

EEE BRANCH REVIEW

DATE: IN ^{6/5/77}~~6/18/77~~ OUT 11/16/77 IN _____ OUT _____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 6704-TT

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

DATA ACCESSION NO(S). _____

PRODUCT MGR. NO. Miller (12)

PRODUCT NAME(S) Starlicide

COMPANY NAME Registration application is for U.S. Fish and Wildlife

SUBMISSION PURPOSE New Registration

CHEMICAL & FORMULATION DRC-1339. 3-Chloro-4-Methyl Benzamine HCL

100.0 Pesticidal Use

Control of herring gull (Larus argentatus) and black-backed gulls (Larus marinus) populations which have appeared to exclude laughing gulls (Larus atricilla) loafing puffins (Fratercula arctica), Leach petrels (Oceanodroma leucorhoa) eiders Sonateria sp., and arctic terns (Sterna paradisea) from island nesting sites along the northeastern United States coast.

100.1 Application Methods/Directions

GENERAL: Use 1339 Gull Toxicant 98% Concentrate for preparing bread baits to control herring gulls (Larus argentatus) and great black-backed gulls (Larus marinus) only. Apply only within the coastal area of the northeastern U.S. (Delaware, New York, New Jersey, Connecticut, Rhode Island, Maine, Massachusetts and New Hampshire) in breeding areas or colonies within predation radius of important nesting colonies of terns, puffins, and laughing gulls from March 1 to June 30 each year. Closely follow directions given below for bait preparation and application.

BAIT PREPARATION: Blend 6.0 gms 1339 Gull Toxicant 98% Concentrate into 454 gms (1.0 lb) melted, stick oleomargarine. Spread 15 gms of blended mixture (1 tablespoon) on a slice of standard sandwich bread, and cover with another slice. Immediately cut each sandwich into 9 equally-sized cubes. Prepared baits must be placed in a plastic bag for transportation or distribution and must be used within 12 hours.

BAIT APPLICATION: Each site destined to be treated will be prebaited with untreated bread cubes to ensure rapid bait acceptance. Treatments will be made by hand only in or near nesting colonies of the target species. Treated bread cubes will be broadcast or placed only in the same areas where bread cubes were accepted during prebaiting. Initial applications will be broadcast; however, no broadcast application will be made after April 20. Applications after April 20 will be made at or in gull nests. The number of bait applications will be determined by the degree of control provided by previous applications; however, no more than 10 bait applications should be made in or near individual colonies. The number of baits exposed at an individual site must not exceed 5 times the total number of gulls to be controlled at that location. Baits regurgitated or accepted must be retrieved within 12 hours after each application and disposed of by burial or other adequate means. A search must be conducted within 48-72 hours after application to remove and dispose of bird carcasses, except for those areas where disturbance of eiders may adversely affect their breeding efforts.

7

Background

In applying for this registration, the U.S. Fish and Wildlife Service was acting as a liaison between the National Audubon Society and the E.P.A. The Audubon Society and USFWS concern was that the large, black-backed and herring gulls have displaced and will eventually drive out smaller, more timid marine birds. Their plan was to bait and poison enough large gulls to remove the competitive pressure on the small birds.

The concern was caused by the population decreases of these species during the late 1960's and early 1970's as described below:

Laughing Gull: This was the species of primary concern, and the population decreases of this species in the northeastern United States during the period in question appear to be related to the simultaneous expansion of herring gull colonies. On Muskeget Island off of Nantucket, laughing gulls had reached a total population of 20,000 pairs by the 1940's. By 1970 only 50 pairs were left (Nisbet, 1970). At that time, laughing gulls which were displaced from Muskeget did not appear to be colonizing the nearby and apparently suitable islands of Monomoy and No Man's Land. On Stratten Island, Maine, the laughing gull colony numbered 125 pairs in 1951 and was flourishing in 1952 (Gross, 1952). In 1969 and 1970, Drury and Nisbet found the colony to be deserted (Nisbet, ?). In Maine, the only other sizeable laughing gull colony of which Nisbet was cognizant was the 100-150 pair colony at Matinincus Rock.

