

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE
PROPOSED CHANGES IN THE REGULATIONS
Title 3, California Code of Regulations

Section 3591.32 Tephritidae Fruit Fly Eradication Area

INITIAL STATEMENT OF REASONS/
POLICY STATEMENT OVERVIEW

The California Department of Food and Agriculture (Department) proposes to adopt Title 3 California Code of Regulations (CCR) Section 3591.32 Tephritidae Fruit Fly Eradication Area. This regulation will allow the Department to create an eradication area for any fruit flies in the family Tephritidae which will help prevent the spread of these fruit flies within California should they be detected within the state.

Description of Public Problem, Administration Requirement, or Other Condition or Circumstance the Regulations are Intended to Address

These regulations are intended to address the obligation of the Department of Food and Agriculture to protect the agricultural industry and environment from the introduction and spread of injurious plant pests within California. Specifically, these regulations are intended to prevent the establishment of fruit flies in the family Tephritidae, a family of pest that are threats to agriculture and the environment, into California. Recent finds of fruit flies in the family Tephritidae in California and current modeling demonstrate a viable pathway of spread and potential for widespread infestations if established, rendering such regulations necessary.

Background

The fruit fly family Tephritidae includes roughly 5000 species worldwide. Most of the fruit flies share a common life history that places them in the highest pest risk category for agricultural production. The females punctures young host fruit to lay eggs which develop into larvae. This contrasts with common household fruit flies or pomace flies (family Drosophilidae) that generally lay eggs in overripe or rotting fruit. The punctures admit decay organisms that may cause tissue breakdown. Larval feeding causes breakdown of fruit tissue. Fruits with egg punctures and

larval feeding are generally unfit for human consumption. Pupae may be found in fruit, but normally are found in soil. While the time it takes varies, some species reach sexual maturity in 32 days and can fly up to 30 miles in search of food. This, along with their high reproductive rate, allows them to infest new areas and expand their range very quickly.

California currently has eradication areas for the following species of the Tephritidae family:

- *Anastrepha ludens*, Mexican fruit fly
- *Anastrepha obliqua* West Indian fruit fly
- *Anastrepha striata*, New World guava fruit fly
- *Anastrepha suspensa*, Caribbean fruit fly
- *Bactrocera albistrigata*, white striped fruit fly
- *Bactrocera correcta*, guava fruit fly
- *Bactrocera cucurbitae*, melon fly
- *Bactrocera dorsalis*, Oriental fruit fly
- *Bactrocera latifrons*, Malaysian fruit fly
- *Bactrocera tryoni*, Queensland fruit fly
- *Bactrocera zonata*, peach fruit fly
- *Ceratitis capitata*, Mediterranean fruit fly
- *Zeugodacus tau*, tau fly

The overlapping host lists for these various species include several major agricultural crops including almonds, which in 2022 had \$3.5 billion in production value, citrus at \$2.2 billion, and tomatoes at \$1.5 billion. Other crops that host these species include apples, avocados, cherries, mangos, melons, peppers, olives, pears, and stone fruits. As the known host lists for these species are broad and regularly are revised by addition, there are likely unknown potential hosts in California agriculture and the environment.

Purpose and Factual Basis

The purpose of Section 3591.32 is to protect California from the invasive fruit flies in the family Tephritidae. In a 2023 article in the Journal of Pest Science, 44 species were found to have been accidentally introduced across the world outside of their native range. In 2023 infestations of two of these species, the Queensland Fruit Fly and Tau Fly, were detected in California, a first for North America. To prevent harm to California's agricultural and the environment, emergency regulations were put into place; these regulations have since been made permanent. In 2024, there have been two additional emergency regulations needed when the Caribbean and Mediterranean fruit flies were found in newly reported counties in California. While the

Department uses modeling to predict where species of tephritid fruit flies could become established, due to climate change the Departments current modeling did not predict the Oriental Fruit Fly being found in Kern County in 2023. This unexpected detection required an emergency amendment of the eradication area regulation to prevent it's further spread.

The factual basis for determination by the Department that the adoption of these regulations is necessary is as follows:

A Statewide Eradication Area is needed to protect California from the invasive fruit flies in the family Tephritidae. Likely due to climate change, niche modeling using Maximum Entropy (Maxent) has not proven 100% accurate in predicting where fruit flies will be detected. As warming of California proceeds, new potential habitat for these heat-loving insects will increase, expanding to include new counties. There are 44 known invasive tephritid species, of which only 13 have been detected in California. All infestations to date have been successfully eradicated. Considering that the factors which have led to these fruit flies being found in California, such as commerce and abundant hosts, have not changed, there is a high risk of more members of this family being introduced in California and initiating regulatory actions.

