MONTEREY COUNTY PEST DETECTION UPDATE

Salinas Pest Management Seminar November 14, 2024

Presented by:
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Deputy Agricultural Commissioner

AGRICULTURAL COMMISSIONER PROGRAMS

- Pest Prevention
  - Pest Exclusion
  - Pest Detection
  - Pest Eradication
- Pest Management
- Pesticide Use Enforcement
- Fruits, Nuts & Vegetable Standardization
- Crop Statistics
- Seed Certification
- Nursery Inspection
- Egg Inspection
- Apiary Inspection
- Weights & Measures

PEST DETECTION PROGRAM

A. The primary responsibilities of the Pest Detection Program
   - Early detection and prompt eradication of serious agricultural pests from California.
   - Operate statewide detection trapping program, special detection surveys, and the maintenance of emergency projects response teams.

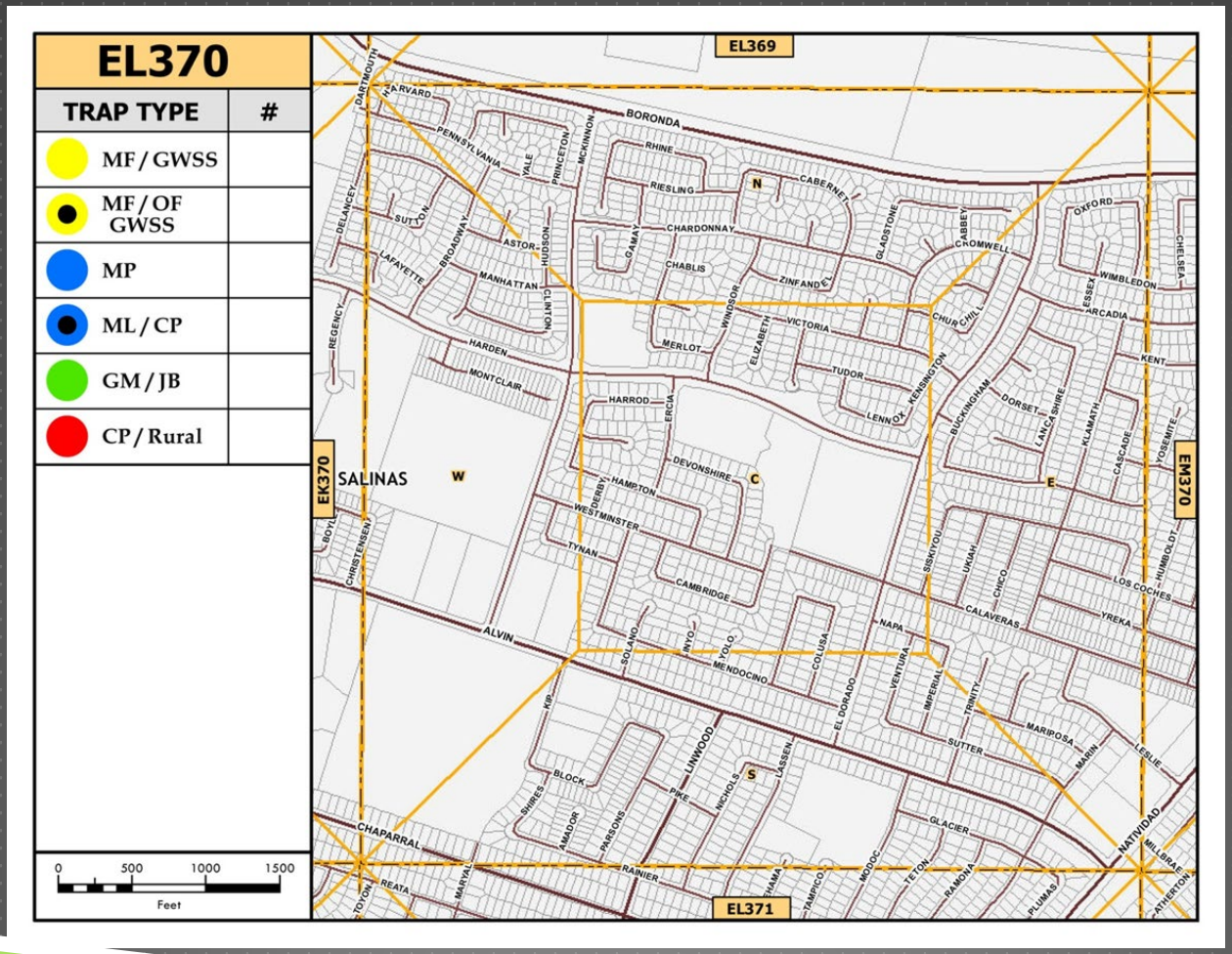
B. Primary objective of the statewide pest detection program is to find insect pests before they infest one square mile.

