

Emergency Bee Response in South Carolina – Jennifer Tsuruda

- a. Problem
 - i. Aerial application of naled due to ZIKV
 - 1. Public notice Aug 26
 - 2. Tentative spray date Aug 27
 - 3. Actual spray Aug 29
 - ii. Sprayed between 6:45 and 7:50
 - iii. Sprayed according to label
 - iv. Bees are out at the crack of dawn
- b. Aftermath
 - i. DPR concluded investigation Sept 29
 - 1. Samples taken ~50 hours after application
 - 2. Problematic for testing as pesticide breaks down
 - 3. Lots of negative press by people outside the investigation
 - ii. Multiple agencies deal with bees
 - 1. Dept of Pesticide Regulation deals with bee kills
 - 2. Clemson deals with education and research
 - 3. Dept of Ag deals with honey houses
- c. It's complicated
- d. How to protect pollinators and people
 - i. Problems
 - 1. Need mandatory hive registry
 - 2. Migratory beekeepers are problematic
 - 3. *Aedes* spp vectors are active during the day, which changes spray times
 - 4. Most pesticides will kill bees
 - 5. Advanced notices can be problematic
 - 6. Pesticides break down quickly
 - 7. Climate can change bee behavior
 - ii. Solutions
 - 1. Practice IPM
 - 2. Understand thresholds – treatment should match level of threat
 - 3. Surveillance is key
 - 4. Limit exposure
 - 5. Have a plan
- e. Pesticides
 - i. Adulticide vs larvicide
 - 1. Dose
 - 2. Formulation
 - 3. Mode of action
 - ii. Note: pesticides can cause a direct kill (adult bees) and an indirect kill (bee larvae)
- f. What is needed

- i. Beekeepers
 - 1. More communication
 - 2. More education
 - 3. Advocate for mosquito control
- ii. Mosquito control
 - 1. Make contacts with beekeepers
 - 2. Communicate – go to beekeeper meetings
 - 3. Be aware of all pollinators