2,4-D/TOX

54
315

Releasable

Date Out :EFB: JUN 18 1981

To: Product Manager 41 Stubbs
TS-767

From: Dr. Willa Garner
Chief, Review Section No. 1
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 81-DO-01

Chemical: 2,4-D (butoxyethanol ester)

Type Product: Herbicide

Product Name: AQUA-KLEEN

Company Name: State of Washington (Amchem)

Submission Purpose: use on Eurasian water milfoil

ZBB Code: Sec. 18

Date in: 6/12/81

Date Completed: JUN 18 1981

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

ACTION CODE: 510

EFB # 869

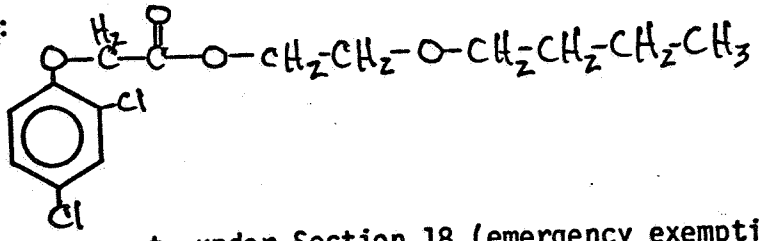
TAIS (level II)	Days
51	2

1.0 Introduction

Chemical Name and Type Pesticide: 2,4-D (2,4-dichlorophenoxyacetic acid, butoxyethanol ester), 29.0% a.i., aquatic herbicide

Trade Name: AQUA-KLEEN

Chemical Structure:



This submission is a request, under Section 18 (emergency exemption) of FIFRA, to treat Eurasian water milfoil with the aquatic herbicide, 2,4-D in Osoyoos Lake and the Okanogan Arm of the Columbia River (Lake Pateros), Okanogan County, Washington. Amount of herbicide used would be 20,800 lbs maximum (4,160 lbs. acid equivalent) to be applied within two-days during the critical mid to late summer period. The actual amount will probably be much less.

2.0 Directions for Use

See attached page.

3.0 Discussion of Data

None submitted.

4.0 Recommendations

EFB concurs with the proposed use of AQUA-KLEEN to treat Eurasian water milfoil in Washington under the provisions of Section 18 (emergency exemption) for the following reasons:

1. AQUA-KLEEN has been approved by the EPA for use on milfoil by the Tennessee Valley Authority.

2. Treatment will be done in two days, only to those areas containing milfoil plants, and at the critical plant-growth time to make it most effective. Treatment areas will be closed to swimming and fishing and downstream irrigation will be suspended until monitoring indicates safe 2,4-D levels.

3. Failure of the prevention program would have a large adverse economic impact in the state.

Herbert L. Manning

Herbert L. Manning, Ph.D.
Review Section #1
Environmental Fate Branch
Hazard Evaluation Division

For use in Eurasian Water Milfoil Control

GENERAL INFORMATION

For Eurasian water milfoil control in programs conducted by the Tennessee Valley Authority in dams and reservoirs of the T.V.A., AQUA-KLEEN contains 20% by weight of 2,4-D acid equivalent as the low-volatile butoxyethanol ester. This has been formulated on special heat treated attaclay granules that resist rapid decomposition in water. AQUA-KLEEN sinks quickly to the bottom and releases the weed killing chemical in the critical root zone area.

NOTICE TO APPLICATORS

Fish Toxicity—Oxygen Ratio

Fish breathe oxygen in the water and a water-oxygen ratio must be maintained. Decaying weeds use up oxygen. To avoid fish kill from decaying plant material do not treat more than one half the lake or pond at one time. For large bodies of weed infested waters leave buffer strips of at least 100 feet wide and delay treatment of these strips for 4-5 weeks or until the dead vegetation has decomposed.

Water pH

Lake water that is extremely acid or alkaline may influence the effectiveness of AQUA-KLEEN. A pH on the acid side (pH 6.0 or below) generally favors the action of the chemical while a pH on the alkaline side (pH 8.0 or above) may reduce the action. If regrowth occurs within a period of 6 to 8 weeks, a second application may be needed.

