

## **Pollinator Working Group Meeting**

**Date:** Thursday November 3, 2016

**Time:** 4:00 p.m. – 8:00 p.m.

**Location:** NRCS, Conference Room

60 Quaker Lane,

Warwick, RI 02886

### **DRAFT Meeting Minutes**

**Working Group Members in attendance:** Ken Ayars, Meg Kerr, Joel Tirrell, Shannon Brawley, David Brunetti, Lyn Spinella, Ken Payne, Gary Casabona, David Gregg, Lisa Tewksbury, Rafael Nightingale, Don Joslin, Robert Mann

**Guests:** Vanessa Venturini, Riley Titus, Barbara Chaves, Jane Halliday, James Wilkinson Jr., Mike Ventura, Julie Medeiros, Kevin Brewer, Nyssa Sky, Judie Sky, Brianna O'Connor, Frank Wong, Nancy Ostiguy, Steven Alm, Keith Salsbury, Howard Ginsburg, Terry Meyer, Jim Wilkinson, Paul Faria, Anthony Russo, Joseph Masino and Susan Gordon.

Ken Ayars, called the meeting to order at 4:09 PM.

Motion to approve minutes from 10/27/16

Motion made by Lyn Spinella. Second by David Gregg. All approved.

Powerpoint slides are available on the Working Group web site

<http://www.dem.ri.gov/programs/agriculture/pollinator-working-group.php>.

Minutes capture the important points but do not reflect the content of each slide.

### **Dr. Frank Wong, Pesticide Stewardship and Best Management Practices**

The pesticide industry appreciates the importance of pollinator stewardship but wants management decisions to be based on good science. Industry has concerns about recent legislative action (CT), arguing that the protection measures being implemented are not supported by the science.

Global honeybee populations are generally increasing. There was a dramatic decline in honeybees in Europe in the 1980s that has generated public concern. There is a problem with over wintering bees, although winter losses in the US are steady.

Bee health is complicated. Five major factor contribute to stresses and all likely work together to increase over wintering loss.

1. Habitat loss
2. Poor nutrition
3. Parasites and diseases. 60 – 70% of hives in US are affected with verroa mites and many are not managed.
4. Migratory stress from long-distance transport
5. Pesticide use

Q. Your presentation focuses on domesticated bees. Will you cover native pollinators?

A. There are 3700 species of bees. EPA focuses on honeybees, understanding that the strategies will benefit other bees.

Neonicotinoids are widely used and have beneficial characteristics. They have low impact on mammals and can be applied at low rates. Neonics are widely used in agriculture, and research has found low levels in stored pollen and wax. EPA's Imidacloprid pollinator assessment – the agricultural risk assessment was published in January 2016, the non-ag assessment is expected in December 2016.

Q. Have the cumulative impacts been evaluated?

A. EPA only looked at the acute impacts. It is difficult to show chronic long term effects.

Mitigation. Pesticides need to be applied according to label directions. Neonic insecticides have advisory pollinator language to reduce exposure.

Q. Residential use is a problem and labels are very difficult to understand. How is this being addressed?

A. Industry is interested in better/clearer labels. Much of the label content is required by EPA.

EPA has released a list of 76 pesticides to restrict during bloom. Managing for pollinators requires attention to all 76 of these pesticides.

Critical BMPs for pesticides:

1. Read and follow all label instructions
2. Do not spray insecticides directly on pollinators
3. Apply only to targeted plants or sites
4. Minimize spray drift and runoff.

Neonic BMPs for turf and lawn application

1. Do not apply when bees are foraging on lawn weeds
2. Mow off clover and flower weeds before applying
3. Water in applications

Neonic BMPs for Tree and Shrubs

Pollinator attractive Flowering

1. Do not apply pre-bloom through bloom
2. Wait until plants have completed flowering for foliar application
3. Non neonics on Linden, Basswood or other Tilia species
4. Systemic and soil application – follow labels

Wind-pollinated Flowering (grasses, conifers)

1. Minimum risk to pollinators

Neonic and Nursery Plants

1. Do not spray flowers in the last 2 – 3 weeks before shipping
2. Do not apply soil drenches in imidacloprid to hanging baskets any later than 5 weeks before shipping.

#### Resources

- NC Dept of Ag & Consumer services
- CURES ([www.curesworks.org](http://www.curesworks.org))
- State Managed Pollinator Protection Plans (MP3) – MD is a good example

Q. Are you looking at sub-lethal and synergistic effects of pesticides?

A. Industry has to pass regulatory hurdles to get pesticides approved. There is limited ability to look at long term exposures. Industry is working with EPA on synergistic impacts.

Q. How do treated seeds affect pollinators?

A. Treated seeds are a low risk to pollinators. However the seed dust can be problematic and Bayer is looking into this problem.

