

Appendix L

FINTROL LABEL AND
APPLICATION INSTRUCTIONS

APPENDIX L: FINTROL LABEL
AND APPLICATION INSTRUCTIONS

<p style="text-align: center;">FINTROL CONCENTRATE PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals</p> <p>DANGER: Fatal if swallowed. May be fatal if absorbed through skin. Causes substantial but temporary eye injury. Causes skin irritation. Do not breath spray mist. Do not get in eyes, on skin or on clothing. Wear protective goggles. Wear chemical gloves. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.</p> <p style="text-align: center;">Environmental Hazards This product is very highly toxic to fish Physical or Chemical Hazards</p> <p>Extremely Flammable: Keep away from fire, sparks and heated surfaces.</p> <p>FIRST AID: IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.</p> <p>IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.</p> <p>IF ON SKIN: Wash with plenty of soap and water. Get medical attention.</p> <p>IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">STORAGE AND DISPOSAL</p> <p>Do not contaminate water, food or feed by storage or disposal.</p> <p>Storage: Store only in original containers, in a dry place inaccessible to children and pets. Fintrol Concentrate will thicken if stored at temperatures below 65 F. Before use store overnight above 70 F. Fintrol Concentrate is stable for a minimum of 3 years when stored in unopened original glass bottles.</p> <p>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.</p> <p>Container Disposal: Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.</p> </div>	<p style="text-align: center;">RESTRICTED USE PESTICIDE Due to Aquatic Toxicity & Need for Highly Specialized Applicator training. 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 Applicators' Certification.</p> <div style="text-align: center; margin-top: 20px;"> <p>FINTROL® CONCENTRATE (ANTIMYCIN A) FISH TOXICANT KIT (contains Fintrol Concentrate and Fintrol Diluent)</p> </div> <p>This can contains 1 bottle of FINTROL-Concentrate and 1 bottle of Fintrol-Diluent.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>FINTROL CONCENTRATE (8 fl. 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No 39096-WA-01</p> <div style="text-align: center; margin-top: 10px;"> <p>DANGER POISON</p> <p>Keep out of reach of children See side panel for other Precautionary Statements.</p> <p style="font-size: small;">DIRECTIONS FOR USE It is a violation of federal law to use this product in a manner inconsistent with its labeling. See USE DIRECTIONS LEAFLET for "Fintrol (Antimycin A) Fish Toxicant Kit"</p> </div>	<p>FINTROL CONCENTRATE (8 fl. 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**FINTROL DILUENT
PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals**

CAUTION: Harmful if swallowed. Harmful if inhaled. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin and clothing. Do not breath spray mist. Do not get in eyes, on skin or on clothing. Wear protective goggles. Wear chemical gloves. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

Physical or Chemical Hazards

EXTREMELY FLAMMABLE: KEEP AWAY FROM FIRE, SPARKS AND HEATED SURFACES.

FIRST AID

IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

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. Fintrol Concentrate will thicken if stored at temperatures below 65 F. Before use store overnight above 70 F. Fintrol Concentrate is stable for a minimum of 3 years when stored in unopened original glass bottles.

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 dispose of in a sanitary landfill or by other approved state and local procedures.



TAKE TIME



OBSERVE LABEL DIRECTIONS

FINTROL-®

CONCENTRATE

(antimycin A) (solution 20%)

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals

DANGER: Fatal if swallowed. May be fatal 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 protective goggles. Wear chemical gloves. 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 product is very highly toxic to fish.


STORAGE AND DISPOSAL
Do not contaminate water, food or feed by storage or disposal. SEE OUTER CAN LABEL FOR PROPER STORAGE, PESTICIDE DISPOSAL AND CONTAINER DISPOSAL

EPA Reg. No. 39096-2
EPA Est. No. 39096-WA-01

Fintrol Concentrate for use with Fintrol (Antimycin) Fish Toxicant Kit

Ingredients	(w/w%)
Active Ingredients	
Antimycin A	23%
Inert Ingredients	
Soy lipids	15%
Acetone	62%
	100%

DANGER



POISON

KEEP OUT OF REACH OF CHILDREN

Aquabiotics Corp.
PO Box 10576
Bainbridge Island, WA

Physical or Chemical Hazards:
Extremely Flammable: Keep away from fire, sparks and heated surfaces.