As known, and likely unknown, host plants for these various species of tephritid fruit flies are widely grown in California, this family could possibly establish wherever it is introduced. Only certain desert and high mountain regions are unlikely areas of establishment. The known hosts of the family Tephritidae include multiple agriculturally important crops in California, including almonds, apples, avocados, cherries, citrus, mangos, melons, peppers, olives, pears, stone fruits, and tomatoes. Infestations of fruit flies may lower crop yields and increase production costs of economically important crops such as almonds, citrus, and tomatoes. Some members of this family can reach sexual maturity and move over 30 miles in the time it takes to identify a specimen and promulgate an emergency regulation. Limiting the time period between tephritid fruit fly detection and targeted management response is critical to eradicating incipient infestations, as geometric or logarithmic population growth can occur within one fruit fly life cycle. The risk of establishment increases with each day of delayed response. Rapid responses are necessary to prevent permanent establishment of these noxious pests in California.

To prevent duplication issues the regulations that currently create Eradication Areas for any tephritid species are being repealed, and any regulations that reference current eradication areas are being amended to reference the Statewide Eradication area instead.

California Environmental Quality Act (CEQA)

Prior to conducting any action authorized by this regulation, the Department shall comply with the California Environmental Quality Act of 1970 (Public Resources Code Section 21000 et. seq. as amended) and the State CEQA Guidelines (Title 14 California Code of Regulations Section 15000 et. seq.).

Project Description

Section 3591.32(a)

This section establishes that an eradication area is being created against any species of the fruit fly family Tephritidae. This eradication area consists of areas where these pests have been detected or there is an immediate threat of introduction, which is the entire state of California. The entire state is being declared an eradication area because there are or will soon be suitable conditions for establishment and widespread host fruit production throughout the state.

Section 3591.32(b)

Section 3591.32(b) directs the public to the hosts and possible carriers of these fruit flies.

Section 3591.32(b) (1) has the web address where the host lists for any fruit fly species in this family can be found: https://www.cdfa.ca.gov/plant/PDEP/target_pests.html. These lists will be updated by the Department as the USDA issues a new list or as studies add and remove hosts. Having the host lists located online allows members of the public to freely access this information and the Department to expeditiously update these lists as needed.

Section 3591.32(b)(2) adds that soil within the drip line of hosts producing, or that have produced, plant parts listed, is also a host. If not treated as a host, soil and planting media can host larva of this family. This language maintains current regulatory language used in regulations being replaced.

Section 3591.32(b)(3). There is potential for these pests to infest other plants that are not yet known to be hosts. This subsection is included so if new hosts are found they can be included in the eradication area.

Section 3591.32(c)

This section lists the means and methods that can be used for eradication, control or suppression of the fruit fly family Tephritidae within California. The language in this section maintains and refines current regulatory language used in regulations rendered otherwise superfluous by this regulation.

Section 3591.32(c)(1) allows for the use of insecticides, chemicals, or other materials as spray (including soil spray treatments), dust, bait, or in any other form as often as necessary to effect control or eradication hosts or articles that are infested or exposed to infestation and capable of harboring or spreading any species of the fruit fly family Tephritidae. These actions can destroy the pest and stop an infestation from spreading.

Section 3591.32(c)(2) allows for the removal and destruction of hosts, the fruit of such hosts, and possible carriers, if such action is the only practical way of eliminating, suppressing, or controlling the infestation of any species of the fruit fly family Tephritidae. By removing host material, the pest's movement can be limited and the life cycle interrupted, preventing further spread and infestation.

Section 3591.32(c)(3) allows for search for any species of the fruit fly family Tephritidae by visual inspection, the use of traps, or any other means anywhere within the said area. Early detection of the pest will lead to faster eradication.

Section 3591.32(c)(4) allows for the removal and destruction of abandoned or unwanted hosts or possible carriers bearing or capable of bearing any species of the fruit fly family Tephritidae. By removing hosts and carriers, the potential areas for this pest to infest will be reduced.

Section 3591.32(c)(5) allows for the importation, rearing, liberation, and fostering of parasites and predators that attack any species of the fruit fly family Tephritidae. This is one of the established techniques currently used to stop infestations

Section 3591.32(c)(6) allows for the importation, rearing, liberation, and fostering of sterile forms of the fruit fly family Tephritidae. This is one of the established techniques currently used to stop infestations

Current Laws & Regulations

Existing law, Food and Agricultural Code (FAC) Section 407, provides that the Secretary may adopt such regulations as are reasonably necessary to carry out the provisions of this code which the Secretary is directed or authorized to administer or enforce.

