



# Department of Pesticide Regulation



Paul Helliker  
Director

## MEMORANDUM

Arnold Schwarzenegger  
Governor

TO: Gary Sprock, Registration Specialist  
Pesticide Registration Branch **HSM-04006**

VIA: Joseph P. Frank, D.Sc., Senior Toxicologist *[original signed by C. Andrews for J. Frank]*  
Worker Health and Safety Branch  
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Worker Health and Safety Branch  
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DATE: May 19, 2004

SUBJECT: REVIEW OF BIRD SHIELD®'S USE ON WILD RICE, TRACKING NO.  
205016

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Under review for insignificant exposure is a proposed or otherwise mock-up label for the bird repellent product Bird Shield®'s use on wild rice (Tracking ID No. 205016). This mock-up label was received by the Pesticide Registration Branch on February 6, 2004. Bird Shield (U.S. EPA Reg. No. 66550-1) is a liquid concentrate distributed by Bird Shield Repellent Company (BSRC). The product contains 26.4% (by weight) of methyl anthranilate as the active ingredient (AI), and is currently available in net contents of one U.S. gallon.

This review concludes that the proposed labeling, as written for wild rice, is *inadequate* to ensure a use scenario *free* of significant exposure potential. Below are the recommended label restrictions that would resolve Worker Health and Safety Branch concerns regarding exposure to applicators, mixer/loaders, and the public. Also provided is the rationale for these proposed label restrictions.

### Application Method

1. This product shall only be applied by air.

### Application Rate/Frequency

- 2a. One (1) pint product/acre and no less than a 5-day reapplication interval; OR
- 2b. Two (2) quarts product/acre and no more than twice per growing season.

### Personal Protective Equipment (PPE) and Clothing Requirements

- 3a. Pesticide handlers (e.g., mixer/loaders, applicators) must wear coveralls over work clothing (i.e., over long-sleeved shirt, long pants), chemical-resistant footwear, protective eyewear, and chemical-resistant gloves for use of the product.
- 3b. Persons occupying an enclosed cockpit may substitute work clothing for labeling-



specified PPE (e.g., coveralls, gloves).

**Use Restrictions**

4. Mixer/loaders must handle no more than 50 gallons of the concentrate product per day.

**Restricted Entry Interval (REI)**

5. REI: 24 hours.

**Application Restriction**

6. No application shall be made within 30 days of harvest.

Below is the rationale for the label restrictions proposed above, starting with a brief account of the product's registration history in California as the basis for argument. In essence, a master label for Bird Shield was previously registered in California for blueberries, cherries, corn, table grapes, sunflowers, turf, non-fishbearing bodies of water, and structures (primarily bird nests). That master label was received and accepted by the Pesticide Registration Branch on December 5, 2001, after its earlier drafts had undergone the required reviews for insignificant exposure pertaining to the various uses involved (Dong, 1999a, 1999b, 2001). That master label has not been actively registered in California, however, since December 31, 2002.

That 2001 master label included sections on Agricultural Use Requirements, Non-Agricultural Use Requirements, and Use Restrictions, which according to the *Code of Federal Regulations* (40 CFR 170.103 and 40 CFR 170.203) are not required for vertebrate pest control products. This time for wild rice, as reflected in the mock-up label, the distributor BSRC opted to exclude these three sections and to give a shorter version of the precautionary statements. At this point as limited by the purview of this review, it is not clear if the mock-up labeling is considered adequate for a vertebrate pest control product, aside from the issue of insignificant exposure.

Insofar as occupational exposure is concerned, the now inactive master label specifies explicitly that *ground* mixer/loaders must wear coveralls over normal work clothes and must not prepare spray solutions with more than 50 gallons of the concentrate per day. For *aerial* mixer/loaders, the above clothing and usage restrictions were implicit, rather than explicit, due to the way the specifications were provided on the master label.

Yet as clearly explained in an earlier review (Dong, 1999a), it is necessary to restrict workers from handling more than 50 gallons of the concentrate per day, even for aerial application to wild rice for which the maximum label rate (0.28 lb AI/acre) is 4 or more times less than that for ground ( $\geq 1.15$  lb AI/acre).

