



Invasive Fruit Fly Quarantine Guide for Growers

Overview

California is experiencing an unusually high number of invasive fruit fly detections this season. The California Department of Food and Agriculture (CDFA), in cooperation with the United States Department of Agriculture (USDA) and the County Agricultural Commissioners (CAC), has initiated regulatory measures throughout California to eradicate and prevent the spread of Queensland, tau, Mediterranean, and Oriental fruit flies.

Invasive fruit flies are extraordinarily damaging pests that pose an imminent threat to fruits and vegetables grown in California. They can damage more than 300 agricultural commodities that are produced in California, both commercially and in home gardens. These crops include citrus, grapes, figs, tomatoes, avocados, cucurbits, persimmons, walnuts, stone fruits, and pome crops to name a few.

Once an invasive fruit fly is detected, CDFA implements a comprehensive response program, which requires action from many stakeholders, including area growers. This document is designed to outline the activities growers are responsible for administering on their properties, and the activities that will be led by CDFA and its partners.

Quarantine Information

Trigger

A quarantine is triggered by the number of adult flies captured — within three miles of each other, and in one life cycle:

- Mediterranean, Melon, and Caribbean fruit fly – 2
- Mexican fruit fly – 5
- Oriental, Guava, and Peach fruit fly – 6 rural or 8 urban
- All other adult invasive fruit flies (e.g., Queensland and tau fruit fly) – 2

OR

- A single detection of larva, mated female, or pupa, indicating a breeding population.

Quarantine Boundary

Quarantine boundaries are established at least 4.5 miles from a fruit fly detection site. Once a quarantine is in place, there are three main areas of the quarantine to consider:

- The quarantine has three areas:
 - Detection site is the location where a fruit fly (adult, larva, pupa) is collected. This can be in a trap or collected from the property.
 - Core area is established using a 0.5-mile radius around each detection site.
 - General quarantine area within the 4.5-mile radius and outside of the 0.5-mile core area.
- The quarantine may be rescinded if no additional fruit flies are detected for three consecutive fruit fly life cycles. Lifecycle duration is determined based on temperature and the biology of the fly species.
- Information for all active invasive fruit fly quarantines:
<https://www.cdfa.ca.gov/plant/pe/InteriorExclusion/quarantine.html>

Grower Responsibilities

Each invasive fruit fly feeds on a unique set of fruits and vegetables. Growers should familiarize themselves with the applicable [host list](#), including any exemptions. If within a quarantine area, growers of host commodities must contact CDFA to obtain a compliance agreement that outlines quarantine rules and requirements.

Table 1 below outlines quarantine restrictions and options for growers according to their property’s location within or near a fruit fly quarantine area. The options listed may only be completed under a signed compliance agreement with CDFA. Growers must contact CDFA prior to taking any action below, including harvesting host commodities, to ensure compliance and to prevent spreading invasive fruit flies.

Table 1 – Quarantine Options for Growers

Grove Status/Location	Quarantine Options	Not Eligible
Fruit Fly Detected on Site	<ul style="list-style-type: none"> Process or juice produce on site. Host removal and disposal. 	Not eligible to be moved off site for packing or processing.
Within Core Quarantine Area (Property is within 0.5-mile radius of a detection)	<ul style="list-style-type: none"> Post-harvest treatment.¹ Transport for juicing, processing, or freezing.² Store, process, or consume hosts on site (no treatment required). Double-bag unused produce prior to disposal and send to an approved landfill or bury on site. 	Not eligible for pre-harvest bait treatments.
General Quarantine Area	<ul style="list-style-type: none"> Pre-harvest bait treatments may be used to harvest and transport hosts for packing within or outside of the quarantine.³ If pre-harvest treatments have not been completed, hosts may be treated post-harvest, juiced, or frozen.² Store, process, or consume crops on site (no treatment required). Bury unused hosts on site or double-bag and send to an approved landfill. 	
Outside of a Quarantine Area	<ul style="list-style-type: none"> No fruit fly quarantine restrictions. May conduct voluntary pre-harvest bait treatments with approval from the CAC. 	

¹ See [USDA Treatment Manual](#) for full list of treatment options per commodity.

² Requires permission from CAC(s).

³ A minimum of 4 treatments conducted over a minimum of 30 days is required prior to harvest and must be monitored by CDFA. The number of treatments required is weather and temperature dependent. CDFA will issue a certificate of quarantine compliance once treatments are completed.

