110301
-1
110302

R.S. 7/15/80

5

ECOLOGICAL EFFECTS BRANCH
REVIEW

DATE: IN 4/1/80 OUT 7/15/80

FILE OR REG. NO. 33068-R

PETITION, EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED 4-1-80

TYPE PRODUCTS(S): I, D, (H), F, N, R, S, Herbicide

DATA ACCESSION NO(S). 241891-94

PRODUCT MGR. NO. Richard S. Mountford - 23

PRODUCT NAME(S) Aquashade

COMPANY NAME Aquashade Inc.

SUBMISSION PURPOSE Registration (FIFRA Section 3)

CHEMICAL & FORMULATION [redacted]

110301 - 23.63% acid blue dye No. 9 and

110302 - 2.39% acid yellow dye No. 23.

INERT INGREDIENT INFORMATION IS NOT INCLUDED

PESTICIDE NAME(S):

COMMON NAME: AQUASHADE (A mixture of two dyes: Acid Blue and Acid Yellow).

100.0 Pesticide Label Information

Color of label - Blue and white.

AQUASHADE® Patent Pending
Aquatic Growth Control

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION
NOT TO BE INGESTED

ENVIRONMENTAL HAZARDS

Shoreline non-target Plants (Cattails, Water-lilies) may suffer some contact burn if material accidentally is poured on them.

DIRECTIONS FOR USE

GENERAL CLASSIFICATION

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

STORAGE AND DISPOSAL

Store above freezing.

Disposal-Rinse container and dispose of with other rubbish.

DIRECTIONS FOR USE

Use Aquashade in closed or contained ponds. Not to be applied in water that will be used for drinking. Irrigation or watering Livestock.

Use to suppress growth of rooted aquatic macrophyte vegetation - Examples: Submersed Pondweeds-Curly leaf pondweed, Sago Pondweed, and Leafy Pondweed, also Elodea, Brittle Naiad and Slender Naiad.

DOSAGE RATE-Apply Aquashade at the rate of one gallon per acre of water, 4 foot average depth (one quart per acre foot).

METHOD OF APPLICATION-Aquashade may be applied around the shoreline or from a boat as desired. No need to dilute though material may be diluted with water and sprayed over the surface using hand held sprayer. Wind and current action cause material to quickly intermix with entire water area.

TIME OF APPLICATION-For best results apply before growing season starts or before target weeds reach surface. One application may be sufficient in all but extreme Southern U.S. In extreme South another application may be necessary two months after date of first application. physical removal or chemical killing of growth already present may be done before Aquashade is applied. This may be desirable where immediately clear water and continuing control is needed.

WARRANTY STATEMENT
-will be on bottom
of right panel-

Follow directions carefully. Timing of application, weather conditions, mixtures with other chemicals not specifically recommended and other factors in the use of the product are beyond the control of the seller. Buyer assumes all risks of use of this material not in accordance with directions herewith given.

Suppresses Submersed
Pond Weeds

ACTIVE INGREDIENTS

Acid Blue 9	23.63%
Acid Yellow 23	2.39%

INERT INGREDIENT [redacted] 100.00%

INERT INGREDIENT INFORMATION IS NOT INCLUDED

KEEP OUT
OF REACH OF
CHILDREN

CAUTION

Statement of
Practical Treatment

If swallowed drink plenty of liquid. If on skin wash with soap and water. If in eyes flush with water.

See side panel for additional precautionary statements

Distributed By-
AQUASHADE, INC.
Dobbs Ferry, NY 10522

Establishment# _____
EPA Registration# _____

Net Contents -
1 Gallon (3.785 Litres)

100.1 Pesticide Use

The pesticide Aquashade is to be used in water bodies for the growth suppression of rooted aquatic macrophyte vegetation such as curly leaf pondweed, Sago pondweed, Leafy pondweed and also Elodea, Brittle Naiad and Slender Naiad.

100.2 Formulation Information

The label gives the formulation as being a combination of two dyes - acid blue 23.63%; acid yellow 2.39% - [redacted]

The acid blue dye is also known by the name Neptune Blue and the yellow dye by the name Tartrazine [redacted]

100.3 Application Methods, Directions, Rates

Aquashade is to be applied directly over water bodies from shore or from a boat. A hand-held sprayer can also be used. For best results Aquashade should be applied before the growing season starts or before the target weeds reach the surface. One application may be enough except in the extreme southern part of the country.