C. Statewide trapping program is set up on a grid system.

PESTS OF CONCERN IN CALIFORNIA

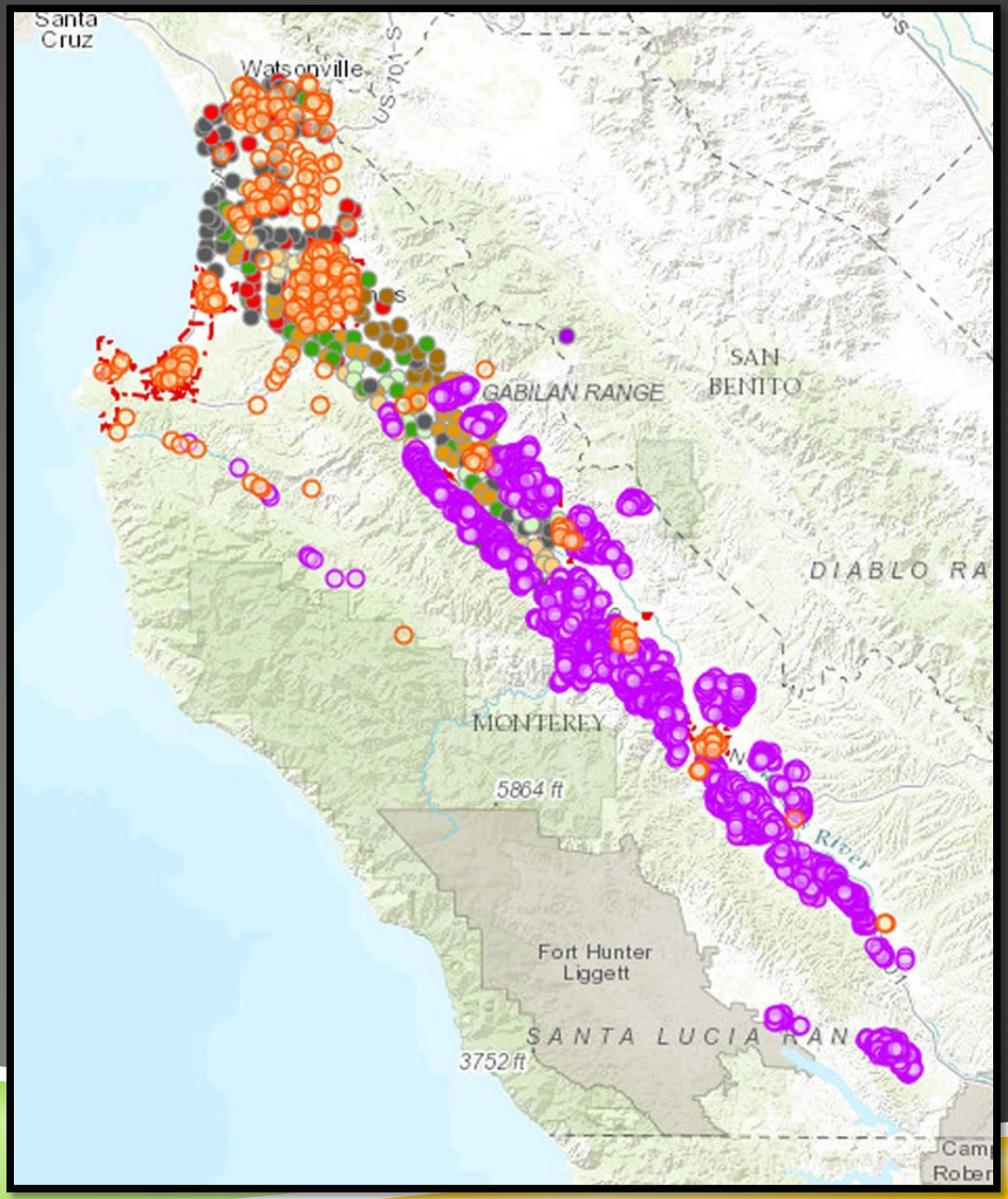
1. Exotic Fruit Flies
   - Mediterranean Fruit Fly
   - Oriental Fruit Fly
   - Melon Fruit Fly
   - Mexican and Caribbean Fruit Fly
2. Japanese Beetle
3. Gypsy Moth
4. Asian Citrus Psyllid
5. European Grapevine Moth
6. Glassy-Winged Sharpshooter