FIRST AID IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

DIRECTIONS FOR USE
It is a violation of federal law to use this product in a manner inconsistent with its labeling. See "USE DIRECTIONS LEAFLET" for "FINTROL (Antimycin A) Fish Toxicant Kit".



FINTROL®

Fish Toxicant Kit

Use Direction Leaflet

Directions For Use
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

FINTROL-CONCENTRATE is designed for use in running water, streams and shallow waters. This liquid form of FINTROL may be applied to lakes and ponds by boat bailer method or spray equipment. Spray methods are useful at depths to 1 foot. Boat bailer and drip tubes, applied at the propeller wash, are used at other depths. Application from an airplane is NOT recommended.

Each can of Fintrol-Concentrate (Antimycin A) Fish Toxicant Kit [containing 240 cc. Fintrol-Concentrate (solution 20%) and 240 cc. Diluent] will, after mixing, make 480 cc., which treats approximately 38 acre-feet of water at 1 p.p.b. (1 part per billion).

AQUABIOTICS CORP.
P.O. Box 10576
10750 Arrow Point Dr. NE
Bainbridge Island, WA 98110

EPA Reg. No. 39096-2
EPA Est. No. 39096-WA-01

Licensed by: Wisconsin Alumni Research
 Foundation

Trademark licensed by: Ayerst Laboratories, Inc.

Before applying FINTROL to either public or private waters, contact the Director of the State Fish and Game Department or Conservation Department for State and Federal regulations governing the use of fish toxicants in your area.



DESCRIPTION

The active ingredient of FINROL is antimycin A. When absorbed through the gills of fish, antimycin A kills by interfering with the respiration of body cells. Antimycin A does not repel fish. This is an important advantage, particularly when running waters, bog lakes, and the epilimnion, or upper layer, of large lakes are treated. Fish make no attempt to escape contact with the toxicant by seeking to move into waters that are clear of it. FINROL'S action is rapid and irreversible.

Sensitivity to FINROL varies widely among fish species. Hence it may be employed to selectively destroy certain species, without affecting other species concurrently inhabiting the same body of water.

Sensitive:

Gizzard shad, trouts, pikes, carp, minnows, suckers, brook stickleback, white bass, sunfishes, perches, freshwater drum, sculpins.

Least Sensitive:

Shortnose gar, bowfin, goldfish, catfish.

FINROL also may be used to selectively destroy certain age groups of species; younger fish are more sensitive to FINROL.

Providing the concentration is correctly estimated, FINROL can be used effectively at any time of year in either cold, warm, soft, hard, acid, alkaline, clear or turbid (muddy) waters. (See TABLE 1 and instruction for bioassay.)

FINROL does not impart detectable taste or odor to treated waters. In the usual, recommended concentrations it causes no apparent harm to aquatic plants, insects, or bottom fauna. Since FINROL'S active ingredient degrades rapidly, the reclaimed waters may be restocked soon after treatment. (See HOW TO DETERMINE WHEN TREATED WATER MAY BE RESTOCKED.) There is very little interruption in availability of the waters for recreational, agricultural, industrial, or other purpose.

USES

FINROL is used to cull undesirable species of fish from freshwater lakes, ponds, and streams. It can be used to eliminate all fish from a body of water (complete kill). Or, it can be used to remove only certain fish species or size groups from mixed populations (selective kill).

A complete kill may be achieved with a concentration of anywhere from 5 to 25 p.p.b. of active ingredient. (See HOW TO DETERMINE THE MOST EFFECTIVE CONCENTRATION.) FINROL is particularly advantageous for complete kills because it detoxifies so rapidly the pond can usually be restocked in about a week, or as soon as caged fish survive 48 hours' exposure to the treated waters.