If the user of Aquashade desires fast results the physical removal or chemical killing of aquatic macrophyte must be conducted prior to aquashade treatment.

The label advocates the use of Aquashade at a rate of one quart of material per acre foot of water. This is equivalent to about 0.8 ppm of the formulated material. Since the formulated material is [redacted] only 0.208 ppm of the 0.8 ppm would be solid active ingredient.

Of the 0.208 ppm formulated material 90.8% is acid blue dye and 9.2% is yellow blue dye or 0.189 ppm Acid Blue and 0.019 ppm Acid Yellow.

100.4 Target Organism(s)

Aquashade acts by screening off that portion of the solar light spectrum which is utilized by rooted aquatic macrophytes to conduct photosynthesis thus stopping growth.

The applicant claims that Aquashade effectively suppresses the growth of rooted aquatic macrophytes in general.

100.5 Precautionary Labeling

(See section 100.0 of this review.)

101.0 Physical and Chemical Properties

101.1 Chemical Names

a. Neptune Blue: (Color code No. 42090)

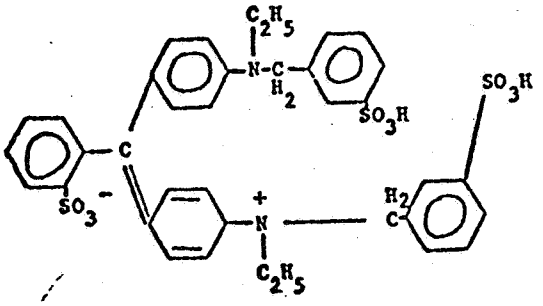
disodium salt of ethyl[4-(plethylem-sul-fobenzyl) amino)-a-(o-sulfophenyl)benzylidene) - 2,5-cyclohexadien-1-ylidene) (m-sulfobenzyl)ammonium hydroxide inner salt with smaller amounts of the isomeric disodium salts of ethyl(4-(p-[ethyl(p-sulfobenzyl) amino]-e-(o-sulfophenyl) benzylidenel-2,5-cyclohexadien-1-ylidene] (p-sulfobenzyl)ammonium, hydroxide inner salt and ethyl(4-(p-lethyl(o-sulfobenzyl)amino)...(0-sulfophenyl)benzylidene)-2.5-cyclohexadien-1-ylidene) (o-sulfobenzyl) ammonium hydroxide inner salt.

b. Tartrazine: (Color code No. 19140)

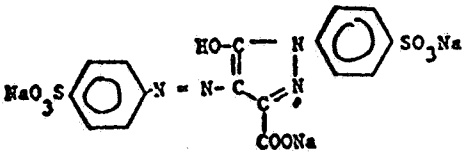
5-oxo-1-(p-sulfophenyl)-4-((p-sulfopheny])azol-2-pyrazoline-3-carboxylic acid, trisodium salt.

101.2 Structural Formulas:

a. Neptune Blue:



b. Tartrazine:



101.3 Common Name(s)

a. Acid Blue (Neptune Blue)

b. Acid Yellow 23 (Tartrazine C. Extra)

101.4 Trade Name(s)

[redacted]

101.5 Molecular Weight(s)

Not given.

101.6 Physical State (Color, odor, taste, etc.)

Aquashade is supplied as a deep aqua-blue, opaque liquid which contains 0.494 lbs. of Neptune Blue plus 0.05 lbs. of Tartrazine [redacted] for every 2.3 lbs of product (of a total of 0.544 lbs. of dye for every 2.3 lbs. of product or 23.7% total solids).

a. Neptune Blue [redacted]
- Reddish blue paste
- Specific gravity 1.8
- Particle size 1-40 microns ($\bar{x}$=25 microns)
- Melting point 1.86 °C-Decomposes
- Structure of the triphenyl methane type
- Free flowing paste
- pH of 1% solution is 3.5
- Molecular weight 792
- Pure dye content 44.10
- Chemical class - A20

b. Acid Yellow 23 [redacted]
- Color is deep yellow powder
- Structure of the Monoazo type
- Physical state is free flowing
- pH of a 1% solution is 6.27
- Chemical class A_{20}
- Odorless

101.7 Solubility

a. Acid Blue 9: - Water about 20% - soluble in ethanol - insoluble in oil.

b. Acid Yellow 23: - Soluble in water to about 6% - Insoluble in hydrocarbons and vegetable oils.

