Understanding and Complying with Pollinator Protection Label Language

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This presentation was developed using authorities and information provided within Wis. Stat. ch. 94 and Wis. Admin. Code ch. ATCP 29.

Overview

- EPA Role
- EPA Registration Process
- Bees of Wisconsin
- Label Language
- Complying with label language

Disclaimer

- As always, the label is the law.
- Throughout this presentation I have picked out some of the common label language regarding pesticides and pollinators.
- As always it is the applicators responsibility to read and follow the specific label language on the product they are applying.

EPA Registration

- When EPA reviews a new pesticide application, it is a balancing act.
- They must weigh the risks of using the product against the benefit.
- There are four steps in the risk assessment process:
    1. Hazard identification
    2. Exposure assessment
    3. Dose/response assessment
    4. Risk analysis

    1. Is this product toxic to bees?
    2. Will bees be exposed to this product?
    3. How much product harms bees?
    4. Analyzing 1-3.

- Benefits assessment
    - Evaluate biological and economic factors

http://psep.cce.cornell.edu/issues/risk-benefit-fifra.aspx

EPA Process

- If a pesticide is used outdoors as a foliar application, and is toxic to pollinating insects, a “Bee Hazard” warning has generally been required to be included in the Environmental Hazards.

Office of Pesticide Programs Label Review Manual

Pollinator Protection Label Statements

- “Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging/visiting in the treatment area.”
- Old label language.
- Originally from a 1968 USDA policy.
  - Back when USDA registered pesticides.
- EPA is working on getting data through the Registration Review process to develop more specific and appropriate language.
  - This will be a long and slow process.

New Pollinator Protection Language

- Mostly on Neonicotinoids at the moment
- Added around 2013 in response to high profile bee kills and renewed public attention.
- Newly approved insecticide labels are likely to carry these statements.
- As older pesticides come up for registration review, it is likely this language will be added.

New Labeling for Neonicotinoid Pesticides

These documents, a graphical representation of the bee advisory box and two letters to pesticide registrants, describe steps we have taken to change pesticide labels so they better protect bees by being clearer and more precise in their directions for pesticide application. The revised labels include specific limits such as "Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen …."

You may need a PDF reader to view some of the files on this page. See EPA's About PDF page to learn more.

- The 2013 EPA Bee Advisory Box (PDF) (1 pg, 2 MB)
- August 15, 2013 Letter to Registrants on Pollinator Protection Labeling (PDF) (6 pp, 900 K)
- July 22, 2013 Letter to Registrants on Registered Pesticides containing imidacloprid, dinotefuran, clothianidin or thiamethoxam (PDF) (3 pp, 1 MB)

THE NEW EPA BEE ADVISORY BOX

On EPA's new and strengthened pesticide label to protect pollinators

PROTECTION OF POLLINATORS

APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT 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 attractive 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 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/tribe, go to: www.aapco.org. Pesticide incidents can also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at: beekill@epa.gov

Alerts users to separate restrictions on the label. These prohibit certain pesticide use when bees are present.

The new bee icon helps signal the pesticide's potential hazard to bees.

Makes clear that pesticide products can kill bees and pollinators.

Bees are often present and foraging when plants and trees flower. EPA's new label makes it clear that pesticides cannot be applied until all petals have fallen.

Warns users that direct contact and ingestion could harm pollinators. EPA is working with beekeepers, growers, pesticide companies, and others to advance pesticide management practices.

Highlights the importance of avoiding drift. Sometimes, wind can cause pesticides to drift to new areas and can cause bee kills.

The science says that there are many causes for a decline in pollinator health, including pesticide exposure. EPA's new label will help protect pollinators.

EPA

Read EPA's new and strengthened label requirements: http://go.usa.gov/jHH4

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FOR CROPS UNDER CONTRACTED POLLINATION SERVICES

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met:

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48 hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

FOR FOOD/FEED CROPS AND COMMERCIALLY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