STATEWIDE TRAPPING SYSTEM

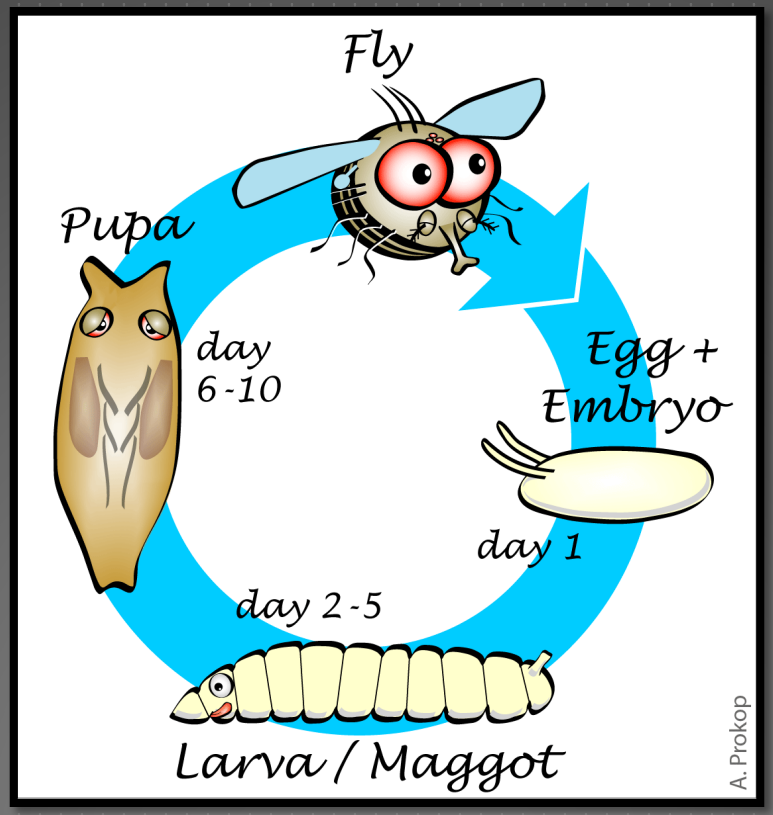


Detection Trap Distribution

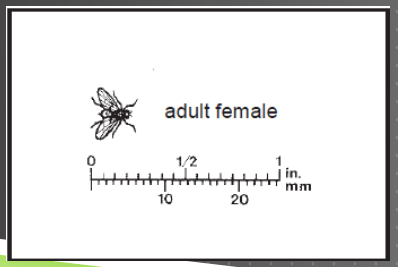
- Purple(EGVM)
- Orange (ACP)
- Green (FF)
- Gray (ML/CP)
- Red (JB/SM)



THE FRUIT FLIES



MEDITERRANEAN FRUIT FLY
(CERATITIS CAPITATA)



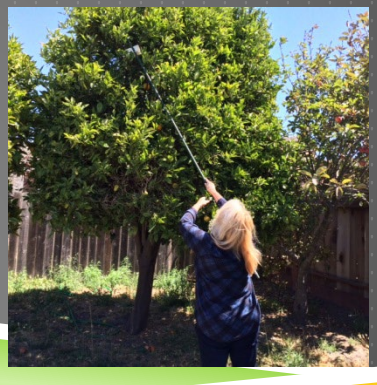
MEDFLY FACTS

- The Mediterranean fruit fly is one of the world's most destructive fruit pests. The species originated in tropical Africa and is not known to be established in the continental United States.
- Ranked first among economically important fruit fly species because…
  - Wide distribution over the world
  - Ability to tolerate cooler climates better than most other species of tropical fruit flies
  - Wide range of hosts
- Under optimumal conditions, Medfly can complete its life cycle within 21 days. At temperature below 50°F fly development ceases.
- Attacks more than 260 different fruits, flowers, vegetables, and nuts. Thin-skinned, ripe succulent fruits are preferred.

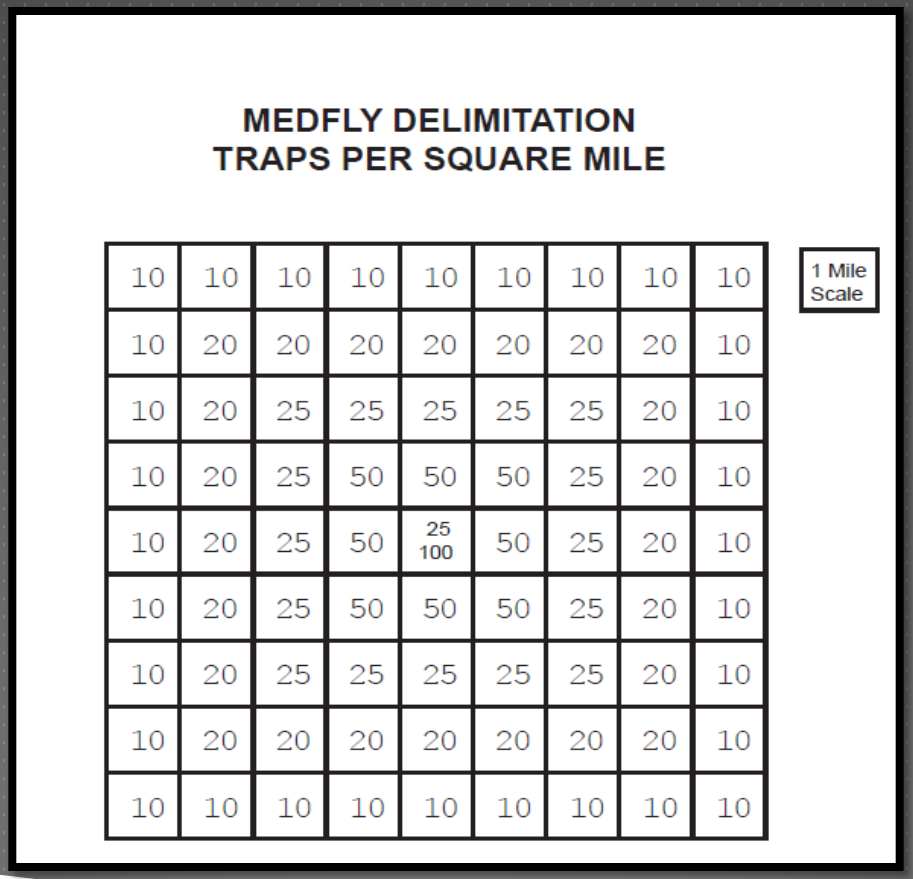
MEDFLY TRAPPING

- **Trapping Density**:
  5 traps / square mile
- **Trapping Season**:
  May 1 thru October 31
- **Trap Type**:
  Jackson Trap
- **Attractant:** Trimedlure
  Male attractant