The argument here is that in recent years there have been more than 8,000 acres of wild rice grown in California annually. Therefore, each day's aerial *operation* (vs. application) potentially can involve more than 400 acres of wild rice (since potentially more than one grower or one field in the vicinity could be served physically by the same aerial crew on the same day, not to say that in California some wild rice fields each could be more than 400 acres in size).

The proposed maximum label rate is 1 pint of product (or 0.28 lb AI) per acre of wild rice. Thus, unless there is a usage restriction in place, potentially more than 400 pints (i.e., 50 gallons) of product could be handled by an aerial mixer/loader crew on a given day. This point was made clear in a recent chronology review for Bird Shield (Dong, 2004). [Note that aerial applicators may substitute work clothing for labeling-specified PPE.]

Meantime, this review also has a concern with the potential dietary exposure involved, even though here its main task is presumably to consider occupational exposure only. Contrary to general belief, wild rice is not the type of regular or white rice that the public is familiar with. It is a different type of grass that grows a long stalk (up to 10 feet) and thrives in deep water. But more importantly, wild rice has been the native Americans' staple food for decades.

Although in California today, more than 99% of the wild rice is mechanically farmed and harvested using modern methods, this does not mean that *some* native Americans or certain culture groups are not potential consumers of the treated wild rice available in the open market. By staple food, it means that people would rely on it on a regular basis, if not every single day, much like consuming bread and potatoes in their meals. In short, even though it is unlikely that people would eat (treated-) cherries or grapes regularly, this might not be the case with wild rice.

The above argument of course does not mean that the dietary exposure involved is necessarily significant. It only means that some mechanism, process, or experimental data should be provided to ensure that the residues of methyl anthranilate in or on the treated wild rice in the market are below a level amounting to the natural occurrence level determined earlier (Dong, 1999a). In late 2002, the requirement of a residue tolerance was exempt for methyl anthranilate in or on *all* food commodities, *provided* that the use is in accordance with good agricultural practices (40 CFR 180.1143). However, it is not clear if the use on staple food, such as regular or wild rice, was duly addressed at the time the exemption was being considered. The issue should be addressed or *processed* through the assessment system. For example, if wild rice is no longer considered a staple food for any subpopulation in California, then let this fact be so addressed and documented, perhaps more appropriately elsewhere such as by staff of the Medical Toxicology Branch. They too should be in a better position to affirm that such a tolerance exemption always takes into account the use on all commodities consumed as staple food. However, in the absence of such an affirmation or some residue data, this review simply cannot make an insignificant exposure assumption for this part on dietary intake.

According to the proposed label, wild rice can be treated as many as 6 times before harvest, with a reapplication interval and a PHI each of 5 days. Again, as pointed out in the chronology review (Dong, 2004), the hulls to which the bird repellent is applied may not be mechanically removed completely to 100%. Contamination may occur during the removal or milling process. There is indication that now the majority of paddy wild rice grown in Northern California is shipped back to the Midwest. And wild rice is (still) a staple food to some, if not all of the Anishinaabeg people, a Native American tribe residing primarily in Minnesota.

Note that this review is concerned much more with dietary exposure for native Americans and other regular wild rice consumers, than with the part of occupational exposure from farming and harvesting the less than 1% of wild rice in California that may still rely on hand methods. For this very small percentage of farmers and harvesters, it is unlikely that their wild rice would be treated with the bird repellent, especially when the acres involved in each field are so few (to make aerial spray impractical) and when their cultural belief is known not to have their food intentionally treated with pesticides. Nonetheless, as a fair extra precaution, the label should include a REI of 24 hours for the reentry of non-harvester workers, such as those checking for treatment efficacy. [Note that although here much of the efficacy check can be performed by visual examination with very little dermal contact, residue fallout and drift of droplets from aerial sprays usually occur most frequently during the first 12 to 24 hours.]

