Understanding Pepper Weevil Infestation in Santa Clara and San Benito Counties

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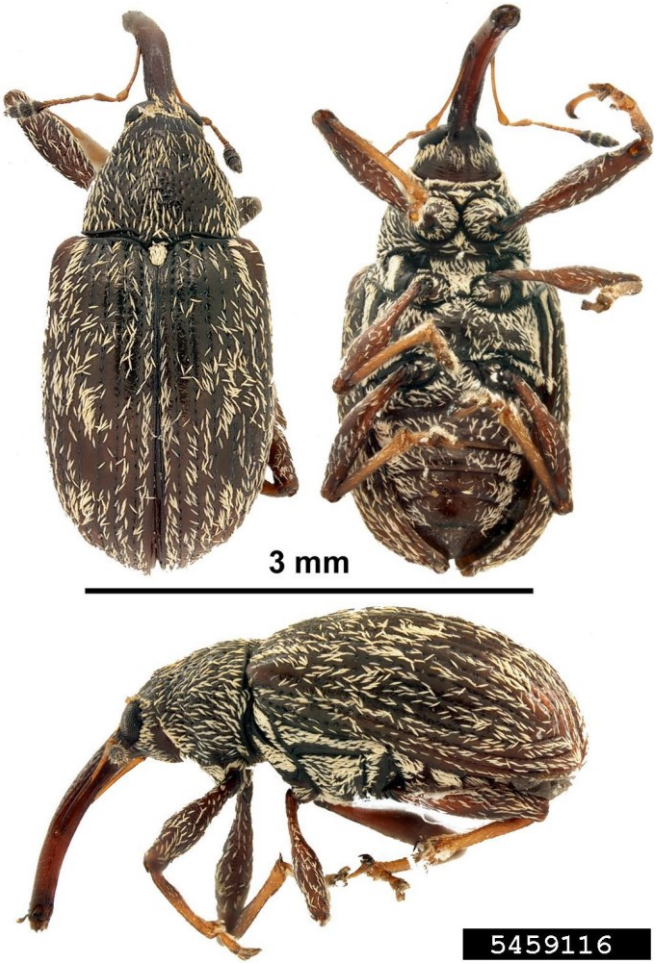
Pepper Weevil Infestation Background

- Pepper weevils are a serious threat to pepper production and can cause significant economic losses.
- This pest has been active in S. California for several years.
- In Santa Clara, pepper weevil was detected in three fields in 2015.
- The weevil infestation was observed late in the season (October) and it was heavy and led to fruit drop.

Pepper Weevil Biology

- Adults are about 3/16” long
- Adults fly readily
- The weevils overwinter only where food is available – common in S. California, Florida, and Texas
- Host plants: peppers and nightshades



Patrick Marquez, USDA APHIS PPQ

Weevil Damage

- Adult weevils feed on fruit and terminal buds.
- Larvae feed inside the pods and cause young fruit to drop prematurely, reducing yields.

Larval Feeding Damage

Joseph Ingerson-Mahar, Rutgers Cooperative Extension

Adults remain in the fruit until either they chew a hole to escape or the pepper rots


Joseph Ingerson-Mahar, Rutgers Cooperative Extension

Pest Monitoring

- Weevils are usually distributed in groups.
- Adult population estimates are best obtained by visual examination of terminal buds and using pheromone-baited yellow sticky traps.
- One 58 sq inch trap captures as many weevils as are detected by inspecting 50 buds.
- Research shows that one trapped weevil in a pheromone trap correlates with ~8% infested fruit (Bottenberg and Lingren).