102.0 Behavior in the Environment

The EFB has not reviewed Aquashade as of this writing; however, the ECB reviewed aquashade in October, 1976 (see review of 11/4/76 by R.E. Ney and R.W. Cook). The following are some highlights of their review.

- ECB concluded that the applicant's data does not demonstrate persistance or dissipation of Aquashade in water but rather effective concentration because only the parent compound was analyzed for while other unknown compounds were used to treat the experimental ponds. Further, while the experimenter determined the halflife of Aquashade to be about two months the ECB concluded that halflife estimates could not be made, that Aquashade was significantly persistant over the study period (over 6 months for one of these studies) and very stable in the aquatic environment.

- Aquashade absorption to soils does not appear to be significant.

- The ECB indicated that: "The data requirements specified in our previous reviews have not been submitted" and "the applicant has taken no apparent action towards obtaining an experimental use permit."

- The ECB requested anew from the applicant the following studies and offered a brief description of each:

  - o Hydrolysis data
  - o Photodegradation data
  - o Metabolism in water under aerobic and anaerobic conditions
  - o Microbial metabolism studies including effects of pesticide on microbes and effects of microbes on pesticide
  - o Activated sludge study
  - o Adsorption data
  - o Water dispersal data
  - o Dissipation data (field study)
  - o Fish residue accumulation data
  - o Irrigated crop residue uptake data

Note: There has been no update to the above ECB requirements.

For further details see the Environmental Chemistry Branch review of 11/4/76 by R.E. Ney Jr. and R.W. Cook.

103.0 Toxicological Properties

103.1 References from the Toxicology Branch (TB).

None - (For old rabbit data-1973-see EEB's H.T. Craven's 3/10/77 review and Section 104.4 of this review).

103.2 Minimum Requirements

103.2.1 Avian Acute Oral LD_{50}

Mallard duck LD_{50} > 42.4 ml/kg (or >10.6 g/kgof the active ingredient - 10.49 g/kg of Neptune Blue +0.11 g/kg of Tartrazine [redacted]. This is a 11/30/79 test that was found to be acceptable after concentrations and dosages were clarified.

103.2.2 Avian Dietary LC_{50}

Mallard Duck 8-day dietary LC_{50} >5000 ppm.
Bobwhite Quail 8-day dietary LC_{50} >5000 ppm.

These two 8-day avian dietary studies were reviewed on 3/10/77 by H.T. Craven and found to be unacceptable due to unclear dosage levels. The information that could be used to rehabilitate these tests has not been presented to EPA.

103.2.3 Fish Acute LC_{50}'s

Bluegill sunfish 96-hour static LC_{50} > 1000 ppm.
Rainbow trout 96-hour static LC_{50} > 1000 ppm.

H.T. Craven's review of 3/10/77 also reviewed these two fish tests and found them wanting for lack of clear dosage level information which if sent to EPA could be used to rehabilitate these data.

103.2.4 Aquatic Invertebrate LC_{50}

Daphnia magna 48-hour LC_{50} > 3.2 g/l of formulated undiluted compound (or 760 ppm of a.i.).

This 11/30/79 test was validated by A. Yamhure and found to be acceptable after treatment concentrations were clarified by the researcher.

103.3 Additional Terrestrial Laboratory Tests

None

103.5 Field Tests

Three studies on the aquatic plant control potential of Aquashade were presented by the applicant. The following is an overview and analysis of the height lights of each:

The Use of Aquashade to Control the Reinfestation of Hydrilla After Herbicide Treatment. J.A. Osborne, University of Central Florida, 1978.

In this study a 0.41 ha experimental pond in Orlando, Florida was treated with the herbicide Hydrothol 191 on 10/5/78 to remove the Hydrilla parent population and with Aquashade on 10/7/78. The concentration of dye in the water was determined spectrophotometrically and maintained at about 2.0 ppm.

Two parallel bottom transects of the pond were monitored bimonthly by means of a fathometer to record frequency of occurrence of Hydrilla.

Osborne made the following interesting observations:

1. "The dye holds its concentration for approximately three months during exposure to sunlight."