Open Water Areas

To reduce contamination and prevent undue exposure to fish and other aquatic organisms, do not treat water areas unless they are infested with aquatic weeds.

DIRECTIONS FOR USE

AQUA-KLEEN will kill water milfoil with surface or air applications.

Amounts to Use

Apply 100 to 200 pounds AQUA-KLEEN per surface acre. Use the higher rate in areas where there is a large exchange of water. These areas may require a repeat application.

When to Apply

For best results, spread AQUA-KLEEN in the spring and early summer during the time weeds start to grow. If desired, this timing can be checked by sampling the lake bottom in areas heavily infested by weeds the year before. If treatments are delayed until weeds form a dense mat or reach the surface, two treatments may be necessary. Make the second treatment when weeds show signs of recovery, but no later than mid-August. Occasionally, a second application will be necessary if heavy regrowth occurs or weeds move in from untreated areas.

How to Apply

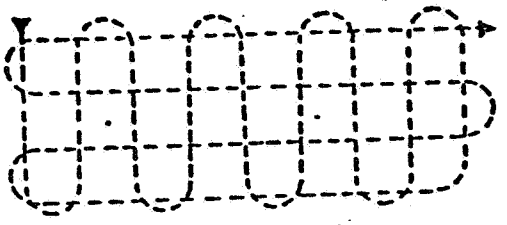
For large areas, use a fertilizer spreader or mechanical seeder such as the Gerber or Gandy. Before spreading any chemical, calibrate your method of application to be sure of spreading the proper amount. When using boats and power equipment, you must determine the proper combination of (1) boat speed (2) rate of delivery from the spreader and (3) width of swath covered by the granules. Shoreward swaths should be applied at lower rates to compensate for shallow margins. It is not necessary to apply granules up to the actual shoreline in most cases, since the butoxyethanol ester of 2,4-D leaches from the applied granules and migrates shoreward through the actions of current and diffusion. Leave a 10 to 20 ft. untreated margin, depending on water depth.

For small areas—around docks or isolated patches of weeds—use a portable spreader such as the Cyclone seeder. Estimate or measure out the area you want to treat. Weigh out the amount of material needed and spread this uniformly over the area. More uniform coverage is obtained by dividing the required amount in two and covering the area twice, applying the second half at right angles to the first. Use the following formula to calibrate your spreader's delivery in pounds of AQUA-KLEEN per minute.

$$\frac{\text{miles per hour} \times \text{spreader width} \times \text{pounds per acre}}{495} = \text{pounds per minute}$$

Example: to apply 100 pounds of AQUA-KLEEN per acre using a spreader that covers a 20-foot swath from a boat traveling at 4 miles per hour, set the spreader to deliver 16 pounds of AQUA-KLEEN granules per minute.

$$\frac{4 \text{ mph} \times 20 \text{ feet} \times 100 \text{ lbs./A}}{495} = 16 \text{ lb./min.}$$



When spreading AQUA-KLEEN from a boat, we suggest setting out guide posts at frequent intervals marking out the area. This helps to steer a straight course. Buffer lanes should be 50 to 100 feet wide. Treated lanes should be as wide as the buffer strips. Do not treat within ½ mile of potable water intake.

Air Application

Apply the recommended amount of AQUA-KLEEN through standard granular spreader systems or the Amchem SPRED-A-DISK™.

CAUTION

Fish and other aquatic organisms may be killed at application rates recommended on this label. Do not apply when weather conditions favor drift from target areas. Do not contaminate by cleaning of equipment or disposal of wastes.

Avoid contact with skin, eyes, or clothing.

Do not store near fertilizers, seeds, insecticides or fungicides. Do not use in or near a greenhouse. Clean spreader equipment thoroughly before using it for any other purpose. Vapors from this product may injure susceptible plants in the immediate vicinity.

Do not apply to waters used for irrigation, agricultural sprays, watering dairy animals, or domestic water supplies.

Avoid drift of dust to susceptible plants.

Do not reuse empty bag. Destroy by burying in a safe place. Do not burn.

Do not use this product for purposes other than those recommended on the label.