- **Relocation Schedule:**
  Every 6 weeks



DELIMITATION EXAMPLE

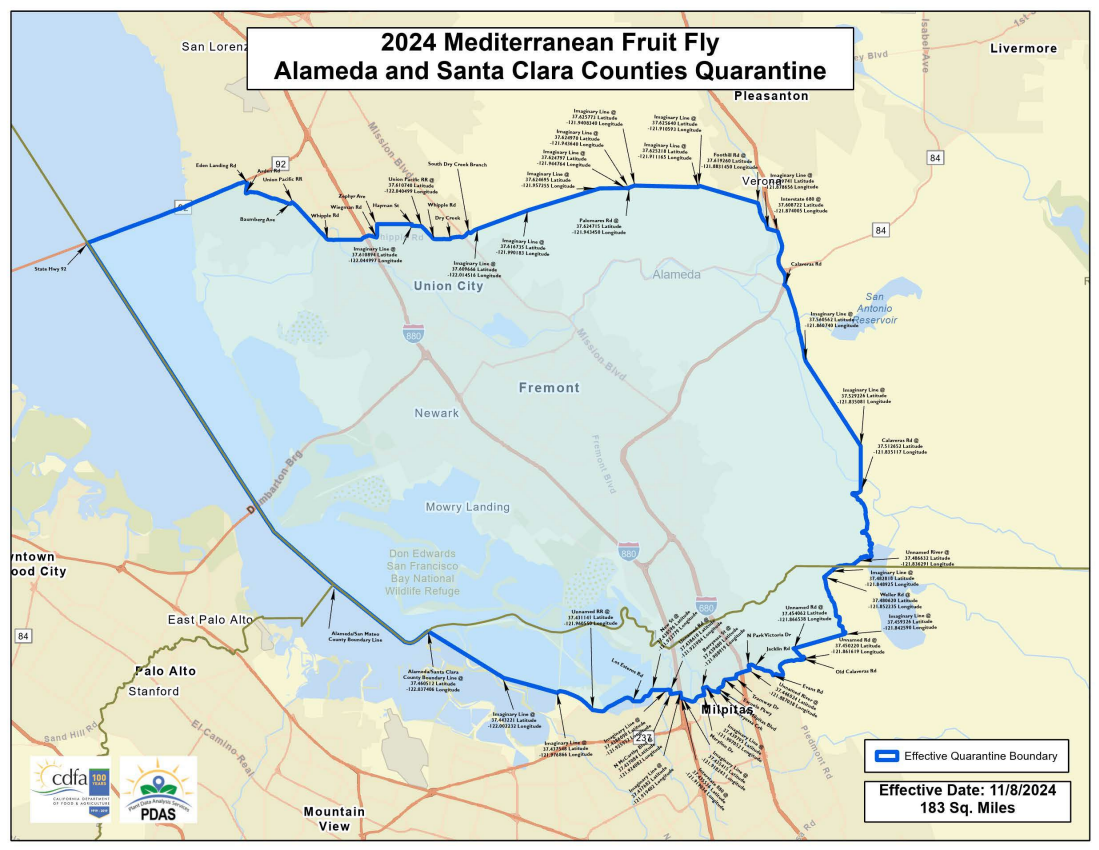


MEDFLY DELIMITATION
TRAPS PER SQUARE MILE

10	10	10	10	10	10	10	10	10
10	20	20	20	20	20	20	20	10
10	20	25	25	25	25	25	20	10
10	20	25	50	50	50	25	20	10
10	20	25	50	25 100	50	25	20	10
10	20	25	50	50	50	25	20	10
10	20	25	25	25	25	25	20	10
10	20	20	20	20	20	20	20	10
10	10	10	10	10	10	10	10	10

1 Mile Scale

MEDFLY QUARANTINE

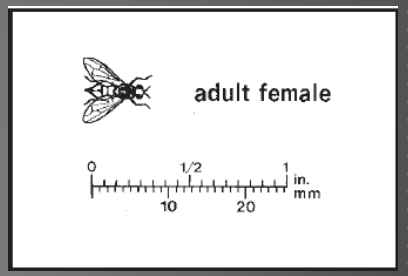


MEDFLY PREVENTIVE RELEASE PROGRAM

- Located in Los Alamitos, California, it is a joint program of USDA and CDFA.

- Prevent establishment of Medfly by utilizing a scientific process known as sterile insect technique.
- Medfly in the pupae life stage from CDFA production lab located in Hawaii and a USDA lab located in Guatemala. Breeding is done in these labs to eliminate the risk of fertile flies escaping.
- The cost to fund the program is around 16 million dollars annually. This cost is minimal when compared to the costs of eradication and quarantines imposed upon growers and industry.
- The program releases sterile Medflies at the weekly rate of 62,500 to 125,000 flies per square mile.
- No pesticides are used, making the program environmentally-friendly.

