

4-7-82

118401  
SHAUGHNESSEY NO.

10  
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 2/23/82 OUT 4/7/82

FILE OR REG. NO. 241-260

PETITION OR EXP. PERMIT NO. \_\_\_\_\_

DATE DIV. RECEIVED February 22, 1982

DATE OF SUBMISSION January 7, 1982

DATE REQUESTED COMPLETION April 8, 1982

TYPE PRODUCT(S): I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) AMDRO

COMPANY NAME American Cyanimid Company

SUBMISSION PURPOSE Proposed Conditional Registration of  
Fire Ant Use on Cropland

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

## 100.0 Purpose of Submission

The conditional registration of Amdro (EPA Reg. No. 241-260) for use on cropland to control imported fire ants.

## 100.1 Application method/Application rates

Amdro baits will be broadcast by both ground and aerial equipment at rates of 1 to 1.5 lbs formulated product per acre. Individual ant mounds can, however, be treated by hand at the rate of 5 teaspoons per mound.

## 100.3 Precautionary Labeling

This product is toxic to fish. Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply when weather condition favor drift from target areas.

## 100.4 Target Pests

Red imported fire ants (Solenopsis invicta).

## 100.5 Geographic Restrictions

Currently there are no geographic restrictions associated with Amdro's label. This insecticide would, however, most likely be applied in one or more of the states currently infested by fire ants. USDA's Environmental Impact Statement for the 1981 Cooperative Imported Fire Ant program documented states known to contain populations of imported fire ants (acreage reported infested):

Texas (58,000,000)	Mississippi (26,000,000)
Louisiana (31,000,000)	Alabama (30,000,000)
Arkansas (4,000,000)	Florida (37,000,000)
South Carolina (12,000,000)	North Carolina (2,000,000)
Georgia (30,000,000)	

## 102.0 Environmental Fate Data

Terrestrial Environment

See previous reviews by Hopkins (7/18/80), Rexrode (11/13/79).

Aquatic Environment

See previous reviews by Hopkins (7/18/80), Rexrode (11/13/79).

## 103.0 Toxicological Properties

## 103.1 AVIAN ACUTE ORAL

Species	LD <sub>50</sub> (mg/kg)	Confidence Limits (P<.05)	% Active Ingredient	Validation Status
Mallard	>2510	N.A.	92	Core
Bobwhite	1828	(983-3402)	92	Core

## 103.2 AVIAN DIETARY

Species	LC <sub>50</sub> (ppm)	Confidence Limits (P <.05)	% Active Ingredient	Validation Status
Mallard	4355	(2877-6592)	92	Core
Bobwhite	1136	(908-1420)	92	Core

## 103.3 FISH ACUTE

Species	LC <sub>50</sub> (ppm)	Confidence Limits (P <.05)	% Active Ingredient	Validation Status
Rainbow	0.16	(0.13 - 0.19)	92	Core
Bluegill	1.7	(1.4 - 2.1)	92	Core
Rainbow*	0.15	(0.12 - 0.18)	92	Core
Channel* Catfish	0.09	(.08 - 0.11)	92	Core

\* 96-hour no effect level (NOEL) of 0.056 ppm was reported.

103.5

## INVERTEBRATE

Species	LC <sub>50</sub> (ppm)	Confidence Limits (P<.05)	% Active Ingredient	Validation Status
<u>Daphnia magna</u>	1.14	(0.93 - 1.39)	92	Core

103.6

## MAMMALIAN

Species	LD <sub>50</sub> (mg/kg)	Confidence Limits (P<.05)	% Active Ingredient	Validation Status
Rat (male)	825	Not Reported	Not Reported	Unknown

104.0

## HAZARD ASSESSMENT

Amdro's Previous EEB Registration History

<u>DATE</u>	<u>CROP</u>	<u>Application Rate A.I./acre</u>	<u>EEB Recommendations</u>
3/28/79	EUP: Cropland	0.10 - 0.24 oz	No objection
11/13/79	EUP: Cropland/ Noncropland	0.10 - 0.17 oz	No objection
7/18/80	Registration: Pasture, Range, grass, Lawns, turf, non-agricultural areas	0.14 - 0.21 oz	Objection (See Footnote 1)
1/22/82	Registration: pineapple, sugar cane	0.14 - 28.0 oz	Objection

Footnote #1

Amdro (EPA Reg. # 241-260) is currently registered for use on pasture, range grass, lawns, turf, and non-agricultural areas.