2. "There is little doubt that the prolonged and persistent thermal stratification of the experimental pond, was induced by Aquashade limiting solar radiation."

Although this study is of general interest, the lack of control ponds similar to the treated pond limits its usefulness as a tool for registration efforts. Control ponds with statistically proven ecological similarities to the experimental pond(s) should have been used. Needed control ponds would have been: Totally untreated pond; Hydrothol 191 treated pond and the exact concentration of active ingredient stated (is not given in this study); Aquashade only treated pond with parent Hydrilla population mechanically removed and finally a pond treated in the manner described in the study.

The lack of adequate control ponds, clearly established active ingredient concentrations, and the inability to separate the effects of Hydrothol 191 from Aquashade severely limit the usefulness of this study. Other minor inadequacies were noticed.

Aquashade Trials on Myriophilluim spicatum at Cornell University. John Peverly, 1979.

Three 0.04 ha (0.1 acre), 1.8 m (6 ft.) deep were used in this experiment. The two treated ponds (228 and 235) had been treated the year before (apparently with Aquashade) while pond 236 which was the control pond had not been treated the year before.

Aquashade was applied very early in spring, over the ice, and "higher than normal rates were applied to allow for dilution effects upon snow and ice melting, and spring rains. The Aquashade Concentrations decreased to recommended levels by mid-June."

Growth inhibition was determined by weight/length measurements of one square meter quadrants.

Data from this study seems to indicate that Aquashade can control Myriophyllum growth, however it does not address the question of what happened to other plants and the animals in the system. The criteria used for the selection of these ponds were not given. Similarities among the three ponds were not discussed.

Table 3 shows that control pond 236 had Aquashade concentrations of 0.25 and 0.24 ppm for the months of August and September. The text does not explain this apparent anomaly or its potential effects.

The treated ponds had been treated the previous year but the author does not determine nor discuss potential interface from residues in the sediments.

This is basically a monospecific efficacy study of Aquashade with very little overall ecological value.

Aquashade as an Aquatic Weed Control Agent. Carol A. Lembi. Purdue University, 1977.

This report summarizes 1976 tests on Aquashade as an aquatic weed control agent. The study is divided into three main sections: 1.) aquatic weed control results, 2.) effects on plankton, and 3.) factors affecting the persistence of Aquashade in the field. The aquatic weed control trials were conducted in the field at four sites and also in 17 gal barrels for efficacy evaluation on 6 aquatic weed species. Aquatic weed data from the field was collected by dredging the pond bottoms at various depths at various time intervals. Plankton studies were also done at the field sites.

A summary of the results on factors affecting persistence is included toward the end of this report.

Some highlights of this study are as follows:

- Several of the Aquashade treated ponds had been treated before with copper compound and/or herbicides such as Cutrine treated copper and copper sulfate. At least one of the ponds had previously been treatedwith both Diquat and copper sulfate.

- Two of the four Aquashade treated ponds (50%) developed Euglena blooms that had to be treated with herbicides. Untreated control areas of the experimental ponds never developed Euglena blooms.

- The results obtained show "relative susceptibility of different plant genera to Aquashade."

- Data indicate that both Hydrilla verticillata and Myriophillum verticillatum are resistant to the action of Aquashade at concentrations of 10.0 ppm and 1.0 ppm respectively.

- Treated portions of the ponds were from 1^{o} - 2^{o}C cooler than the non-treated portions on ponds.

- Plants requiring lower temperatures and light intensities seemed more refractive to the action of Aquashade.

- Over a period of two years the author has found 10 species of aquatic vascular plants susceptible to Aquashade.

- The data obtained from one of the 4 treated ponds is said by the author to be "completely useless" (Schidler pond).

- Aquashade concentrations decline from 0.77 ppm on March 19 to 0.44 ppm on July 28 (4-1/3 months) or 43% decline.

- "The halflife of Aquashade in the field varies from 1-2 months."

It is readily apparent that this study contains certain problems and contradicts the results obtained by the other two studies discussed here.

Problems:

- While the study states (p.15)that the halflife of Aquashade in the field varies from 1-2 months, elsewhere (p. 3, see table) shows the concentration of Aquashade declining from 0.77 ppm on March 19 to 0.44 ppm on July 28 or a total of 0.33 ppm (43%) in 4.3 months.