⁴ For citrus growers in select Oriental fruit fly quarantines, USDA has authorized modifications for the movement of fresh citrus fruit from non-core areas. For details, citrus growers can visit [USDA's website](#).

Fruit Removal

Any grower located within 100 meters of a larval and/or mated female detection site is required to strip host fruit and vegetables and appropriately dispose of the hosts. Growers are responsible for all labor and disposal costs associated with this requirement. Contact CDFA prior to host removal.

Note: In the event of a large fruit fly infestation, fruit removal may be expanded to include a 0.5-mile radius around the detection sites.

CDFA-Led Activities: Invasive Fruit Fly Response Program

To supplement the critical activities administered by growers on their own properties, CDFA implements a comprehensive response program, which may include the following actions conducted in both residential properties and commercial operations.

Delimitation Trapping

Following a single invasive fruit fly detection, a more intensive trapping program, called delimitation trapping, is conducted to determine the extent and boundaries of an infestation. Trap lures and densities vary based on species biology, lure effectiveness, and past CDFA experience with the species. Delimitation traps may be placed and serviced by CDFA and program cooperators in residential and commercial host plants. Growers are encouraged to cooperate with officials servicing traps and avoid moving existing traps, but no further actions are required, unless instructed by CDFA or CAC(s).

Fruit Cutting and Larval Survey

Fruit on a property where a target fruit fly has been trapped may be inspected for possible larval infestation. Fruit on all properties (commercial and residential) in a 200-meter (656 foot) radius of a find site are inspected and surveys may be conducted more than once to ensure all life stages can be observed. Fruit cutting and larval survey is conducted by CDFA and program cooperators in residential and commercial settings. Growers are encouraged to cooperate with officials conducting these activities, but no further actions are required.

Eradication Treatment

The treatment protocol may consist of foliar Spinosad bait spray, host fruit removal and depending on the species of invasive fruit fly, male attractant technique (MAT), and/or sterile insect technique. These activities are conducted by CDFA and program cooperators near residential and commercial areas.

Organic Foliar Spray on Residential Properties

If evidence that a breeding invasive fruit fly population exists on a property, which would include, larvae (maggots), a mated female, or multiple adults, then foliar treatments will occur. CDFA staff and/or treatment contractors in conjunction with CDFA oversight will conduct treatments on

residential properties. The foliage of host trees, ornamental trees, and shrubs within 200 meters of each detection site will be spot treated with an organic formulation of Spinosad bait spray (GF-120 NF Naturalyte® Fruit Fly Bait). Treatments may be repeated at seven-to-14-day intervals for one life cycle of the fly (typically two to three months, dependent on temperature).

If grower properties are located within 200 meters of a detection, growers are responsible for applying the recommended organic foliar spray, in accordance with the [USDA Treatment Manual](#).

Host Fruit Removal on Residential Properties

If evidence that a breeding invasive fruit fly population exists on a property, which would include, larvae (maggots), a mated female, or multiple adults, then host removal (fruit stripping) may occur.

- All host fruit may be removed from all properties within a minimum of a 100-meter radius around the detection sites.
- In the event of a large infestation, fruit removal may be expanded to include a 0.5-mile radius around the detection sites.
- The fruit is taken to a landfill for burial using regulatory compliance protocols. Fruit removal will occur once at the beginning of the project but may be repeated if additional flies are detected.

Note: If commercial properties are located in the designated fruit removal area, growers are responsible for administering and funding fruit removal activities on their property.

Male Attractant Technique (MAT)

The male attractant technique (MAT) is used to eliminate mature adult male invasive fruit flies. A lure – which may include methyl eugenol or cuelure – and a pesticide are combined and placed in the environment. The lure used is determined based on what the male invasive fruit flies respond to and is then used to attract the male invasive fruit flies. The male fruit flies are killed as they feed or come in contact with the pesticide. All MAT traps and bait stations are managed and monitored by CDFA.

Growers may see CDFA staff near their property conducting MAT activities, but no further actions are required.

CDFA Fruit Fly Quarantine Resources and Contacts

For additional details on all active invasive fruit fly quarantines, how quarantines are established, and more, please visit:

<https://www.cdfa.ca.gov/plant/pe/InteriorExclusion/quarantine.html>

Questions? Please contact:

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