Under optimal circumstances, in ponds managed for sports fishing, selective kills may be achieved at concentrations as low as 0.5 to 1.0 p.p.b. However, because these concentrations are extremely low, there is no rule of thumb that can be relied upon to determine them accurately. A BIOASSAY IS ALWAYS REQUIRED TO PINPOINT THE OPTIMAL CONCENTRATION FOR SELECTIVE KILLS. (Literature describing this procedure is available upon request.)

A selective kill has these advantages: It can be made without interrupting sport fishing for more than a week or so, and fishing may be gradually improved without restocking. In the past, when bluegill, minnows, or green sunfish dominated a pond managed for bass, the usual solution to the problem was the total removal of all the fish with a fish toxicant. This meant restocking and little or no fishing for one or two years. Now — with FINROL — this is no longer necessary. Low concentrations of FINROL will affect small bluegill, green sunfish, and minnows primarily. Only a few of the very small bass will succumb. The bulk of the adult bluegill and green sunfish will not be affected. Thus FINROL helps to bring about a balanced relationship between the bass and bluegill populations. This improves fishing without interrupting it for any appreciable length of time.

In catfish farming FINROL can be used to selectively eliminate the trash fish (scale fish) that commonly reduce the yields and increase the costs of the commercial catfish farmer. It is possible to do this with FINROL because concentrations that will eliminate scale fish generally will not harm adult catfish. The scale fish most often encountered by the catfish farmer will succumb to anywhere from 5 to 10 p.p.b. of active ingredient (See TABLE 1) whereas, under ordinary circumstances, it takes in excess of 20 p.p.b. to kill catfish. (Caution should be exercised during stress conditions of unusually high water temperature and reduced oxygen content when the sensitivity of fishes to chemicals may increase.)

HOW TO SELECT THE APPROPRIATE FORMULATION

The nature of the water to be treated (its depth and rate of flow) and the character of the surrounding land are factors to be taken into consideration when determining the formulation of FINROL to employ in a given situation.

HOW TO DETERMINE THE MOST EFFECTIVE CONCENTRATION

For complete kills and also, for removal of scale fish from catfish ponds.

The concentration of antimycin A required to kill one or more species of fish in any given body of water depends upon: 1) the sensitivity of the species to be eradicated, and 2) the chemical and physical properties of the water at the time of application of the toxicant; the pH and the temperature of the water are the most important of these chemical and physical factors under ordinary circumstances. Therefore, to determine what concentration of antimycin A will be required to kill the undesirable fish in your pond or lake:

- 1) identify the species to be eradicated,
- 2) determine the pH and average water temperature by measuring at various sites and depths,
- 3) refer to TABLE 1 for approximate concentrations.
- 4) conduct a bioassay to pinpoint the optimal concentration.

TABLE 1 provides a rough estimate of the concentrations required for a complete kill under various environmental conditions. However, since water chemistry is subject to sudden alteration by many variables and often unpredictable factors (pollution, heavy algae bloom, weather, drawdown, etc.) it should be realized that such changes may affect the performance of the toxicant. For this reason, measurements of pH and water temperature should always be taken as close to the time of treatment as is feasible.



**TABLE 1—FOR ROUGH ESTIMATION OF CONCENTRATIONS* OF FINTROL (ANTIMYCIN A) NEEDED FOR COMPLETE†
ERADICATION OF DIFFERENT FISH SPECIES, UNDER VARIOUS COMBINATION OF WATER TEMPERATURE AND WATER pH**

TARGET SPECIES	SENSITIVITY OF TARGET SPECIES TO FINTROL (in p.p.b. of active ingredient)	EFFECTIVE CONCENTRATION OF FINTROL* (in p.p.b. of active ingredient)			
		When pH is 8.5 or less		When pH is 8.5 or more	
		water temperature above 60°F.	water temperature below 60°F.	water temperature above 60°F.	water temperature below 60°F.
gizzard shad trouts pikes carp minnows suckers brook stickleback white bass sunfishes perches freshwater drum sculpins	5-10	5	7.5	7.5	10
short nose gar bowfin goldfish catfish	15-25	15	20	20	25
*The concentration level suggested by this table should be confirmed by an on-site bioassay. † This table is applicable only when a complete kill is desired. Do not use it for a selective kill. (See the following section.)					