#### References

- Dong MH, 1999a. *Review Document: Dislodgeable Foliar Residues (for Bird Shield® Repellent Concentrate)*. HSM-99024. Worker Health and Safety Branch, Cal/EPA Department of Pesticide Regulation, dated May 19.
- Dong MH, 1999b. *Assumptions for and Estimation of Human and Worker Exposures to Methyl Anthranilate (Bird Shield®)*. HSM-99025. Worker Health and Safety Branch, Cal/EPA Department of Pesticide Regulation, dated August 18.
- Dong MH, 2001. *Review of Label Amendment for Section 3 Registration of Bird Shield® Bird Repellent Used on Additional Crops*. HSM-01025. Worker Health and Safety Branch, Cal/EPA Department of Pesticide Regulation, dated November 20.
- Dong MH, 2004. *A Chronology of the Amendments Proposed for the Bird Shield® Label, TRACKING NO. 192565*. HSM-03013. Worker Health and Safety Branch, Cal/EPA Department of Pesticide Regulation, dated December 17.

Attachment: (mock-up label for wild rice)

66550-1

04/14/2003

1/3

~~Master Label~~

Proposed  
("mock up")  
Label

FRONT PANEL

**Bird Shield®**

For ~~Commercial, Agricultural and Home Use~~ *on wild Rice*  
~~On Berries, Pome and Stone Fruits, Cereal Grains, Sunflowers, Turf and Ornamentals, Structures, and~~  
~~Non-fish-bearing Bodies of Water~~

<b>Active ingredient</b>	<u>By Wt.</u>
Methyl anthranilate	26.4%
<b>Other ingredients</b>	<u>73.6%</u>
Total	100.0%

This product contains 2.29 lbs. of active ingredient per gallon.  
This concentrate has been formulated from food grade ingredients.

**KEEP OUT OF REACH OF CHILDREN**  
**WARNING**  
**SEE REAR PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS**

Bird Shield Repellent Corporation  
P.O. Box 785  
Pullman, Washington 99163-0785

EPA EST. No.  
EPA REG. No. 66550-1  
U.S. Pat. No. 5,296,226  
2.3.03

Net contents One U.S. Gallon (3.78 liters) 128 fl. oz.

For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Telecommunications Network at 1-800-858-7378.

**ACCEPTED**  
APR 14 2003  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 66550-1

RECEIVED

FEB 6 2004

BY PEST REGISTRATION  
D# 79014  
205016

# REAR AND SIDE PANELS

## PRECAUTIONARY STATEMENTS

### Hazards to Humans

*Harmful if absorbed through skin*

**WARNING:** Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

### FIRST AID

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing.

### ENVIRONMENTAL HAZARDS

Do not apply directly to fish-bearing bodies of water, to areas where surface water may contaminate streams or lakes or to intertidal areas below the mean high water mark.

## STORAGE AND DISPOSAL STORAGE AND DISPOSAL STORAGE AND DISPOSAL

**STORAGE:** Store only in original container apart from pesticides, fertilizers, food or feed that may cause cross-contamination from odor; and inaccessible to children. Avoid freezing or placing containers in direct sunlight. If frozen thaw and remix contents. Keep tightly closed when not in use.

**REPELLENT DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at a waste disposal facility by exposing to direct sunlight until all odor is gone or the product has dissipated or in accordance with Federal or State procedures.

**CONTAINER DISPOSAL:** Triple rinse. Offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

## DIRECTIONS FOR USE

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

This product is used to limit birds from feeding on ~~berries, pome and stone fruits, cereal grains and sunflowers.~~ *berries, pome and stone fruits, cereal grains and wild rice.* It discourages birds from using ~~turf and ornamentals, drinking and bathing in non-fish bearing bodies of water such as water impoundments and fountains.~~ It controls roosting in and on ~~structures.~~

**Preparation and Mixing Instructions.** Warm, in the sun or a water bath, to 75° F if the formulation has frozen or solidified. Mix liquid concentrated until ingredients are evenly distributed before adding to water. Do not add adjuvants, stickers, spreaders or surfactants to tank mix. This product may be mixed with EPA approved *Bacillus thuringensis*, insecticides, fungicides and herbicides

**Compatibility.** Incompatible with styrene and some plastic products, paints and finishes. If product is to be mixed with other pesticides, compatibility testing prior to mixing will avoid potential application problems. Test compatibility in a small container by combining all ingredients in the same ratio as the anticipated use. Apply a small amount to the area to be protected from the birds. If any indications of physical incompatibility develop, such as coagulation in the container or burning of the vegetation, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5 to 20 minutes after mixing and application.