Arctic Tern: By 1970 only 2400 pairs of these birds were extant in Maine, and the three major colonies were on islands being overrun by the herring gull. The colony on Petit Manan consisted of 1300 pairs. Matinincus Rock colony which had accounted for 1200 pairs in 1968 was down to 450 pairs in 1970. Foster Island colony was similarly diminished from 1000 pairs in 1931 to 300 pairs in 1970 (Massachusetts Audubon Society, 1971).

Puffin: At Matinincus Rock there were 40 pairs in 1937. Drury's group saw no more than 55 puffins at one time during 1968-1970. An estimated 20-30 pairs were nesting (Massachusetts Audubon Society, 1971).

Leach' Petrel: There is substantial evidence that large gulls competed directly with this species. Corpses of leach' petrels were found near gull nests on Large Green Island, Matinincus Rock and Large Brimstone Island (Massachusetts Audubon Society, 1971).

Common Tern (Sterna hirundo): The decline of this species appeared to be correlated with the increase in numbers of large gulls. In 1970 there were only 2000 pairs in the state of Maine compared with 8,700 pairs in 1930. A colony of 100 to 200 was said to have vanished between 1965 and 1970 (Massachusetts Audubon Society, 1971).

Razorbill (Alcatorda): This species was of some concern as it nested only at Matinincus Rock and Old Man (Machis Bay). The numbers of great black-backed and herring gulls on Matinincus had increased from 80 pairs in 1965 to approximately 200 pairs in 1969 on Matinincus Rock (Massachusetts Audubon Society, 1971).

101.0 Chemical Name and Physical Properties

101.1 Chemical Name

3-Chloro-4-Methylbenzamine hydrochloride

101.2 Common Name (NIOSH, 1976)

1-Amino-3-chloro-4 Methylbenzene. 4-amino-2-chlorotoluene. 2-chloro-4-aminotoluene. 3-chloro-4-Methylaniline. 3-chloro-p-toluidine. CPT. DRC 1339.

101.3 Structural Formula

Not given

101.4 Molecular Weight

141.61 (NIOSH, 76)

101.5 Physical State, Color, Odor

Not given

101.6 Solubility

Not given

4

102.0 Behavior in the Environment

Not given.

103.0 -
103.4 Toxicological Properties

(See review by S. Fredericks, 12/17/75, plus the following recently submitted additions to 103.1.4.)

5

103.1.4

DATA REVIEW NUMBER: ES-VII-L

TEST: Acute 96 hour LC₅₀ on an estuarine marine invertebrate. 150 penaeid shrimp were used in this test.

SPECIES: 19.3% were Pengeus duorarum and 80.7% were Penaeus setiferous.

RESULTS: The calculated LC₅₀ was 10.789 ppm. Confidence limits were not calculated. This calculation does not include two data points that would greatly lower the LC₅₀ value (See graph on following page). The test temperature varied between 20 and 24°C.

CHEMICAL: 3-chloro-4-methyl benzamine hydrochloride 95%

TITLE: Acute toxicity of 3-chloro-4-methyl benzamine hydrochloride to shrimp and crabs.

ACCESSION NO.: 230286

STUDY DATE: April 11, 1977

RESEARCHER: Dr. William W. Walker, Dr. Adrian R. Lawler and William D. Burke; Gulf Coast Research Laboratory, Ocean Springs, Mississippi.

REGISTRANT: U. S. Department of Interior, Fish and Wildlife Service.

VALIDATION CATEGORY: Invalid and cannot be upgraded.

CATEGORY REPAIRABILITY:

1. Two species of shrimp were used in the LC₅₀ determination.
2. The chemical parameters for the dilution water as prepared from Rila Marine Mix must be submitted.
3. The water test temperature fluctuated from 20 to 24°C.
4. More than ten percent of the controls died.
5. The 100 percent mortality figures, had they been used in the regression analysis, would have produced a much smaller LC₅₀ value than 10.789.
6. No standard geometric progression was used in assigning the dosage levels of 0.1, 1.0, 10, 25, and 50 ppm.