ORIENTAL FRUIT FLY (BACTROCERA DORSALIS)



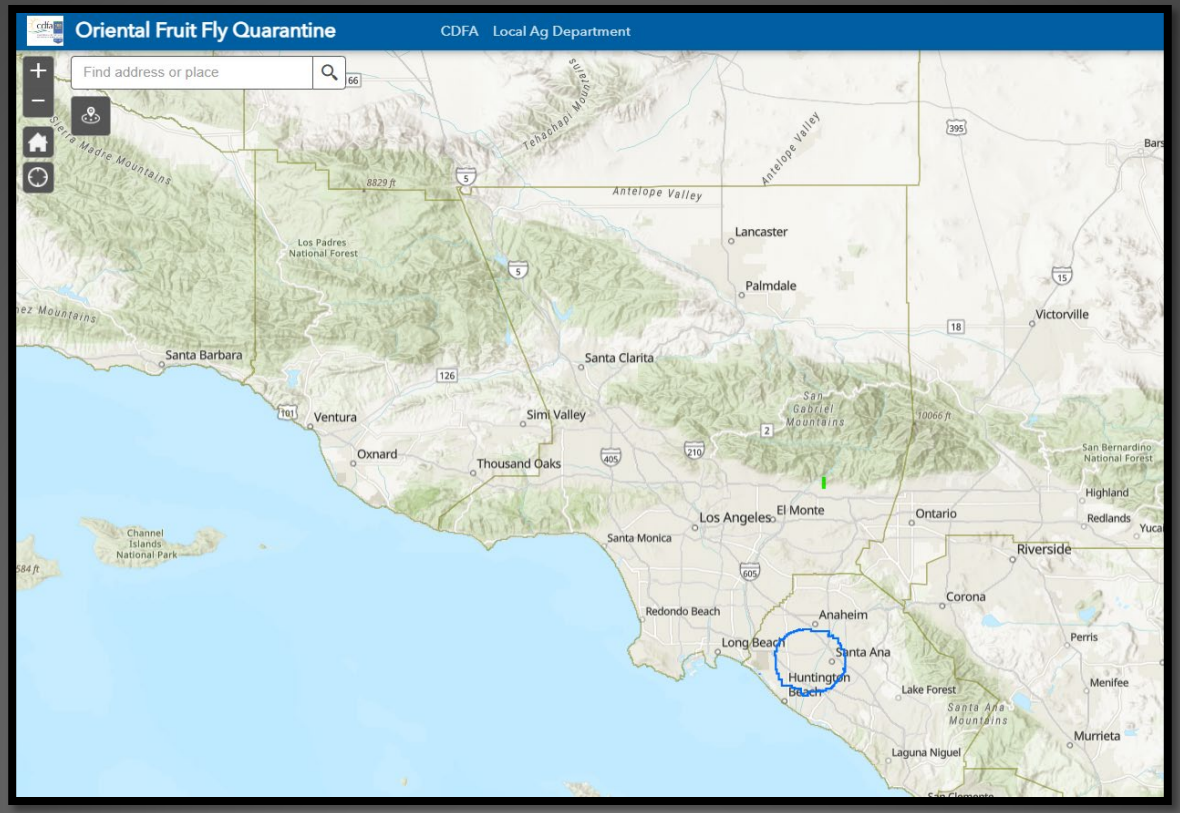
ORIENTAL FRUIT FLY FACTS

- Originated in tropical Asia and was introduced into Hawaii in the 1940's.
- Development from egg to adult requires about 16 days.
- A female can lay more than 3,000 eggs during her lifetime and up to 10 generations/year in temperatures above 50 F.
- Prefers more than 150 different types of fruit and vegetables

ORIENTAL FRUIT FLY TRAPPING

- **Trapping Density**:
  5 traps / square mile
- **Trapping Season**:
  May 1 thru October 31
- **Trap Type**:
  Jackson Trap
- **Attractant**:
  Methyl Eugenol with 1% Dibrom
- **Relocation Schedule:**
  Every 6 weeks