Formulated Bait Physical/Chemical Characteristics\*\*

Odor = baits emit rancid smell after prolonged exposure to air

Color of bait = yellow to tan

Mesh size = 8-16 (2.36-1.18 mm in length)

weight of formulation = 1.4 mg

Weight of toxicant on one (1) bait determined in the manner shown below:

1 bait [REDACTED] = 1.4 mg

1 lb = 453.59 gram or 453,590 mg

$$\frac{453,590 \text{ mg}}{1.4 \text{ mg}} = 323,992 \text{ baits/lb.}$$

One pound of Amdro contains 0.14 oz or 3.96 grams active ingredient

$$\frac{3.96 \text{ grams active ingredient}}{323,992 \text{ baits}} = 0.0122 \text{ mg/bait}$$

## Active Ingredient:

Tetrahydro-5,5-dimethyl-2(1H)pyrimidinone(3-[4-(trifluoromethyl)phenyl]-1-(2-[4-trifluoromethyl)phenyl]ethenyl)-2-propenylidene)hydrazone .....	0.88%
Inert Ingredients .....	99.12%
TOTAL .....	100.00%

(1.0 lb. contains 0.14 oz. of active ingredient)

EPA Reg. No. 241-260

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\*\*Data on bait formulation obtained from registrant (Dr. Don Linkfield) via telephone 3/23/82 (609-794-0460-Extention 2361).

## 104.1 Introduction

Hazards to non-target mammalian and avian species discussed in this review are based upon the average weight of one (1) Amdro bait and the LD<sub>50</sub> for the most sensitive organisms tested (Section 103.1 / 103.6). Aquatic hazards are based upon estimated aquatic concentrations resulting from a direct application to water and the LC<sub>50</sub> for the most sensitive aquatic organisms tested (Section 103.4 - 103.5). Toxicological extrapolations across species lines do not include the possibility of species hypersensitivity to Amdro.

Formulated baits will be broadcast uniformly by both ground and aerial equipment at a rate of 1 to 1.5 pounds formulation (.14 to .21 oz/active/ acre) per acre. Amdro baits contain an [REDACTED] that functions as an attractant to imported fire ants. [REDACTED] treated with 0.0122 mg of toxicant.

### 104.1.1 Mammalian Exposure

Amdro is only slightly toxic to mammals (rat LD<sub>50</sub> = 852 mg/kg). Exposure to mammals is expected to occur primarily through the accidental ingestion of baits during the normal process of feeding and/or grooming. However, there is the possibility that small scavengers could selectively ingest some baits due their potentially attractive (i.e., rancid) odor.

A rat LD<sub>50</sub> of 852 mg/kg was used to establish a mammalian classification trigger (1/5 LD<sub>50</sub>) of 116.4 mg/kg. The toxicological hazard posed by Amdro baits to four species of non-target mammals is shown in Table 1. These calculations indicate that nontarget mammals would have to ingest an exceptionally large number of Amdro baits in order to exceed their respective mammalian triggers. Considering Amdro's toxicity and the relative low incidence of bait availability (See Footnote #2) the probability of a mammal accidentally ingesting enough baits to trigger a restricted use classification is very remote.

#### Footnote #2

A 1.0 pound broadcast application should result in approximately 7 baits per square foot.

A 1.5 pound broadcast application should result in approximately 11 baits per square foot.

TABLE 1. Andro's Hazard to Four Species of Non-Target Mammals.