Q. The slide that showed bee colonies growing on various continents except Europe. Can you explain?

A. (Nancy Ostiguy) Data on colony loss is very poor. Beekeepers are reluctant to report because it makes them seem like poor beekeepers.

Q. We read about the impacts of neonics – many times due to incorrect application. How can this be addressed?

A. As you saw on the slide, homeowner use is a small part of the total volume of pesticide applied. We believe that the MD and CT laws that restrict use by non-licensed homeowners will have minimal impact.

#### **Dr. Nancy Ostiguy, Risks to Bees from Pesticide Exposure**

Pesticides include fungicides, herbicides, insecticides, etc. Each category is managed separately from the other. But if we examine how the chemicals act on the target species, we see a lot of overlaps between the categories of chemicals as well as unknowns and potential impacts on non-target species.

Chemicals are absorbed differently (eaten and absorbed through the stomach, contact and absorbed through the body wall, fumigants are eaten and absorbed in the tracheae) and distributed in the body differently (systemic, local). And there are different levels of exposure (acute, sub-acute, chronic) leading to different outcomes. For bees, we have no data on inhalation exposure and the assumptions around ingestion (that this is more toxic than contact exposure) is not correct. We also have very limited data on sub-acute and sub-chronic exposures.

Sub-lethal impacts on bees include:

- Impacts on reproduction (days to hatch)
- Impacts on mobility (trembling, uncoordinated, hyperactivity) (Note – we don't know how healthy bees behave so we have no baseline)

- Behavior (learning/memory, orientation)
- Nest development (imidacloprid has impacts)
- Food avoidance or preference (recent study showed that bees will prefer neonic treated plants)
- Recent study shows that buzz pollination is negatively impacted by imadacloprid

Potential for adverse outcomes, depends on

- Systemic/non-systemic pesticides
- Application method
- Chemical formulation

Considerations when thinking about risk of exposure -- Note: prophylactic treatments for American foulbrood resulted in creating resistant bee strains

- Dose and duration of exposure
- How fast the chemical decomposes – dependent on environmental factors like temperature, moisture
- Fat vs. water solubility
- Soil mobility

Conclusions – it is difficult to compare between studies (different units ug/bee, ug/kg, ug/L), different conditions, different species.

The risks from pesticide exposure varies by species.

Recommendations:

- Plant natives (feed insects, feed birds)
- Plant to habitat
- Don't spray
  - Restrict materials available to non-licensed users
  - Never spray during bloom
  - Avoid nesting materials (Osmia are reed nesters)
  - Protect larval food
- Spray less
  - Re-educate the public about insects
  - Recognize that if you like butterflies, you have to put up with some plant damage
  - Maximize soil health
  - Target spraying to eliminate only the most problematic herbivores
- Do not stack pesticides
  - Synergistic interactions do happen
  - We don't understand synergies
  - We are also concerned about sub-lethal impacts in offspring

Q. Domestic bees are overbred. Have we done genetic studies to ensure diversity?

A. We know that we are eliminating natural selection for queens. And we are working to promote genetic diversity.

Q. If neonics are causing the problem, why don't we see recovery when neonics are banned?

A. We don't use consistent language defining colony collapse – so we really don't have any data to review.

Q. Do researchers get together to synthesize their findings and recommendations?

A. Yes. There are regular bee research meetings.

Q. Do we have data on pesticide use in RI?

A. We do not have data on pesticide sales. Getting better data on pesticides in RI could be one of our recommendations.

Q. How do we minimize stacking of pesticides (multiple chemicals in the same tank)?

A. We know that the chemicals together are often more toxic than when applied alone. We ignore the fact that most colonies have been treated with mitocides – additional pesticides are interacting with these chemicals. It is important to recognize that bees bring the pesticides back to the hive. A recent study found higher concentrations in the honey in the spring before the bees were out foraging.

### **COMMENTS and DISCUSSION among the working group**

There is no easy way for beekeepers to test for pesticides. It is an expensive test.

RI has small farms, and agriculture does not overwhelm land uses like it does in other states. For pollinators, this is working to our advantage.

Bayer could provide us with data on how much of their products they sell in RI, divided into ag and non-ag users. This could show us how important residential use is/is not.

The group could recommend more careful targeting of pesticides. For example, the Forest Service has BT specific to gypsy moths. NE states could work together with the Forest Service to produce treatments for the region.

Common themes to the 2 talks:

- We recognize that habitat is important.
- Neonics are not always the worst alternative
- There are many diverse stresses on bees
- Education is key
- Selective use of pesticides – select the right tool for the right job
- Bloom periods are important – avoid spraying during bloom (Xerces has a table)

- Need to help people understand landscape planting requirements. Healthy plants don't need pesticides.
- URI web site has guide to native plants: <http://web.uri.edu/rinativeplants/>

Remember old URI programs that were directed at educating the public:

Green Share

Sustainable Plant List (CE Center)

Meeting adjourn: 7:31 PM