- As with the study by Osborne, several of the Aquashade treated ponds had been treated before or after with other chemicals. The end result is that the effects of Aquashade alone can not be determined. Synergistic effects and lingering residues are serious mechanisms of interference.

- The author does not name the 10 species of vascular plants that have been found to be susceptible to Aquashade nor does she discuss the "realistic susceptibilities of these ten plants to Aquashade.

- Downey Pond did not have a control area (this pond represents 25% of the data obtained).

- The data for Schidler Pond is useless or about another 25% of the data.

- This study concludes that neither Hydrilla nor Myriophillum are susceptible to Aquashade at concentrations of 10.0 and 1.0 ppm respectively. These findings contradict those of Osborne and Peverly. Is there so much margin for error in this type of study? Have all the contributing factors been taken into consideration by all the authors? The natural variability of sunlight intensity throughout the day, water transparency, temperature, pH and depth should have been taken into consideration by all authors. Such was not the case making results difficult to compare.

104.0 Hazard Assessment

This hazard assessment is based on data and information that has been presented by the applicant to EPA over the last seven years (1973-1980).

104.1 Discussion

The applicant proposes to use Aquashade, a combination of two color dyes as an aquatic macrophyte growth suppressant. Aquashade's mode of action is that of a photosynthetic inhibitor which acts by screening out those bands of the solar spectrum used by certain aquatic plants as energy source in photosynthesis.

Although Aquashade's action is not directly exerted by actually entering the cellular compartment, it does nevertheless act physiologically as an aquatic plant growth retardant. From the data presented it appears that Aquashade's growth slowing effect is not well defined. Further, experimental results are conflictive and efficacy data does not seem to support the across the board recommended application rate of 0.8 ppm of the proposed label. For example, John Peverly's study on Myriophyllum had application rates of 2.2 and 2.9 ppm. Osborne's study recommends an application rate over 2.0 ppm for the control of Hydrilla.

Results obtained by Lembi in her 1977 study of Aquashade as an aquatic weed control agent show that application rates of 0.77 ppm are not effective against Hydrilla or Myriophyllum and indirectly suggest that under the experimental conditions used Aquashade had a half-life of about 6 months. From Lembi's study one can also conclude that Aquashade's photosynthetic inhibitory action is capable of selecting for aquatic pests by making more nutrients available to those photosynthetic organisms capable of multiplying under the light limiting conditions produced by Aquashade. The Englena blooms of the treated pond sections strongly suggest this to be the case. Here herbicides had to be used to remove a pest brought about by the use of Aquashade.

The applicant's data strongly suggest that Aquashade has a long halflife under normal field conditions, that it upsets the natural thermal balance of the water, and that its action can bring about blooms of pest plants with the end result that in some cases the medication may be more damaging than the pests it seeks to eliminate. These strong actions of Aquashade could easily destroy the natural balance of an aquatic ecosystem by altering seasonal fluctuations and trophic relationships. These are the reasons why the inhibitory action of Aquashade should be carefully investigated and defined.

The toxicity of Aquashade to wildlife appears to be low (see section 103 of this review); however, this judgment is not definitive because only the two November 30, 1977 tests (Daphnia and Mallard duck) have been found acceptable. Fish LC_{50}'s and avian dietary tests of April 2, 1975 and June 2, 1975 that were reviewed by H. T. Craven of EEB on March 10, 1977 are still considered unacceptable due to the absence of dosage levels and well defined test concentrations.

104.2 Likelihood of Adverse Effects to Non-target Organisms

As the information and data supplied by the applicant stands at present grave doubts arise as to the short and long term adverse effects that Aquashade may have if used on natural water bodies or man-made water bodies that discharge directly or indirectly on others of ecological value.

The probability of damage to non-target species by Aquashade cannot be defined responsibly at present because the ecological effects of Aquashade are known only superficially. The existing data at times, as we indicated before, is conflictive or inadequate.

The acute adverse effects of Aquashade on birds and aquatic invertebrates, as suggested by the two valid tests (Mallard and Daphnia), may be mild.

104.4 Adequacy of Toxicity Data

(See also all of section 103 of this review.)

