

Ecological Risk Assessment for Pollinators

Richard Bireley

Senior Environmental Scientist

Department of Pesticide Regulation

2015 Cal Invasive Plant Council Seminar October 28,
2015

Topics

- Pesticide Label (Changes)
- Brief overview of ecotoxicology unit
- History of honey bee risk assessment
- New honey bee ecological risk assessment process
- Questions

Pesticide Label



BITHOR SC

For control of listed insect pests of turfgrass, landscape ornamentals, shrubs, and ornamental trees and structures in lawns, landscapes, playgrounds, parks and athletic fields.

| | |
|--------------------------|--------|
| Active Ingredient: | By Wt. |
| Imidacloprid | 5.0% |
| Bifenthrin* | 4.0% |
| Other Ingredients: | 91.0% |
| TOTAL: | 100.0% |

*Cis isomers 97% minimum, trans isomers 3% maximum
Contains 0.45 pounds of imidacloprid and 0.36 pounds of bifenthrin per gallon

EPA Reg. No. 83923-2 EPA Est. 81824-NC-001

STOP – Read the label before use

KEEP OUT OF REACH OF CHILDREN

CAUTION

(PRECAUCION AL USUARIO: Si usted no puede leer o entender ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.)

(TO THE USER: If you cannot read and understand English, do not use this product until the label has been fully explained to you.)

For product use information call 1-866-FOR-THOR (866-367-8467) or visit www.for-thor.com.

NET CONTENTS: Gallon(s)

Manufactured by:

ENSYSTEX IV, Inc.

2175 Village Drive, Fayetteville, NC 28304

FIRST AID

| | |
|--------------|---|
| If swallowed | <ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything to an unconscious person. |
|--------------|---|

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-(800)-369-4352 for emergency medical treatment information.

NOTE TO PHYSICIAN

Note To Physician: No specific antidote is available. Treat the patient symptomatically. This product contains a pyrethroid. If large amounts have been ingested, milk, cream and other digestible fats and oils may increase absorption and so should be avoided.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment: Applicators and other handlers must wear long-sleeved shirt, long pants, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is extremely toxic to fish and aquatic invertebrates. Run-off may be hazardous to aquatic organisms in water adjacent to treated areas.

This product contains a chemical with properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when heavy rain is not predicted for the next 24 hours will

help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies and drainage systems.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops, plants or weeds. Do not apply this product or allow it to drift to blooming crops, plants or weeds if bees are foraging in the treatment area.

PROTECTION OF POLLINATORS



APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators. Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When using this Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator active plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>. Pesticide incidents (for example, bee kills) should immediately be reported to the state / tribal lead agency. For contact information for your state, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at www.npic.orst.edu or directly to EPA at beekill@epa.gov.

DIRECTIONS FOR USE

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

See individual use sites for specific pollinator protection application restrictions. If none exist under the specific use site, for outdoor foliar applications, follow these application directions.



Do not apply BITHOR SC while bees are foraging. Do not apply BITHOR SC to plants that are flowering. Only apply after all flower petals have fallen off.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

RESTRICTIONS

- Do not allow people or pets on treated surfaces until the spray has dried.
- Do not water the treated areas to the point of run-off.
- Do not make applications during rain.
- Do not make applications directly into sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies or aquatic habitat can occur. Do not allow the product to enter any drain during or after application.
- Do not use household utensils to measure BITHOR SC.
- For broadcast applications, do not apply more than 4.5 pints (0.25 lb imidacloprid, 0.2 lb bifenthrin) per acre or 1.65 fluid ounces per 1000 square feet per application. Do not apply more than 9 pints (0.5 lb of imidacloprid active ingredient, 0.4 lb bifenthrin) per acre per year or 3.3 fluid ounces per 1000 square feet per year.
- For application to soil by injection or drench, do not exceed 0.4 lb of imidacloprid (7 pints of Bithor SC) per acre per year.
- Do not apply this product, by any application method, to linden, basswood or other *Tilia* species in the State of Oregon
- Do not harvest or consume fruit or nuts from any tree that has been treated within 1 year (365 days).
- BITHOR SC is not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.
- BITHOR SC is not for use in commercial greenhouses, nurseries, or on grasses grown for seed, golf courses, turfgrass grown for sale (sod farms) or on commercial fruit and nut trees.
- Do not apply to turf that is frozen, waterlogged or is saturated with water. Turf in this condition will not