ORIENTAL FRUIT FLY QUARANTINE



ORIENTAL FRUIT FLY QUARANTINE

ORIENTAL FRUIT FLY PROJECT

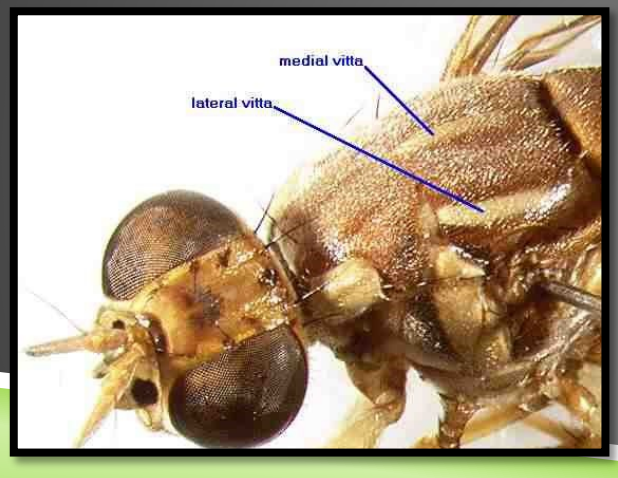
Fruit Fly Eradication Treatment

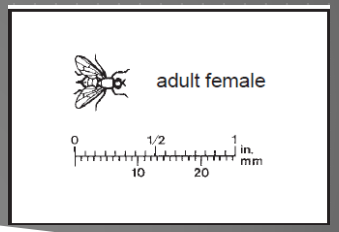
- The eradication treatment, known as the male attractant technique (MAT), is conducted in an area defined by a 1.5 mile radius from each fly find site, for a minimum of 9 square miles. Approximately 600 small gel-like "bait stations" per square mile are applied to the sides of individual utility poles and street trees on public right-of-ways.

- These bait stations contain a powerful male attractant (methyl eugenol) that is mixed with a small amount of insecticide. The bait station will attract and kill male fruit flies before they can breed. In the absence of males, the females go unmated and no offspring are produced, effectively causing the extinction of the pest population.

- The attractant is very specific for this group of flies, so much so that other insects such as bees or butterflies will not be harmed because they are not attracted to the lure.

MELON FRUIT FLY (BACTROCERA CUCURBITAE)





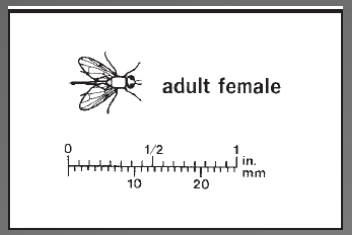
MELON FRUIT FLY FACTS

- The melon fly is native to Asia
- Worldwide, over 80 different kinds of fruits and vegetables are recorded as hosts. The most commonly attacked crops are cantaloupe, cucumber, watermelon, melons, squash, and gourds. It also is attracted to Cauliflower, peppers, eggplant and tomatoes.
- The melon fly was first found in California in 1956 and has been captured sporadically over the years, but all infestations have been successfully eradicated.
- Breeding is continuous, with several generations possible annually. Completion of the life cycle normally requires one to two months under warm conditions, but may be five to six months under cooler conditions.

MELON FLY TRAPPING

- **Trapping Density**:
  2 traps / square mile – Garden Sites
- **Trapping Season**:
  May 1 thru October 31
- **Trap Type**:
  Jackson Trap
- **Attractant**:
  Cue-lure with 5% Dibrom
- **Relocation Schedule:**
  1 time/season

MEXICAN FRUIT FLY (ANASTREPHA LUDENS)



MEXICAN FRUIT FLY TRAPPING

- **Trapping Density**:
  3 traps / square mile
- **Trapping Season**:
  May 1 thru October 31
- **Trap Type**:
  McPhail Trap (Water trap)
- **Attractant**:
  Torula Yeast and Borax Pellets
- **Relocation Schedule:**
  Every 6 weeks

OTHER TARGET FRUIT FLIES

TAU FRUIT FLY

2023 Tau Fruit Fly finds

- 110 adults detected in LA County
- Detrimental to cucurbits, avocados, citrus, tomatoes and peppers
- Delimitation programs successfully eradicated it.

COMMON NON-TARGET FRUIT FLIES

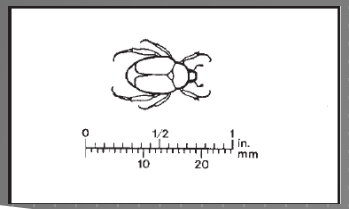
Olive Fruit Fly

Walnut Husk Fly

Apple Maggot

THE OTHER GUYS

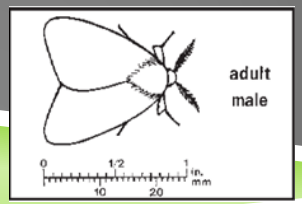
JAPANESE BEETLE (POPILLIA JAPONICA)



JAPANESE BEETLE TRAPPING

- **Trapping Density**:
  2 traps / square mile
  - Approximately 12,000 traps placed and monitored statewide
- **Trapping Season**:
  June 1 – August 31
- **Trap Type**:
  Japanese Beetle
- **Attractant**: Wafer (Phenethyl propionate, Eugenol) and Japonilure.
- **Relocation Schedule:**
  No relocation needed

SPONGY MOTH (LYMANTRIA DISPAR)



SPONGY MOTH TRAPPING

- **Trapping Density**:
  2 traps / square mile
- **Trapping Season**:
  June 1 – August 31
- **Trap Type**:
  Gypsy Moth Delta Trap
- **Attractant**: Disparlure
  A synthetic sex pheromone
- **Relocation Schedule:**
  No relocation needed

SPONGY MOTH INSPECTIONS

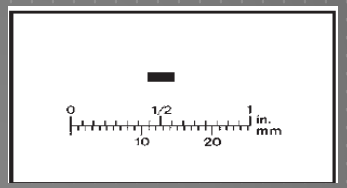
Gypsy moth: Hitchhiking to a community near you?

