

**Situation:**

CA leads the US in production of melons and melons are ranked 30th in CA agricultural export with a value of ~\$45 million. The fruit, especially for export, must be unblemished. Cucumber beetles are major pests of cucurbit plants; adults readily feed on all plant parts and larvae feed on the melon surface as it contacts the soil. To mitigate this damage, growers frequently treat repeatedly with carbamate and pyrethroid insecticides. Previous detailed research on cucumber beetles in CA was conducted in the 1940's. We started a research program in 2007 on the 2 beetle species and have examined several aspects of biology and management as well as examining the reasons for the upswing in pest severity. However, questions remain and we propose to continue and expand this research.

**Priorities:**

- 1) establish a treatment threshold for fruit damage and a beetle monitoring plan
- 2) investigate host plant resistance (comparison of cultivars) and biological control (a fly parasite of the adult) measures,
- 3) study the biology of the 2 species [overwintering sites, alternative hosts, movement patterns] to design alternative cultural management methods.

**Assumptions:**

1. Stakeholders see the need for and the value of new IPM approaches for CB
2. Stakeholders believe that IPM will address their issues of CB
3. Stakeholders have time & resources to employ IPM
4. Efficacious alternatives to high risk insecticides will be developed

**External Factors**

1. Market demands dictate quality
2. Consumer driven issues limit the adoption of IPM

**Evaluation**

**What do You Want to Know?**

Short term (within 1<sup>st</sup> year):

1. Was your CB knowledge improve?
2. Is the information useful & relevant?
3. Do you intend to use what you learned?
4. Was quality affected?

Intermediate (1-3 years)

5. Did you fulfill these intentions?
6. Was there a change in insecticide use pattern?

Long Term (measurements after 3 yr period)

7. Was the risk to human health and environmental quality reduced?

**How Will You Know It?**

1. Interactive audience response system (ARS) survey @ time of presentations
2. Interactive ARS survey @ time of workshop
3. Interactive ARS survey @ time of workshop
4. Packinghouse records, consumer complaints
5. Follow-up survey, 6-9 months post workshop
6. PCA, grower & CDPR Pesticide Use Reporting, contrast to before and after.
7. Regional water board, air boards and public health data, contrast before and after project

**Life History and Refined Management of Cucumber Beetles in Central California Melons**