**Application Instructions -**

~~Agricultural and hand sprayers. Mix one part of repellent concentrate with 99 parts of water (1% solution). Use 0.5 to 2.7 gallons of concentrate (1.15 to 6.18 lbs. a.i.) per acre depending on vegetation density.~~

~~Aerial application. Mix one part of repellent concentrate with 39 parts of water (1 pint per 5 gallons). Apply 5 gallons of tank mix/ac. (0.28 lbs. a.i.) unless a different rate is specified for crop type.~~

~~Timing. Begin applications when crop begins to ripen or birds begin feeding. Reapply every 5 to 8 days if birds reappear. Repeat as necessary to maintain repellency. Harvest 5 to 8 days after last treatment or after all odor and taste of the product has dissipated. Do not apply this product to wet surfaces.~~

**Application Rates**

~~Stone Fruit and Berries [such as cherry, apricot, peach, plum, blueberries, and table grapes]. Follow Agricultural Sprayer Application Instructions. [California Only. Mixer/handlers and air blast applicators must wear coveralls over normal work clothes and not prepare spray solutions using more than 50 gallons of concentrate per day. Harvesters must wear gloves and long sleeved shirts. Blueberries: Apply at a rate of 0.5 to 1.0 gallon (1.15 to 2.29 lbs. ai) per acre. Table grapes: Apply at a rate of 0.5 gallons (1.15 lbs. ai) per acre.][New York Only - Aerial application is prohibited. This product is not to be used on grapes within Suffolk County.]~~

*wild Rice*

~~Cereal Grains [rice (including white and wild), corn (including sweet corn & popcorn), millet, oats, and sorghum]. See aerial application instructions. Begin application 30 days before harvest when crop begins to ripen or birds begin feeding. -Rice seed treatment. Coat imbibed seed with a 25% solution of repellent concentrate. Do not soak seed in the repellent. Apply to flooded fields. Do not apply to bare soil. Keep water in fields until seed is fully germinated. Sweet Corn. Begin application 10 days before harvest when crop begins to ripen or birds begin feeding. Reapply at 5 day intervals until harvest. Harvest 5 days after last treatment.~~

~~Sunflowers. See aerial application instructions. Replant 22 days after application.~~

~~Pome Fruit [apples]. See agricultural sprayer instructions.~~

~~Non-fish bearing bodies of water, temporary pools associated with airports and decorative fountains. Add 1 to 2 parts of concentrate per 500 parts of water in the body of water [2-4 gal (4.58 - 9.16 lbs. ai.)/130 cubic feet (1000 gallons) of water]. Mix concentrate with water before adding to pool. Reapply at 3 to 4 week intervals if necessary to maintain repellency. [New York only - This product may only be used on non-fish-bearing bodies of water and temporary pools of standing water on paved areas or construction sites at or near airports.]~~

~~Turf. 1 to 2 gallons of concentrate (2.29 to 4.58 lbs. ai.) per acre (0.105 to 0.420 lbs. ai./1000 square feet). Reapply product at intervals of 7 to 14 days, or after each mowing, if necessary to maintain repellency. Postpone irrigation for at least one hour after application. Feeding geese on or near areas where birds are to be excluded may reduce the effectiveness of this product.~~

~~Ornamentals. Mix 1 gallon of concentrate (2.29 lbs. ai.) with 30 gallons of water and apply to foliage in the morning or late afternoon. Allow to dry before watering.~~

~~Structures. Mix 1 part concentrate with 1 part water and apply with hand sprayer. Swallows and woodpeckers: Apply to nests before eggs or young are present. Animal feed facilities (barns): Remove all animals and/or cover feed before application. Apply the repellent with a quiet power sprayer after the birds have roosted or nested after dark for three consecutive nights~~