* Fish nomenclature according to American Fisheries Society

Note (columns 1 and 2) that the sensitivity of the target species determines the concentration range. To eradicate sensitive species, it is recommended that the appropriate formulation of FINTROL be applied so that the body of water will have a concentration of from 5 to 10 p.p.b. of antimycin A, depending upon variation in pH and water temperature. For more tolerant species, higher concentrations are recommended. Laboratory studies indicate that less sensitive fish will succumb at concentrations of from 15 to 25 p.p.b. of antimycin A, depending upon variations in pH and water temperature. Columns 3 to 6 show how to adjust for pH and water temperature. Note that, in general, the lower the pH, the less FINTROL required. The higher the water temperature, the less FINTROL required. The ideal situation for a complete kill would combine a highly sensitive species, low pH and high water temperature.

For selective kills in ponds managed for sports fishing

The only way to determine the concentration of FINTROL needed for a selective kill is to perform a bioassay. This involves subjecting both the target and nontarget fish to several concentrations of FINTROL to determine the minimum lethal dose. (A description of the bioassay procedure is available upon request.)

HOW TO CALCULATE THE AMOUNT OF FINTROL TO BE ADDED TO A BODY OF WATER TO OBTAIN A GIVEN CONCENTRATION

To calculate the amount of FINTROL to be added to a body of water for eradication of undesired species, the following steps should be taken:

- Determine the volume of water to be treated in acre-feet. This can be arrived at by multiplying the surface area in acres by the average depth in feet.
- Determine the concentration to be used from Table 1.
- Multiply the number of acre-feet by the value given in Table 2, opposite the desired concentration.
- Divide this number by the total kit volume (480 cc. or 16 oz.) to get number of Fish Toxicant Kits needed.

**TABLE 2—RAPID ESTIMATION OF
FINTROL-CONCENTRATE REQUIREMENTS**

Desired Concentration (p.p.b. active ingredient)	Amount of FINTROL-CONCENTRATE per acre-foot	
	cc*	oz. (approx.)
1 p.p.b.	12.3	½
2 p.p.b.	24.6	¾
3 p.p.b.	36.9	1¼
4 p.p.b.	49.2	1½
5 p.p.b.	61.5	2
6 p.p.b.	73.8	2½
7 p.p.b.	86.1	2¾
8 p.p.b.	98.4	3¼
9 p.p.b.	110.7	3¾
10 p.p.b.	123.0	4
*Obtained by multiplying 12.3 cc. by the p.p.b.		
Note: 1 measuring teaspoon = 5 cc.; 1 measuring tablespoon = 15 cc.; ¼ standard measuring cup = 60 cc.; ½ standard measuring cup = 120 cc.; 1 standard meas. cup = 240 cc.		

Sample calculation:

To treat 75 acre-feet at 3 p.p.b., use:

$$75 \times 36.9 \text{ cc} = 2,767 \text{ cc. of FINTROL-CONCENTRATE} / 480$$

$$\text{cc.} = 5.8 \text{ Kits, or}$$

$$75 \times 1\frac{1}{4} \text{ fl. oz.} = 93\frac{3}{4} \text{ fl. oz. of FINTROL-CONCENTRATE} / 16 \text{ oz} = 5.8 \text{ kits.}$$



METHODS OF APPLICATION

IMPORTANT: DURING APPLICATION OF FINTROL, ALL PERSONS IN THE IMMEDIATE VICINITY SHOULD WEAR PROTECTIVE GOGGLES AND PROTECTIVE GLOVES

Liquid formulation: Directions for mixing: Add the Diluent [blue label] to the FINTROL CONCENTRATE (solution 20%) [Green label] in the oversize mixing container. Cap tightly and invert 2 to 3 times to mix thoroughly. Further dilute with AT LEAST five (5) gallons of water to insure that the acetone contained in FINTROL-CONCENTRATE will not affect rubber parts on any equipment that might be used to apply it. After water has been added, apply within eight (8) hours. [Note: The solution obtained by mixing the Diluent with FINTROL-CONCENTRATE (solution 20%) retains potency for up to seven (7) days. But once water has been added to this solution, it must be used within eight (8) hours to ensure potency.]