Looking for egg masses is the easiest way to detect a new gypsy moth infestation. Inspectors may be in your area in the fall months.

Gypsy moth egg masses (left) are frequently found on trees as well as vehicles, outdoor equipment and other items that can be transported out of the slowly expanding infested zone in the northeastern U.S. (red area on map) or southeastern Canada.

ASIAN CITRUS PSYLLID (DIAPHORINA CITRI)

The Asian citrus psyllid (ACP) is a pest that acts as a carrier or vector spreading "huanglongbing" (HLB), a devastating disease of citrus trees. This bacterial disease is transmitted to healthy trees by the psyllid after it feeds on infected plant tissue.



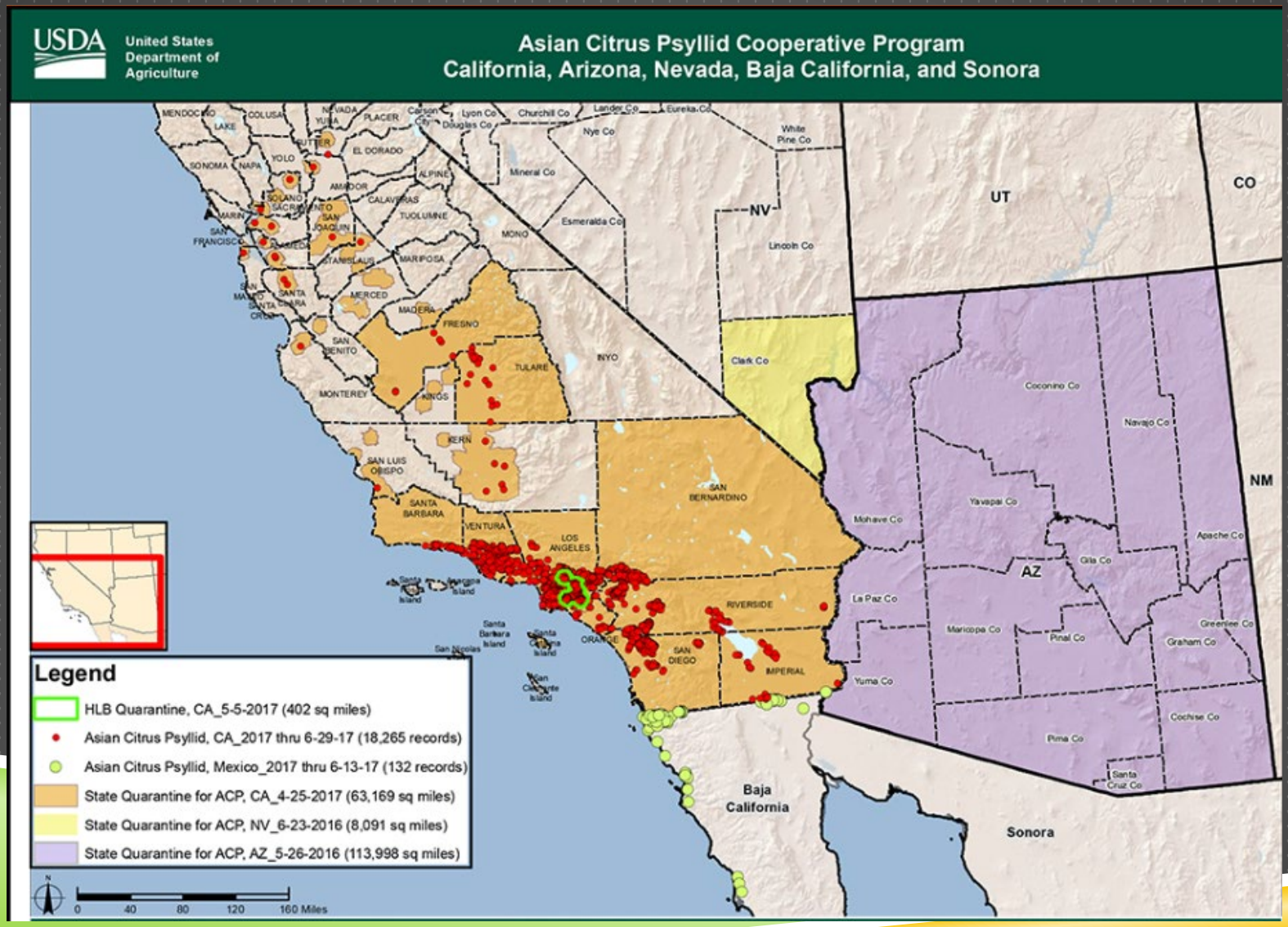
ACP DETECTION AND HLB

- Adult Asian citrus psyllids are small, brown pests that feed on citrus leaves with their body at a 45-degree angle.
- The Asian citrus psyllid feeds on citrus leaves and stems (especially new growth), and can infect citrus trees with a bacteria that causes a serious plant disease called Huanglongbing, also known as HLB or citrus greening disease.
- The best way to protect citrus trees from HLB is to stop the Asian citrus psyllid.
- Once a tree is infected with HLB, it will die. Diseased trees need to be removed in order to protect other citrus trees on the property, neighbors' trees and the community's citrus.