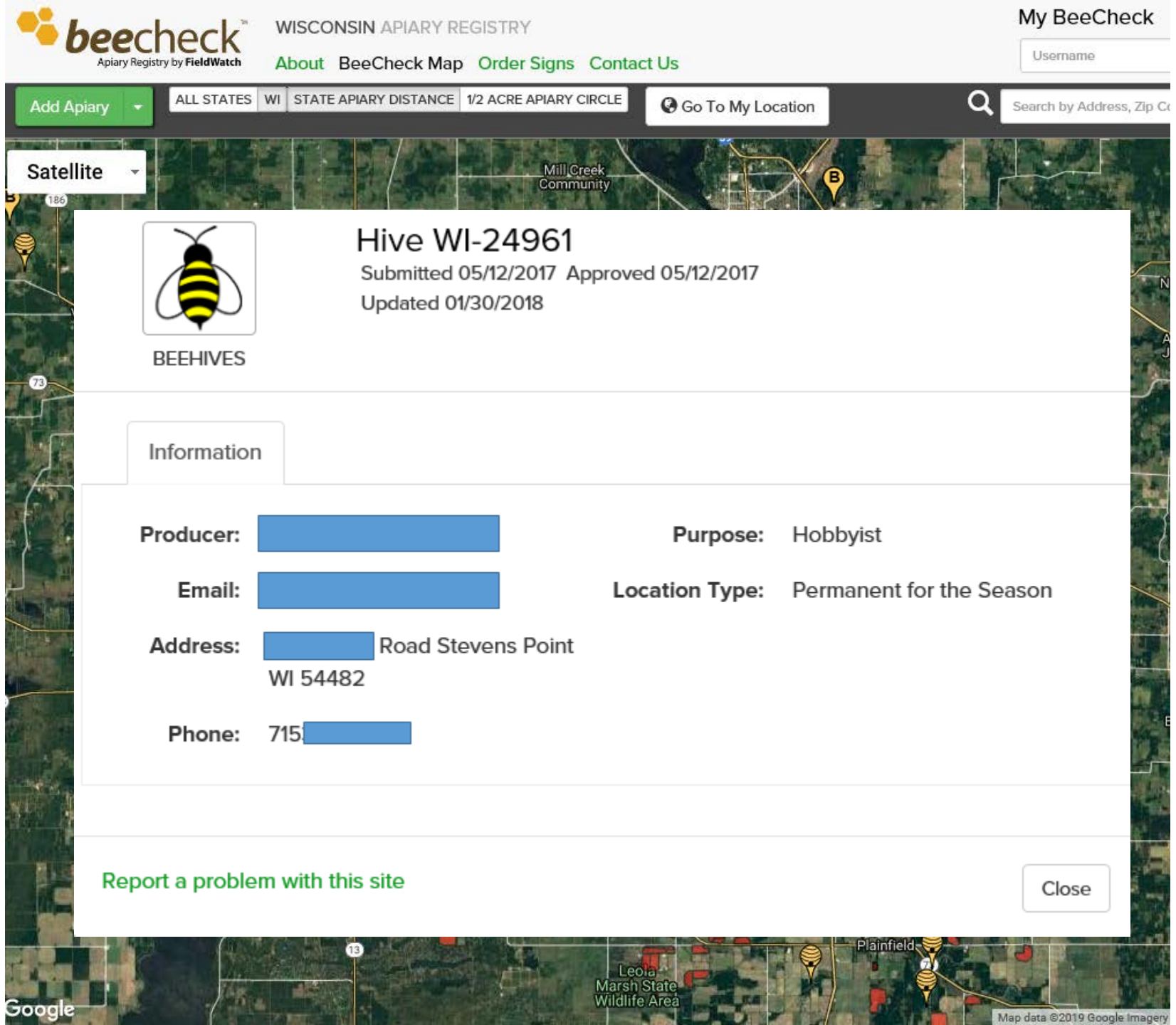
- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55˚F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered [illegible] notified no less than [illegible] of the planned [illegible] so that the bees can be removed, covered [illegible] protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48 hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

ADMIRE® PRO
SYSTEMIC PROTECTANT

Actara® 25 WG
syngenta

Minecto® Pro

DuPont™
Exirel®
insecticide



- https://wi.beecheck.org/map
- Good resource for knowing where hives are located
- Voluntary program
  - Does not contain every beehive in WI
- Not considered a “state-administered apiary registry program”

Not Just Honeybees

- Both the old and new language extend to all bees not just honeybees.
- “The honey bee is considered as a surrogate for other non-Apis bees even though many of these other insect pollinators are not social and have life histories which are substantially different from that of the honey bee.”- Pollinator Risk Assessment Framework Agency White Paper
- While all toxicity experiments are done on the sample species honey bees, the protections extend to all bee species, not just honey bees.
- While there are limitations to extending this information across other species, it is the most practical method available at this time.
  - Alternative is to test the toxicity of each pesticide on hundreds of different species which is not feasible.

Terminology

- For the purposes of this presentation when I talk about “bees” I mean all of the following:
  - honey bees
  - bumble bees
  - solitary bees
  - Any other bee species

Wait, what is a bee?

Bees, Wasps and Flies

BEES

- Two pairs of wings
- Relatively hairy
- Long antennae

FLIES

- One pair of wings
- Relatively hairless
- Large, bulging eyes that cover most of head
- Short, stubby antennae

WASPS

- Two pairs of wings
- Relatively hairless
- Long antennae
- Many have notably long, thin "waist"
- Many have bright yellow or orange coloration (stripes on legs, abdomen or thorax)

https://energy.wisc.edu/bee-guide/WI-Spring-Bee-Guide.pdf

Bees of Wisconsin

- Many people are familiar with honey bees and bumble bees but may not be aware of solitary bees.
- Approximately 400 species of bees found in Wisconsin.
  - Vast majority are solitary bees.
- Excellent guide found at: http://labs.russell.wisc.edu/insectid/files/2017/05/WI-BEE-IDENTIFICATION-GUIDE.pdf

Honey Bee (*Apis mellifera*)

Photo by Christy Stewart

Bumble bees (*Bombus sp.*)

Bombus auricomus
Photo by Christy Stewart

Small Carpenter bees (*Ceratina sp.*)

Photo by Christy Stewart

Mining bees (*Andrena sp.*)

Photo by Ilona Loser

Squash bee (*Peponapis pruinosa*)

Photo by Christy Stewart

Mason bees (*Osmia sp.*)

Photo by Ilona Loser

Complying with Pollinator Protection Label Language

So how do we comply with this language?

