs.

Flowing Streams and Rivers: Apply rotenone as a drip for 4 to 8 hours to the flowing portion of the stream. Multiple application sites are used along the length of the treated stream, spaced approximately 1/2 to 2 miles apart depending on the water flow travel time between sites. Multiple sites are used because rotenone is diluted and detoxified with distance. Application sites are spaced at no more than 2 hours or at no less than 1 hour travel time intervals; this assures that the treated stream remains lethal to fish for a minimum of 2 hours. A non-toxic dye such as Rhodamine-WT® or fluorescein can be used to determine travel times. Cages containing live fish placed immediately upstream of the downstream application sites can be used as sentinels to assure that lethal conditions exist between sites.

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Apply rotenone at each application site at a concentration of 0.5 to 2.0 parts per million of Prentox Synpren-Fish Toxicant. The amount of Prentox Synpren-Fish Toxicant needed at each site is dependent on stream flow (see Computation of Flow Rate for Stream).

Application of Undiluted Material

Prentox Synpren-Fish Toxicant can drain directly into the center of the stream at a rate of 0.85 to 2.4 cc per minute for each cubic foot per second of stream flow. Flow of undiluted Prentox Synpren-Fish Toxicant into the stream should be checked at least hourly. This is equivalent to from 0.5 to 2.0 ppm Prentox Synpren-Fish Toxicant, or from 0.012 to 0.050 ppm rotenone.

Back-water, stagnant and spring areas of streams should be sprayed by hand with a 10% v/v solution of Prentox Synpren-Fish Toxicant in water to assure a complete coverage.

Calculation of Application Rate:

$$X = F(1.692\ B)$$

where X = cc per minute of Prentox Synpren-Fish Toxicant to the stream F = the flow rate (cu. ft/sec) (see *Computation of Flow Rate for Stream* section of the label) and B = parts per million desired concentration of Prentox Synpren-Fish Toxicant.

Total Amount of Product Needed for Treatment: Streams should be treated for 4 to 8 hours in order to clear the treated section of stream of fish. To determine the total amount of Prentox Synpren-Fish Toxicant required, use the following equation:

$$Y = X(0.0158C)$$

Y = gallons of Prentox Synpren-Fish Toxicant required for the stream treatment, X = cc per minute of Prentox Synpren-Fish Toxicant applied to the stream, C = time in hours of the stream treatment.

Application of Diluted Material

Alternatively, for stream flows up to 25 cubic feet per minute, continuous drip of diluted Prentox Synpren-Fish Toxicant at 80 cc per minute can be used. Flow of diluted Prentox Synpren-Fish Toxicant into the stream should be checked at least hourly. Use a 5 gallon reservoir over a 4 hour period, a 7.5 gallon reservoir over a 6 hour period, or a 10 gallon reservoir over an 8 hour period. The volume of the reservoir can be determined from the equation:

$$R = H * 1.25$$

where R = the volume of the reservoir in gallons, and H = the duration of the application in hours.

The volume of Prentox Synpren-Fish Toxicant diluted with water in the reservoir is determined from the equation:

$$X = Y(102\ F)H$$

where X = the cc of Prentox Synpren-Fish Toxicant diluted to 5 gallons, Y = parts per million desired concentration of Prentox Synpren-Fish Toxicant, F = the flow rate (cubic feet/second), H = the duration of the application (hours).

For flows over 25 cubic feet per minute, additional reservoirs can be used concurrently. Back-water, stagnant and spring areas of streams should be sprayed by hand with a 10% v/v/ solution of Prentox Synpren-Fish Toxicant in water to assure a complete coverage.

Detoxification

To limit effects downstream, detoxification with potassium permanganate can be used at the downstream limit of the treated area. Within 1/2 to 2 miles of the furthest downstream Prentox Synpren-Fish Toxicant application site, the rotenone can be detoxified with a potassium permanganate solution at a resultant stream concentration of 2 to 4 parts per million, depending on rotenone concentration and permanganate demand of the water. A 2.5% (10 pounds potassium permanganate to 50 gallons of water) permanganate solution is dripped in at a continuous rate using the equation:

$$X = Y(70\ F)$$

where X = cc of 2.5% permanganate solution per minute, Y = ppm of desired permanganate concentration, and F = cubic feet per second of stream flow.

Flow of permanganate should be checked at least hourly. Live fish in cages placed immediately above the permanganate application site will show signs of stress signaling the need for beginning detoxification. Detoxification can be terminated when replenished fish survive and show no signs of stress for at least four hours.

Detoxification of rotenone by permanganate requires between 15 to 30 minutes contact time (travel time). Cages containing live fish can be placed at these downstream intervals to judge the effectiveness of detoxification. Water temperature of less than 50° F detoxification may be retarded, requiring a longer contact time.

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