\*\*\*\*\*

Species	Body Weight (g)	MG/Animal \$\$	Number of Granules equal <sup>1/</sup>	
			1/5 LD50	LD50
Rat -++	200	170.4	2,793	13,967
Eastern Cottontail (Adult)	1100	937.2	15,363	76,819
Weaned Young 20 Days Old	85	72.42	1,186	5,934
Grey Squirrel (Adult-Female)	520	443.0	1,185	36,311
Weaned Young 10 Weeks Old	200	170.4	2,793	13,967
<sup>2/</sup> Delmarva Fox Squirrel (Adult-Female)	795	677.34	11,103	55,516
Weaned Young 8-10 Weeks Old	454	386.8	6,340	31,704

\*\*\*\*\*

FOOTNOTES++-Male Rat LD<sub>50</sub>=852 mg/kg (Emperical Data).<sup>1/</sup> Weight one (1) Andro bait = 1.4 mg (Dr. Don Linkfield 3/23/82).

©-Weight of toxicant/bait = 1.4 mg x 0.88% = 0.012 mg/Andro/bait.

\$\$-Example = Rat LD<sub>50</sub> x Animal Weight(kg) = 852 mg/kg x 0.085 kg = 72.42 mg/animal

$$\begin{aligned} \text{Number of Andro baits} \\ \text{required to equal LD}_{50} &= \frac{72.42 \text{ mg/animal}}{0.0122 \text{ mg/Andro/bait}} = 5,936 \text{ baits} \end{aligned}$$

<sup>2/</sup> Weight data obtained via telephone conversations with Gary Taylor (301-827-8612) and Dr. Vagan Flyger (454-4641) of the Delmarva Squirrel Recovery Team.

Classification procedures discussed above indicate that this pesticide could cause, under conditions of label use or widespread and commonly recognized practice of use, only minor or no discernible effects to non-target mammals.

In conclusion, registration of Amdro for use on 230 million acres of cropland will result in significant increase in exposure, but not in acute risks to non-target mammals.

#### 104.1.2 Avian Exposure

Amdro is practically non-toxic to waterfowl (Mallard LD<sub>50</sub> = >2510 mg/kg) and only slightly toxic to upland game birds (Bobwhite LD<sub>50</sub> = 1825 mg/kg). Amdro would be classified as a "General Use" insecticide under EPA's proposed granular classification guidelines (Avian LD<sub>50</sub> >50 mg/kg). Exposure to non-target birds is expected to occur via the intentional and/or accidental ingestion of baits during daily feeding activities.

The bobwhite LD<sub>50</sub> was used to calculate an avian classification (1/5 LD<sub>50</sub>) trigger of 365 mg/kg. The toxicological hazard posed by Amdro baits to eight species of birds known to utilize cropland is further delineated in Table 2. These calculations indicate that non-target birds would have to ingest an exceptionally large numbers of Amdro baits in order exceed their respective avian triggers (1/5 LD<sub>50</sub>). Considering Amdro's toxicity and relative low incidence of bait availability (See Footnote #2) the probability of a bird accidentally ingesting enough baits to trigger a restricted use classification is very unlikely. Classification procedures discussed above indicate that this pesticide would cause, under conditions of label use or widespread and commonly recognized practice of use, only minor or no discernible effects to non-target birds.

In conclusion, the registration of Amdro for use on 230 million acres of cropland will result in significant increase in exposure but not acute risks to non-target birds.



TABLE 2. Amdro's Acute Oral Hazard to Eight Species of Non-Target Birds.

\*\*\*\*\*

Species	Body Weight (g)	MG/Animal ( )§§	Number of Granules equal to <u>1/</u>	
			<u>1/5 LD50</u>	<u>LD50</u>
Mallard ®® (14-day)	200	502.0	8,229	41,147
Mallard (adult)	1200	3012	49,377	246,885
Bobwhite %% (14-day)	30	54.8	899	4,495
Bobwhite (adult)	170	310	5,094	25,472
Robin	80	146.2	2,396	11,983
Mourning Dove	100	182.8	2,996	14,983
House Sparrow	20	36.5	598	2,991
Redwing-Blackbird	50	91.4	1,498	7,491
Grasshopper Sparrow	13.9	25.4	416	2,081
Attwater's <sup>2/</sup> Prairie Chicken (adult)	1000	1828	29,967	149,836
(14-day)	50	91.4	1,498	7,491