Test Organism	Type of Test	Results	Test Date	Material And/Or Dosages	Category
Bluegill sunfish	96-h TL_{50}	>1000 ppm	4/2/75	(?)	Non-Acceptable
Rainbow trout	"	"	"		"
Mallard duck	8-day dietary	>5000 ppm	6/2/75	"	"
Bobwhite quail	"	"	"	"	"
Mallard duck	Acute Oral LD_{50}	>42.2 ml/kg	11/30/79	Formulated*	Acceptable
Daphnia magna	48-h LC_{50}	>3.2 g/l	"	"*	"

*Mallard duck test had a maximum concentration of 10.60 g/kg a.i. Aquashade.

*Daphnia test had a maximum concentration of 760 ppm a.i. Aquashade.

Albino rabbits and albino rats LD_{50} (8/13/73) with 95% Aquashade (?) were >2 g/kg and 25.8 g/kg respectively.

The only fish and wildlife toxicity tests acceptable at present are the two dated 11/30/79.

All other tests have been found unacceptable due to lack of precise information on dosage levels and/or test concentrations of active ingredient. As H.T. Craven commented in his 3/10/77 review these tests could be validated if the corresponding information were to be supplied. It has not.

107 Conclusion and Recommendations

The following additional data is to be presented to EPA if general registration is requested:

1. The 96 hour LC_{50}'s for sunfish and rainbow trout should be repeated or the concentrations and dosages used in the original tests (4/2/75) presented as to upgrade them.

2. Because of the long half-life of Aquashade it is necessary to try to determine the chronic effects that this compound may have on natural systems. To the effect tests on chronic toxicity and in primary productivity should be conducted.

   a. Fish embryolarvae study using brook trout (Section 163.72-4 of EPA's Proposed Guidelines for the Registration of Pesticides in the U.S., 1978).

b. Avian reproduction tests for both Mallard duck and Bobwhite quail.

Tests 2a. and 2b. above are to be conducted if the applicant wishes to treat natural bodies of water directly or indirectly with Aquashade.

3. Field studies are necessary to try to define more narrowly the range of photosynthetic activity of Aquashade on various types of aquatic plants (phytoplankton, thalloplyta and angiospermae) and therefore its possible adverse effects on the trophic relationships of natural water bodies and on non-target species. EEB personnel will be glad to assist on experimental protocol design.

4. The effective concentrations of Aquashade for target species do not seem to be well defined. Studies should be conducted as to be able to make efficacy label recommendations more specific and to determine the maximum levels of Aquashade that would have to be used. It is based on this type of data that the toxicity of Aquashade must be appraised.

5. Since Aquashade is being used to control plant growth levels on cattle watering ponds it may be advisable to consult the Residue Chemistry Branch on the need to establish residue levels for Aquashade.

One must conclude that neither the quality, nor the quanitity of fish and wildlife Aquashade related data that has been presented to EEB are enough for the Branch to base a well informed decision on the potential use of Aquashade as a plant growth inhibitor in natural water bodies. EEB therefore recommends that the applicant be granted limited use registration for Aquashade.

Under this limited use registration the applicant will be allowed to only use Aquashade in man-made ornamental water bodies that are not used by animals that may be later consumed by humans or water bodies that discharge into other aquatic natural systems. The label should clearly establish these limitations.

Should the applicant decide to obtain a more general use pattern permit an experimental use pattern permit an experimental use permit (EUP-FIFRA Section 5) should be presented to EPA for review and approval. Such an EUP would include but not limit itself to all the tests requested in this review under Section 104.5

Should any further clarification be needed please do not hesitate to contact this Branch.

Alvaro A. Yamhure
Section 3
Ecological Effects Branch, HED, (TS-769)

David Coppage
Head Section 3
Ecological Effects Branch, HED, (TS-769)

Clayton Bushong
Branch Chief
Ecological Effects Branch, HED, (TS-769)

cc. eeb file

ROUTING AND TRANSMITTAL SLIP

Date 3/26/80

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. ECOLOGICAL EFFECTS BRANCH		
2.		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

The 1976 Trials Aquashade as an Aquatic Weed Control Agent. By Carole H. LEMBI Dept. Botany & Plant Patho - logy Purdue Univ. Lafayette Ind.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
LARRY SCHNABELT - AM 23 FHB RB	E-351
	Phone No. 51397

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
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19

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

THIS IS BEING ROUTED ONLY TO ECOLOGICAL EFFECTS BRANCH SINCE YOU HAVE THE LEAD IN MAKING ENVIRONMENTAL RISK ASSESSMENTS, AND NO ADDITIONAL ENVIRONMENTAL CHEMISTRY DATA WAS SUBMITTED. BASED ON YOUR REVIEW OF THE ENVIRONMENTAL SAFETY DATA, WOULD YOU CONSULT WITH ENVIRONMENTAL FATE BRANCH TO DETERMINE IF NONE, SOME OR ALL OF THE REQUESTED ENVIRONMENTAL CHEMISTRY DATA IS REQUIRED TO SUPPORT REGISTRATION.