Ecotoxicology Overview

- Staff - 3
- Data driven
- Studies conducted by contractors or registrants
- Assess hazards and risks to nontarget organisms
- No benefit analysis
- Mitigation* in assessments



Honey Bee Studies – Historical Data Requirements

- Acute Contact Toxicity
- Oral Toxicity (Not required but commonly submitted)
- Studies as necessary – case by case



Pollinator Risk Assessment

- Panelist on USDA/EPA honey bee workshop (2009)
- International SETAC Pellston (2011)
- 2nd USDA/EPA honey bee health conference (2012)
- Coauthor 3 Agency Pollinator Risk Assessment
- Addressed EPA Scientific Advisory Panel on Pollinator Risk Assessment
- Coauthor Interim Guidance Document Pollinator Risk Assessment



Protection Goals and Assessment Endpoints

- Establishing the relationship between measurement endpoints and assessment endpoints.

| Protection Goal | Assessment Endpoints | Measurement Endpoints (Population level and higher) | Measurement Endpoints (Individual Level) |
|--|---|--|---|
| 1. Provision of Pollination Services | Population size and stability of managed bees | Colony strength and survival | Individual worker survival Queen fecundity Brood size Worker bee longevity |
| 2. Production of Hive Products | Quantity and quality of hive products | Quantity and quality of hive products | Individual worker survival Queen fecundity Brood success |
| 3. Contribution to Pollinator Biodiversity | Species richness and abundance | Colony strength and survival Species richness and abundance | Individual worker survival Brood success |

New Pollinator Ecological Risk Assessment

- **3 Tiers** – (if potential for exposure)
 - 1st Tier
 - Acute contact toxicity test
 - Acute oral toxicity test
 - Larval Toxicity test – acute and chronic
 - 10 day adult chronic toxicity test
 - Estimated environmental concentration
 - Calculate Risk Quotients (RQ)
 - Compare to Level of Concern (LOC)



Higher Tiers

Tier 2

- Residue studies
- Tunnel/tent studies
- Feeding study



Tier 3

- Full field test
- Free to forage
 - no tunnels/tents



Differences in DPR Assessment

DPR

- DPR only calculates RQs for highest risk scenarios
- No benefits assessment
- Risk assessors also evaluate mitigation
- Make the call that the pesticide can be used safely without risks to nontarget organisms

EPA

- EPA calculates risks for all scenarios based on the proposed label
- EPA Risk Assessment passed from Environmental Fate and Effects Division (EFED) to Pesticide Registration Division (PRD)
- PRD adds mitigation language to label
- Another division does benefits analysis

Sulfoxaflor Review

DPR

- Reviewed using new guidelines
- RQs for highest risk uses
- Poor quality Tier 2 data
- No benefits analysis
- Not registered in CA

EPA

- Reviewed using new guidelines
- RQs for all uses
- Poor quality Tier 2 data
- Benefits analysis
- Registered
- Lawsuit - Lost on the science



FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

POLLINATOR STEWARDSHIP
COUNCIL; AMERICAN HONEY
PRODUCERS ASSOCIATION;
NATIONAL HONEY BEE ADVISORY
BOARD; AMERICAN BEEKEEPING
FEDERATION; THOMAS R. SMITH;
BRET L. ADEE; JEFFERY S.
ANDERSON,

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION
AGENCY; BOB PERCIASEPE, in his
official capacity as acting
administrator of the USEPA,

Respondents,

DOW AGROSCIENCES LLC,

Respondent-Intervenor.

No. 13-72346

OPINION

Questions?