\*\*\*\*\*

## FOOTNOTES

®® - Mallard LD<sub>50</sub> = 2510 mg/kg (Emperical Data)%% - Bobwhite LD<sub>50</sub> = 1828 mg/kg (Emperical Data)1/ Weight of one (1) Amdro bait = 1.4 mg (Dr. Don Linkfield 3/23/82).Weight of toxicant/bait = 1.4 mg X 0.88% = 0.122 mg/Amdro/bait. *Corrected on 4/11/89 by R.W.F.*§§-Example = Bobwhite LD<sub>50</sub> x Animal Weight (kg) = 1828/kg x 0.030 kg = 54.8 mg/animal
$$\text{Number of baits required to equal species LD}_{50} = \frac{54.8 \text{ mg/Animal}}{0.0122 \text{ mg/Amdro/Bait}} = 4,495 \text{ baits}$$
2/ Weight data supplied by Wayne Shifflet (713-234-3021) refugen manager of Attwater's Prairie Chicken Refuge, Aransas, Texas.

Aquatic Exposure

Amdro is very highly toxic to fish (channel catfish LD<sub>50</sub> = 0.09 ppm; rainbow LD<sub>50</sub> = 0.15 ppm) and moderately toxic to aquatic invertebrates (Daphnia magna LC<sub>50</sub>=1.14 ppm). The chronic effects of Aldicarb on freshwater fish are not known. The Registrant is currently conducting chronic invertebrate testing but the results of these studies are not available at this time.

A 96-hour catfish bioassay (LC<sub>50</sub>=0.09 ppm) was used to establish a warm water fish classification trigger (1/10 LC<sub>50</sub>) of 0.009 ppm. A 48-hour Daphnia magna bioassay was used to calculate an invertebrate classification trigger (1/10 LC<sub>50</sub>) of 0.14 ppm. Estimated aquatic concentrations (EAC's) were determined for a direct application to water since the proposed registration could include numerous crops grown in aquatic environments (i.e., rice, taro, etc.).

EAC's immediately after a single application of Amdro are outlined in Table 3.

TABLE 3. Estimated Worst Possible Case Residues Resulting From A Direct Application of Amdro Baits (ppm)

<u>Active/acre</u>	<u>WATER DEPTH</u>	
	<u>6"</u>	<u>12"</u>
.14 oz	.0064	.0032
.21 oz	.0096	.0048

Estimated aquatic contamination resulting from a direct application of 1.5 pounds Amdro could produce residues in the top 6 inches of water that just barely exceed the 0.009 ppm warmwater fish trigger. Residues resulting from the maximum rate of application do not, however, exceed the 0.014 ppm freshwater invertebrate trigger.

Hydrolysis data cited in earlier EEB reviews (Hopkin<sup>s</sup> 7/18/80; Rexrode 11/13/79) indicates that Amdro residues have a relatively short half-life (3-5 days) at biological pH's (7-9). Under these conditions, even worst possible case EAC's could be expected to dissipate rapidly.

No observable effects levels (NOEL) of 0.056 ppm for channel catfish and rainbow trout also indicate that worst possible case EAC's should have no effect on non-target fishes.

The above information suggests that residues of this insecticide will not produce discernible and adverse effects in non-target fishes. Therefore, it is the recommendation of this Branch that Amdro be classified as a general use insecticide.

In conclusion, the registration of Amdro for use on 230 million of cropland will result in significant increase in exposure but not acute risks to non-target fish and aquatic invertebrates.

104.2 Endangered Species Consideration

The conditional registration of Amdro on 230 million acres of cropland could result in the direct exposure of federally protected species. Endangered species most likely to be exposed to Amdro residues are those indigenous to the following states:

Texas	Mississippi
Louisiana	Alabama
Arkansas	Florida
South Carolina	North Carolina
Georgia	

Endangered species no effect triggers are shown in Table 4.

Table 4. No Effect Triggers For Federally Protected Mammals, Birds, Fish, And Invertebrates (footnote #3).