5/16/80 (1)

(see reverse)

new supplier
old was [redacted]

[redacted]

— New supplier [redacted]

PRODUCT INGREDIENT SOURCE INFORMATION IS NOT INCLUDED

INERT INGREDIENT INFORMATION IS NOT INCLUDED

— U.S. patent No. 4042367 for Oxasbode.
Patented for this use.

— Actual field concentration:

— 1 pint of the material as sold / gallon.
1 gallon / 1/4 acre of H_2O.

— Dr. Ralph Shapiro
Product Safety Lab.
New Brunswick, N.J.
(201) 545-1704
} TOX.
Talked to him on 5/16. 4 p.m. will send inform on consent.

called on 5/19/80 Message with Pam Rood Dept

— Carol Lembi — Purdue University — Plant growth
Plant Pathology (Expert effects of Oxasbode.
(317) 749-6421 —— 463-6771
(9-10 a.m.) 583-2894
— I called Dr Lembi on 5/16/80 and left her message to call me back on monday 5/19/80. —
— Talked to Ms. Billie Wilson from whom I obtained phones for Dr. Shapiro and Lembi

→ over

21

- On 5/21/80 Dr. Carol Zenuki called me. I requested information from her on the effects of Agrobacteria on primary productivity. She said she did not know any or knew of someone who did. All her answers were conjecture.

- On 5/21/80 Spoke to Acting PD Jim Stone and explained to him our position.

INERT INGREDIENT INFORMATION IS NOT INCLUDED PRODUCT INGREDIENT SOURCE INFORMATION IS NOT INC

Cpd. NAME: Aquashade

ACTIVE INGREDIENTS: 1. Neptune blue 23.63%

[redacted] 2. TARTRAZINE [redacted] 2.39% (GRA

TEST ORGANISM	GRADE	TEST CONCENT.	TYPE of TEST	RESULTS	TEST Classificat.	REVIEWER and DATE
Albino rabbits		2.0 mg	LD 50	> 2 gms		
Albino RATS	95%		LD50	25.8 g/Kg		
Bluegill Sunfish and Rainbow trout			STATIC 96-h TL50	> 1000 ppm	NON-ACCEP.	H.T. CRAVEN 3/10/77
Mallard duckling			8-d. dietary LC50	> 5000 ppm	NON-ACCEP.	H.T. CRAVEN 3/10/77
Bobwhite quail			"	> 5000 "	" "	
Mallard duck	100%	50 ml/Kg	ACUTE ORAL LD50	> 42.4 ml/Kg	Accept.	A Yamhure 6/16/80
Daphnia magna	100%		48-h LC50	> 3.2 g/l	Accept.	A. Yamhure 6/16/80

P.S. Formulation as received by users is 21.48% acid blue and 2.17% acid yellow [illegible]

For clarification on dosage of Mallard duck and Daphnia tests of 11/30/79 see clarification report of 5/23/80 from Ralph [illegible] of Product Safety Lab.

7/15/80

...id dye (IIW 23).

A. VANBURE

Test Date	
8/13/73	
8/31/73	
4/2/75	NO DOSAGE LEVELS GIVEN
6/2/75	CONCENTRATION OF START-ING TEST MATERIAL NOT GIVEN
6/2/75	DOSAGE LEVELS NOT CLARIFIED
11/30/79	Acceptable 21.48 Acid Blue or 10.49 g/Kg; 2.17 " yellow and 0.1 g/Kg
11/30/79	Acceptable 21.48% acid blue = 0.69 g/l or 690 ppm; 2.17% " yellow = 0.07 g/l or 70 ppm; 760 ppm Aquashade.

DOSAGE LEVELS IS INVALID