103.1.4

DATA REVIEW NUMBER: ES-VII-N

TEST: Acute 96 hour LC₅₀ with active only.

SPECIES: Callinectes sapidus -- Blue crab

RESULTS: The calculated LC₅₀ was 15.991 ppm.* The test temperature varied between 20 and 24°C.

CHEMICAL: 3-chloro-4-methyl benzamine hydrochloride.

TITLE: Acute toxicity of 3-chloro-4-methyl benzamine hydrochloride

ACCESSION NO.: 230286

STUDY DATE: April 11, 1977

RESEARCHER: William W. Walker, Adrian R. Lawler, and William D. Burke: Gulf Coast Research Laboratory, Ocean Springs, Mississippi.

REGISTRANT: U. S. Fish and Wildlife Service

VALIDATION CATEGORY: Invalid

CATEGORY REPAIRABILITY: This study might be upgraded to core with submission of the chemical constituency of the bioassay water including (1) the mg/liter of NaF, Sr Cl₂·6 H₂O, H₃BO₃, KBr, K Cl, Ca Cl₂·H₂O, Na, SO₄, Mg Cl₂·6H₂O, Na Cl, Na₂ SiO₃·9H₂O, Na₄ EDTA, NaHCO₃. (2) Also the pH of the bioassay water should be submitted. (3) The confidence limits of the LC₅₀ should also be determined.

*This is an acceptable value as an LC₅₀ of 16.014 ppm was derived by linear regression by the environmental safety staff and was interpolated as 16.5 ppm on a hand-drawn graph.

17

104.0 Hazard Assessment

On November 11, 1977, the reviewer made telephone communications with Dr. William Drury of the College of the Atlantic and Dr. Michael Erwin who has made Atlantic Coastal bird surveys by helicopter for the past two summers. They both indicate that the large gull populations have stabilized in New England. Dr. Erwin had definite knowledge that the laughing gulls displaced from Muskeget had established colonies on Monomoy. He pointed out that laughing gulls that far north should be considered as aberrant populations anyway.

This information was passed on by the reviewer to Dr. Duncan McDonald of the U. S. Fish and Wildlife Service. Dr. Duncan said to consider this case "completed."

105.0 Conclusions

It is the understanding of the environmental safety staff that the U. S. Fish and Wildlife Service does not see a need to proceed with the large gull control program or the registration of DRC 1339. Therefore, the environmental safety staff does not concur with the proposed registration.

The shrimp test conducted by Gulf Coast Research Laboratory could not have been accepted in support of DRC-1339 registration because:

1. Two species of shrimp were used.
2. More than ten percent of the control animals died.
3. The dose levels are too widely spaced.

The blue crab test might have been accepted in support of registration if the following data had been submitted:

1. The chemical parameters of the bioassay water including the concentration of:

Sr Cl₂-6 H₂O, H₃BO₃, K Br, K Cl, Ca Cl₂-H₂O, Na SO₄, Mg Cl₂-6 H₂O, Na F, Na Cl, Na₂ SiO₃-9 H₂O, Na₄ EDTA, and NaH CO₃ in mg/liter.

2. The pH of the bioassay water.
3. The confidence limits for the LC₅₀.

Robert K. Hitch *RKH*
Environmental Safety Section
EEEEB-RD
WH-567

References

Gross, A.O. 1952. The herring gull cormorant control project. 1952. unpublished report. U. S. Fish and Wildlife Service.

Massachusetts Audubon Society. 1971. Memorandum: The need for control of gulls on two Maine Islands.

NIOSH. 76. Registry of toxic effects of chemical substances. U. S. Government Printing Office. Stock No. 017-033-00166-9.

Nisbet. Date not known. The laughing gull in the Northeast, Volume 25. No. 4. pp. 677-683.

Nisbet, I.C.T. 1971. Laughing gull colonies in the North East. Massachusetts Audubon. March 1971.