After appropriate dilution with water, the liquid formulation of FINTROL can be applied to lakes and ponds by the boat bailer method or spray equipment. Spray methods are useful at depths to one foot. Boat bailer and drip tubes when applied at the propeller wash are useful at greater depths. Pinpoint applications to shoal areas and small, isolated ponds can readily be made with backpack sprayers. (See CAUTION on use of PROTECTIVE GOGGLES AND PROTECTIVE GLOVES.)

In streams, FINTROL-CONCENTRATE is most often applied through drip stations established to meter the toxicant at a precalculated rate. Information on the use of such equipment may be obtained from state and/or federal agencies, experienced in stream treatment.

It is recommended that all applications of FINTROL be made at daybreak or as soon as there is enough light to work by.

PRECAUTIONS

Fish killed with antimycin A should not be consumed by man or animals. Treated waters must not be used for drinking by man or animals, or for crop irrigation, until fingerling rainbow trout or fingerling bluegills survive 48 hours' exposure in livecars in the treated waters.

Leftover portions of mixed liquid formulation retain potency for up to seven (7) days. But once water has been added to FINTROL-CONCENTRATE, it must be used within eight (8) hours to ensure potency.

Due to its acetone component, FINTROL-CONCENTRATE is flammable: keep away from heat and flame.

HOW TO DETERMINE WHEN TREATED WATER MAY BE RESTOCKED

Since antimycin A degrades rapidly following application, waters can usually be restocked about one week following treatment with FINTROL. Place livecars containing a sensitive species of fish in the treated water. It is recommended that these fish be fingerling rainbow trout or fingerling bluegills if the water temperature is between 35° and 68° F. When the water temperature exceeds 68° F, only fingerling bluegills should be used. If the fish survive for 48 hours, the water may be restocked.

HOW TO DETOXYIFY FINTROL WITH POTASSIUM PERMANGANATE (KMnO₄)

If it should be necessary to detoxify FINTROL in the outflow of a pond to prevent killing fish downstream, apply potassium permanganate at 1 part per million (1 p.p.m.) to the outflow. (More potassium permanganate may be needed if the stream has a high permanganate demand). Drip systems of hose-and-clamp or carburetor types can be employed to continuously dispense a solution of potassium permanganate into the water at the discharge outlet.

To evaluate the effectiveness of the detoxification process, place livecars containing fingerling rainbow trout or fingerling bluegills approximately 100 yards downstream from the site of KMnO₄ introduction. The water is considered detoxified if the fish survive for at least 48 hours in the livecar.

To detoxify FINTROL-treated streams, apply KMnO₄ at 1 p.p.m. at detoxification stations. (More KMnO₄ may be needed if the stream has a high permanganate demand). Continue the application of KMnO₄ until all FINTROL-treated water has passed the station. The water may be considered detoxified when fingerling rainbow trout or fingerling bluegills survive for at least 48 hours in livecars placed 100 yards downstream from the site of potassium permanganate (KMnO₄) introduction.

RE-ENTRY STATEMENT

Do not allow swimming in, drinking, or irrigation with FINTROL (Antimycin) treated water until a livecar of sensitive species of fish (fingerling rainbow trout or bluegill) survive for 48 hours in the treated waters. (See statement of How To Determine When Treated Water May Be Restocked).

SPECIAL INSTRUCTIONS

Prior to the use of a fish toxicant in either public or private waters, the Director of the State Fish and Game Department or Conservation Department must be contacted to determine whether a permit is required. Such products must be used by or under the technical supervision of personnel of state and federal fish and game agencies, trained in fisheries management, who will provide any special instructions applicable to the particular geographical area.