3 Parts

1. Do not apply this product
2. or allow it to drift to blooming crops or weeds
3. while bees are foraging/visiting in the treatment area.

Complying with Pollinator Protection Label Language

- Applications of insecticide to crops not in flower.
  - Then this language does not apply.
- What about crops that are flowering?
  - It depends.
- Certain crops like apples are highly attractive to bees.
  - For these crops, it is illegal to make an application of a product with this label language while the crop is in bloom during the normal daylight hours when bees are foraging.

Complying with Pollinator Protection Label Language

- Then we have the more complicated situation.
- Certain crops which are “attractive to bees under certain conditions”:
  - Potato
  - Carrot
  - Onion
  - Snap bean
  - Peas
  - Corn (pollen)
  - Soybean
- Applications to these flowering crops can be made as long as bees are not foraging at the time of application.

How do you know If bees are foraging?

- Must make some form of assessment.
- Cannot be:
  - “I did not make an assessment”
  - “ I didn’t see any bees from the cab when I was spraying.”

Minimum Assessment Criteria

- Boots on the ground assessment of at least one portion of the field that is in flower.
- Assessment ideally will be made same day as the application but if similar conditions exist the assessment will be good for a few days.
  - If conditions change, you will need to reassess the field for pollinators.
- Assessment will need to be made under “similar conditions” as the planned application.
  - Can’t assess during the rain and have it count the next day in sunshine.

Still a label violation to kill bees

- Even if you make an assessment and determine no bees are present, if the application results in a bee kill, it is still an alleged label violation.
- To avoid this, make the best assessment feasible to ensure that bees are not foraging at the time of application.
- A poor assessment does not indemnify you from an alleged label violation.

Label Language Examples

- Belay: This product is toxic to bees exposed to treatment **for more than 5 days following treatment**. Do not apply this product to blooming, pollen-shedding or nectar- producing parts of plants if bees may forage on the plants during this time period.

Clarity on Terms

- Visiting vs Foraging
- Blooming/Flowering
- Who can perform a pollinator assessment?
- How do you know which bees are attracted to which crop?
- Steps you can take to minimize impact to pollinators

Visiting vs Foraging

- Visiting is the older version.
- Newer labels should use the term foraging
- No matter which term is used, both mean bees are present.

Blooming/Flowering

- Distinct plant stage
- For most plants start when buds open, ends when petals fall
- More than one flower in the field = blooming

Who can perform a pollinator assessment

- Does not necessarily have to be the applicator.
- Just as a commercial applicator may rely upon an agronomist, a crop scout, or the farmer to determine the crop growth stage prior to applying, any of these individuals can make an assessment for pollinators.
- Ultimately compliance with all label restriction falls upon the applicator.

How do you know which bees are attracted to which crop?

- Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen (2017)

Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen (2017)

- USDA publication
- Compilation of information on the attractiveness of crops to pollinating bees as food sources of pollen and nectar.
- For each of the crops listed, the degree to which pollen and nectar are attractive and used by bees is listed using a scale
  - "-" = not attractive
  - "+" = attractive under certain conditions
  - "++" = high attractiveness in all cases.
- https://www.ars.usda.gov/ARSUserFiles/OPMP/Attractiveness%20of%20Agriculture%20Crops%20to%20Pollinating%20Bees%20Report-FINAL_Web%20Version_Jan%203_2018.pdf

USDA
United States Department of Agriculture

- Used by DATCP to determine which crops are highly attractive to bees.
- Can be used as a guide to inform what species are likely to be present in a flowering crop.

Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen

Attractiveness of agricultural crops to pollinating bees for the collection of pollen and nectar

Table 1. Summary of the attractiveness to Apis and non-Apis bees of crops grown in the U.S., whether crop requires bee pollination and if so, whether managed pollinators are used.

Crop	Description	Honeybee (Pollen)	Honeybee (Nectar)	Bumblebees	Solitary bees
alfalfa	*Medicago sativa*	+	++	+	++
bean	*Phaseolus* spp.	+	+	+	-
carrot	*Daucus carota*	+	+	+	+
corn	Zea mays	+	-	+	+
cranberry	*Vaccinium* spp.	+	+	++	++
onion	*Allium cepa*	+	+	-	+
peppermint	*Mentha* spp.	+	++	++	+
potato	*Solanum tuberosum*	-	-	+	-

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Steps you can take to minimize impact to pollinators

- Timing applications when pollinators are not active.
  - Applying after sunset or before sunrise
- Making applications prior to bloom.
  - Difficult with long flowering season crops such as potato.
- Use Integrated Pest Management (IPM) guidelines for your crop pest problems.

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Thelma Heidel-Baker, The Xerces Society

THE WISCONSIN POLLINATOR PROTECTION PLAN

&

BEST MANAGEMENT PRACTICES FOR

n.a

Maximizing Pollinator Health & Pollination Services on Farms

Questions?

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