Species	LD50/LC50 LC50/LD10	No Effect Level <sup>@@@</sup>	Equilvent Baits
Bobwhite	1825 mg/kg	182.5 mg/kg	See text
Rat	852 mg/kg	85.2 mg/kg	See text
Channel catfish	0.09 ppm	0.0045 ppm	0.70 lbs of bait
<u>Daphnia</u> <u>magna</u>	1.14 ppm	0.057 ppm	7.6 lbs of bait

<sup>@@@</sup> Mammal and Avian No Effect Triggers = 1/10 LD50 or 1/5 LD10

Fish and Invertebrate No Effect Triggers = 1/20 LC50 or 1/10 LC10

Footnote #3

See Appendix I for LD10/LC10 calculations.

While federally protected birds and mammals could be exposed to Amdro residues no adverse effects are expected due to the large number of baits required to exceed endangered species no effect triggers (Table 4). For example, the number of Amdro baits required to exceed a no effect trigger for adult (1000 g.) and young (50 g.) Attwater's prairie chicken would be 5,705 and 285 baits, respectively. Amdro should pose even less of a hazard to endangered mammals since calculations indicate that between 3,170 and 5,552 baits would have to be ingested before even a relatively small mammal like the Delmarva fox squirrel could exceed its no effect trigger.

Worst case residue predictions outlined in Table 3 indicate that Amdro residue could adversely impact federal protected fishes. More specifically, 0.7 pounds of Amdro baits applied directly to six (6) inch layer of water could produce aquatic residues equal to the 0.0045 ppm level of concern.

As stated earlier (See Aquatic Exposure), NOEL's for two species of warmwater fishes have shown that Amdro residues in excess (approximately 12 times) of the endangered fish trigger failed to produce adverse effects.

These data inconjunction with Amdro's fairly rapid dissipation rate (3-5 day half-life) suggest that even if endangered fishes were exposed to worst case residues there would be no adverse impact.

In conclusion, conditional registration of Amdro on cropland will result in increased exposure but not acute risk to federally protected mammals, birds, fish, and invertebrates.

107.0 Conclusions.

107.5 Data Request

Chronic invertebrate study will be required to support conditional registration of Amdro on cropland (Hopkins, 7/18/80).

107.7 EEB's Findings'

EEB has completed an incremental risk assessment (3(c)(7) Finding) of the proposed Conditional Registration of Amdro for use on Cropland. Based upon the available data EEB concludes that the proposed uses provide for a significant increase in exposure, but not in acute risks to non-target organisms. EEB wants to emphasize, however, that it cannot comment on Amdro's potential chronic risks to aquatic organisms because pertinent data are lacking. In order to completely assess the risks associated with these uses, EEB requires the data requested in Section 107.5.

*Charles A. Bowen II* 4/7/82

Charles A. Bowen II  
Fisheries Biologist, Section No. 1  
Ecological Effects Branch  
Hazard Evaluation Division (TS-769)

Raymond Matheny *Raymond Matheny* 4/7/82

Raymond Matheny  
Head, Review Section No. 1  
Ecological Effects Branch  
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for Clayton Bushong, Chief *Raymond W. Matheny* 4/7/82  
Ecological Effects Branch  
Hazard Evaluation Division (TS-769)

**Section B2**

**Proposed Label**

**and**

**Specimen Labels**

# AMDRO<sup>®</sup>

fire ant insecticide



EPA Reg. No. 241-260

FOR USE IN CROPLAND

In addition to use in pasture and range grass, lawns, turf and non-agricultural lands, AMDRO fire ant insecticide may be used in cropland for the control of fire ants. DO NOT TREAT WITHIN 7 DAYS OF HARVEST.

Refer to the label on the container for specific directions regarding the rates, use direction and application of AMDRO fire ant insecticide.

OBSERVE ALL PRECAUTIONARY STATEMENTS ON THE LABEL BEFORE USING.

©Registered Trademark of American Cyanamid Company



# AMPRO

fire ant insecticide

**Active Ingredient:**

Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone(3-[4-(trifluoromethyl)phenyl]-1-(2-[4-(trifluoromethyl)phenyl]ethenyl)-2-propenylidene)hydrazone

0.88%

Inert Ingredients

99.12%

Total

100.00%

SPECIMEN

(1.0 lb. contains 0.14 oz. of active ingredient)

EPA Reg. No. 241-260



**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See Back Panel For Other Warnings

## PRECAUCION

**AL USUARIO:**

Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

**(TO THE USER:**

If you cannot read English, do not use this product until the label has been fully explained to you.)

