Yuma Success Story

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This is an account of how parties in Yuma, AZ solved a problem of drastic bee kills. It only addressed visible loss (acute effects) of adult bees, brood, and queens within a short time after pesticide application. It does not address possible sublethal effects.

Conditions that led to success:

1. All parties; beekeepers, farmers, pesticide applicators, Crop Consultants/Pest Control Advisors (PCAs), and Agrichemical Representatives (Reps) recognized the current practices of pesticide choice and application were causing severe bee losses.

2. All parties agreed to work together to search for possible solutions and that changes were needed.

3. Beekeepers acknowledged the necessity to control agricultural pests at all plant stages for the farmers to remain profitable.

4. All parties recognized that bees were essential to the local agricultural community and that they needed protection from pesticide damage ALL year long (not only during the pollination period).

5. Beekeepers accepted the fact that bees would rarely experience a zero effect from a pesticide application when crops were in bloom. Beekeepers determined that an "acceptable effect" was a few dead bees found outside the hive and no queen or brood loss.

Actions that led to success:

1. Beekeepers informed the other parties that bees were at all times within flight distance to any pesticide application but were not always foraging in each field or crop. They also provided information about bee behavior and visitation habits to particular crops.

2. Farmers and PCAs informed beekeepers about pests they needed to control at critical plant growth stages.

3. Parties determined the best pesticide(s) for the target pest. The pesticides with the shortest residual toxicity periods were considered first.

4. The starting time for an application was based of temperature and bee visitation habits. The ending time for the application was based on the residual toxicity of the chosen pesticide. The goal was to attain pest control by applying a pesticide at a time which would allow the toxicity to lessen before the bees reentered a crop or field. Ground and aerial applicators agreed that night applications were often necessary to avoid pesticide damage to the bees when crops were in bloom and when colony placement was extremely close to the field edge.

Results:

1. There were times when adequate pest control was not achieved or bee kills were unacceptable. It was known that many pyrethroid insecticides had repellent properties and could be tank mixed with a chosen pesticide. This technique led to much success when a pesticide with high bee toxicity and/or longer residual toxicity characteristics was needed to control difficult pests. Repellency periods were determined for different pesticides, dosages and, weather conditions. The bees could not be foraging in the field when the repellent tank mix was applied (direct contact to the foraging bee caused unacceptable results to the bees). **Caution:** the use of pyrethroid insecticides as a honey bee repellent should be considered only under arid conditions, common to the Western U.S.

2. Bee losses drastically reduced as the cooperation continued over time.

3. Farmers paid an acceptable cost by not choosing a chemical only by cost and using tank mixes which included a repellant in difficult situations. Beekeepers accepted the principle of acceptable loss and paid for loss of bees in the discovery process. (The discovery process still goes on today as new chemicals become commercially available.).

5. The applicator's willingness to apply bee-toxic pesticides at night was the most essential element to the success of the process.

6. Relationships were formed that established a foundation which calmed emotions when pesticide damage to bees occurred and to begin the process of discovery again.

The "You can't." and "We have a right!" statements were replaced with "Let's try this!" and "We can make this work!".