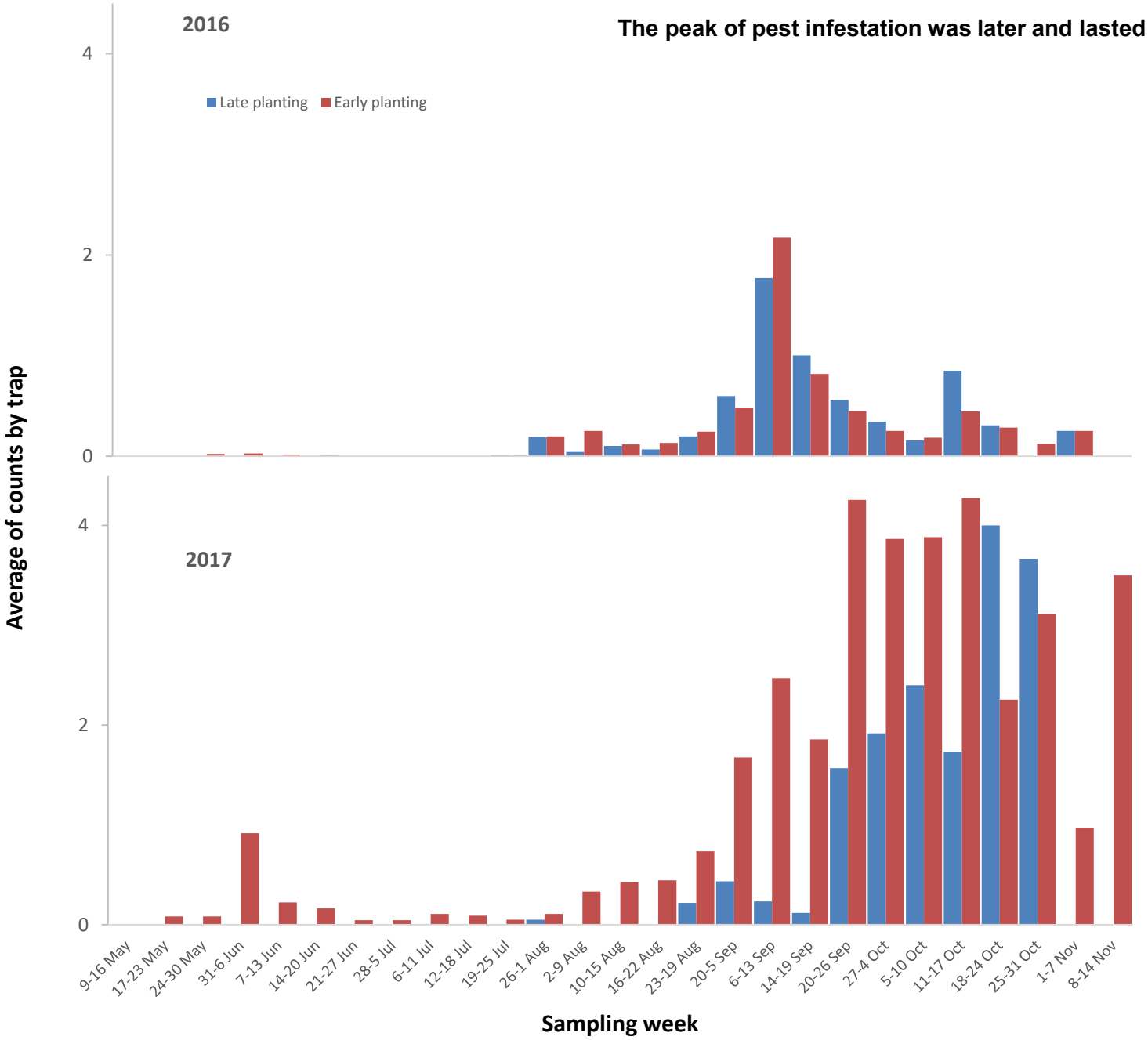
Pest Monitoring

- Funds from California Pepper Commission grants.
- Collaboration with Crop Production Services.
- Sixty fields were monitored from May to November in 2016 & 2017 in Santa Clara and San Benito counties.
- Six pheromone-baited yellow sticky traps were installed on the perimeter of each field to detect weevil migration into the field.
- The height of the traps was adjusted with plant growth.
- The traps were collected and replaced weekly.
- The traps were inspected for adult pepper weevils.
- Fruits were randomly inspected for pepper weevil infestation.

What did we find?

- In 2016 55/63 fields were infested and in 2017 50/60 fields were infested.
- The infestation was more severe in 2017.
- In total, 1,106 and 3,100 adult weevils were captured in 2016 and 2017, respectively.
- In both 2016 and 2017 planting date did not have a significant effect on the level of weevil infestation in fields.
- In 2017 immature fruit drops were observed in several fields at the end of the season.
- Several dropped fruits had weevil at various stages – larve, pupae, and adults.

The peak of pest infestation was later and lasted longer in 2017.



Thank You