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

AMERICAN CYANAMID COMPANY  
AGRICULTURAL DIVISION  
WAYNE, NEW JERSEY 07470

\*Trademark of American Cyanamid Company

Net Weight: 1 Lb.  
0.454 kg.

Product Code 24564-09

D-40

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
CAUTION  
HARMFUL IF SWALLOWED  
Wash Thoroughly After Handling**

**STATEMENT OF PRACTICAL TREATMENT**

If swallowed, drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply when weather conditions favor drift from target areas.

**STORAGE AND DISPOSAL DIRECTIONS**

- Prohibitions:** Do not contaminate water, food or feed by storage or disposal. AMDRO may be an attractant to rodents and domestic animals. Store in a secure place. Open dumping is prohibited. **STORE IN A COOL, DRY PLACE AND KEEP CONTAINER TIGHTLY CLOSED.**
- Pesticide Disposal:** Pesticides that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides, or buried in a safe place away from water supplies.
- Container Disposal:** Dispose of in an incinerator or approved landfill or bury in a safe place.
- General:** Consult Federal, state or local disposal authorities for approved alternative procedures, such as limited open burning.

**DISCLAIMER**

The label instructions for the use of this product, reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user. American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company make no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.

**DIRECTIONS FOR USE**

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

Observe all cautions and limitations on this label. AMDRO is formulated in an oil bait that functions as an attractant to imported fire ants. Prolonged exposure to air may turn oil rancid and reduce the attractiveness of the bait. Close container tightly after use. **USE WITHIN 3 DAYS AFTER OPENING.**

Apply when ants are active (typically when soil temperature is greater than 60°F) or consult your state agricultural experiment station or state agricultural extension service for proper timing of applications.

An effective fire ant insecticide must be slow acting so that it can be passed by the workers throughout the ant colony and eventually to the queen. AMDRO is a slow acting insecticide and is especially effective against the queen ant. Typically, in 2-4 weeks the queen and a number of ants are killed. Within 4-8 weeks a significant number of the ants die so that a visible reduction in mound activity is observed. Very large mounds may continue to be active for 4-6 months even though the queen is dead and no young are being produced.

Retreatment after 4 months may be desirable under these circumstances.

**BROADCAST APPLICATION**

AMDRO fire ant insecticide should be applied with an applicator properly calibrated to assure accurate placement and proper dosage.

Sites	Rate lb./A	Application
Pasture and Range Grass, Lawns, Turf and Nonagricultural lands	1.0 to 1.5 lb./A	Broadcast uniformly with ground equipment

**INDIVIDUAL MOUND TREATMENT**

Pasture and Range Grass, Lawns, Turf and Nonagricultural lands:

Use 5 level tablespoons of bait per mound. The product should be uniformly distributed 3 to 4 feet around the base of the mound. Do not apply more than 1.5 lbs of bait per acre. Do not contaminate kitchen utensils by use or storage.

MIRCK

*Daphnia magna*

0.18  
0.  
20.

0.32  
0.  
20.

0.56  
4.  
20.

1.  
7.  
20.

1.8  
15.  
20.

3.543 M  
4.753 YINT  
1.915 LW M  
1.687 CHI<sup>2</sup>

1.174 LD50  
0.930 LDCL  
1.483 UPCL

→ 0.510 LD10  
0.369 LDCL  
0.706 UPCL

2.702 LD90  
1.706 LDCL  
4.279 UPCL

*bobwhite LD50*

398.  
1.  
10.

631.  
2.  
10.

1000.  
4.  
10.

1590.  
4.  
10.

2518.  
6.  
10.

1.779 M  
-0.804 YINT  
3.649 LW M  
0.459 CHI<sup>2</sup>

1831.279 LD50  
983.222 LDCL  
3410.811 UPCL

→ 348.375 LD10  
124.651 LDCL  
973.638 UPCL

9626.362 LD90  
1674.954 LDCL  
55325.028 UPCL