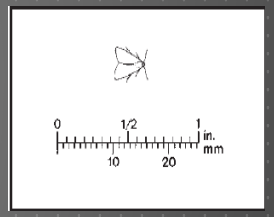
ASIAN CITRUS PSYLLID TRAPPING

- **Trapping Density**:
  5 traps / square mile – Citrus only
- **Trapping Season**:
  Year –round
- **Trap Type**:
  Yellow Panel Trap
- **Attractant**:
  Yellow color
- **Relocation Schedule:**
  Every 2 months

ASIAN CITRUS PSYLLID



EUROPEAN GRAPEVINE MOTH
(LOBESIA BOTRANA)



EUROPEAN GRAPEVINE MOTH

- **Trapping Density**:
  25 traps / square mile – Vineyards
- **Trapping Season**:
  February 1 – October 31
- **Trap Type**:
  Red Delta Trap with ends open
- **Attractant**:
  Synthetic sex pheromone

* In 2016 USDA & CDFA announced complete eradication of EGVM in California.

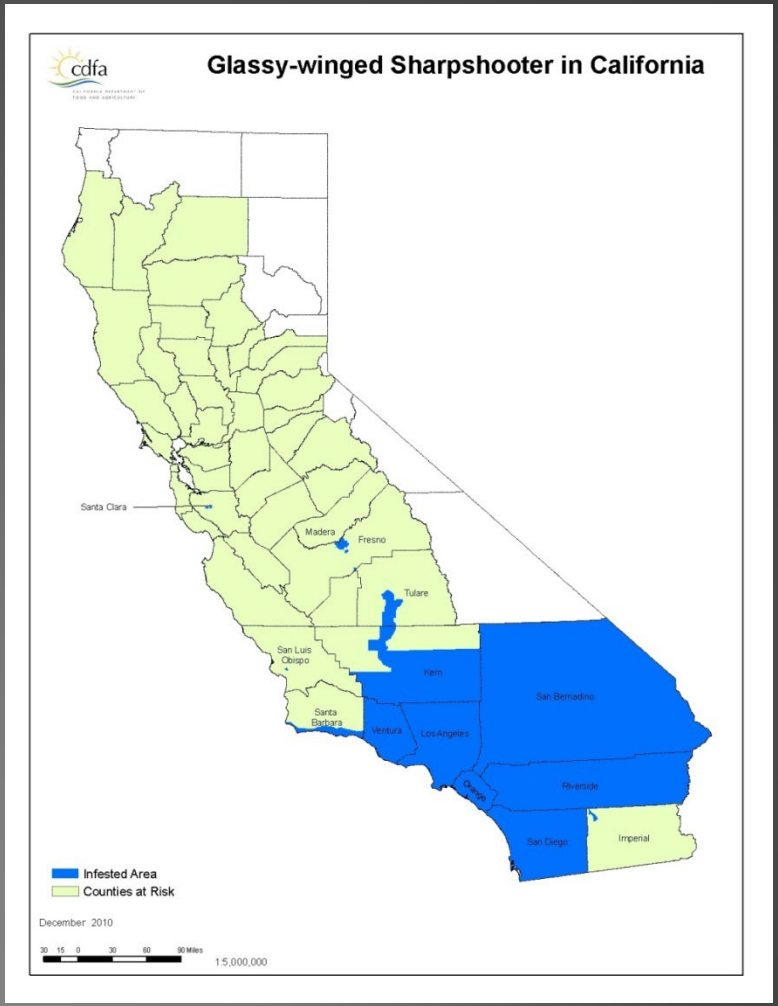
GLASSY-WINGED SHARPSHOOTER

(*HOMALODISCA VITRIPENNIS*)

GLASSY-WINGED SHARPSHOOTER

Nursery Shipping Protocol from infested area to non-infested areas:

1. GWSS-free premise
2. Master Permit
3. ATP (Approved treatment program)
4. Destination Inspection Process
   - Verification of paperwork
   - Live adult/nymph or viable egg mass reject and return to origin or destroy at destination.
   - Notify GWSS program and origin CAC



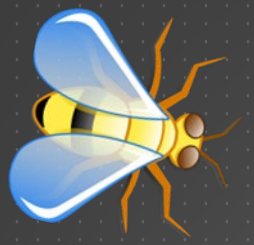
GWSS TRAPPING / NURSERY INSPECTION

- A. Trapping:
  Nurseries – 368 Traps
  Urban areas – 260 Traps
- B. Incoming nursery shipment inspections – **1,387 inspections**

- All nursery shipments from GWSS infested counties require 24 hour notice, and the plants must be held for inspection once arriving at the nursery .

IN CONCLUSION

1. Exotic Fruit Flies
   - Mediterranean Fruit Fly
   - Oriental Fruit Fly
   - Melon Fruit Fly
   - Mexican and Caribbean Fruit Fly
2. Japanese Beetle
3. Spongy Moth
4. Asian Citrus Psyllid
5. European Grapevine Moth
6. Glassy-Winged Sharpshooter



THANK YOU

Are there any questions?