Existing law, FAC section 5322, provides that the Secretary may establish, maintain, and enforce quarantine, eradication, and such other regulations as are in her opinion necessary to circumscribe and exterminate or prevent the spread of any pest which is described in FAC section 5321.

Existing law, FAC section 5761, provides that the Secretary may proclaim any portion of the state to be an eradication area with respect to the pest, prescribe the boundaries of such area, and name the pest and the hosts of the pest which are known to exist within the area, together with the means or methods which are to be used in the eradication or control of such pest.

Existing law, FAC section 5762, provides that any pest with respect to which an eradication area has been proclaimed, and any stages of the pest, its hosts and carriers, and any premises, plants, and things infested or infected or exposed to infestation or infection with such pest or its hosts or carriers, within such area, are public nuisances, which are subject to all laws and remedies which relate to the prevention and abatement of public nuisances.

Existing law, FAC section 5763, provides that the Secretary or the commissioner acting under the supervision and direction of the Secretary, in a summary manner, may disinfect or take such other action, including removal or destruction, with reference to any such public nuisance, which they think is necessary.

The Department is the only agency which can implement pest quarantines. As required by Government Code Section 11346.5(a)(3)(D), the Department has conducted an evaluation of

these regulations and has determined that it is not inconsistent or incompatible with existing state regulations.

Anticipated Benefits from This Regulatory Action

The adoption of these regulations provides the necessary regulatory authority to quarantine and eradicate serious insect pests, a mandated statutory goal.

These regulations are necessary to prevent the spread of species of the fruit fly family Tephritidae to uninfested areas of the State. The regulation benefits industries (nursery, fruit for domestic use and exports, packing facilities), the environment, and the overall California economy by preventing the spread of fruit flies.

Mandate on Local Agencies or School Districts

The Department of Food and Agriculture has determined that these regulations do not impose a mandate on local agencies or school districts.

Economic Impact Analysis (Government Code 11346.3(b))

This regulatory action will allow the Department to eradicate and prevent the spread of species of the fruit fly family Tephritidae in California and will bring benefits to:

- the general public
- homeowners and community gardens
- the agricultural industry
- the State's general fund

If species of the fruit fly family Tephritidae were to become established within California it could greatly affect the general public. Host plants are widely grown in California and include both native plants and agriculturally important crops. By adopting these regulations to prevent infestation, the general public benefits by having a native environment and agriculture safe from this pest.

The adoption of these regulations benefits home gardeners who grow host material for consumption and/or ornamentals in various rural and urban landscapes. By preventing infestation

with species of the fruit fly family Tephritidae and thereby preventing damage to hosts, the regulations eliminate the need for widespread treatment of hosts to mitigate infestations of species in the fruit fly family Tephritidae.

California is a large-scale commercial producer, in some cases the principal or only domestic producer, of many host crop plants of species of tephritid fruit fly. The California, national, and international consumers of California agriculture benefit by having high quality produce and produce products available at lower cost. It is assumed that any increases in production costs will ultimately be passed on to the consumer. By preventing an infestation with species of the fruit fly family Tephritidae, these increased production costs will be avoided.

There are economic benefits to the State's general fund from these regulations. The cost of many species of the fruit fly family Tephritidae infestation is unknown, but the Department estimated the cost of not eradicating oriental fruit fly in California would range from \$44 to \$176 million in crop losses. Preventing a wide scale infestation in California and maintaining the economic baseline prevents an outcome that could cost the State millions or billions of dollars.

The Creation or Elimination of Jobs within the State

Section 3591.32 will allow the Department to create an eradication area for species of the fruit fly family Tephritidae, which will help prevent the spread of fruit flies within California should it be detected within the state. Detection and eradication activities are currently being performed by existing state staff throughout the state by trapping and identifying invasive agricultural pests. No additional staff positions will be created or eliminated by this regulation. Therefore, the Department has determined that this proposal will not have a significant impact on the creation of or elimination of jobs in the State of California.

The Creation or Elimination of Businesses in California

Section 3591.32 will allow the Department to create an eradication area for species of the fruit fly family Tephritidae, which will help prevent the spread of fruit flies within California should it be detected within the state. Detection and eradication activities are currently being performed by existing state staff throughout the state by trapping and identifying invasive agricultural pests. No businesses will be created or eliminated as the existing programs will continue. Therefore, the

Department has determined that this proposal will not have a significant impact on the creation or elimination of new businesses in the State of California.

The Expansion of Businesses in California

Section 3591.32 will allow the Department to create an eradication area for species of the fruit fly family Tephritidae, which will help prevent the spread of fruit flies within California should any be detected within the state. Detection and eradication activities are currently being performed by existing state staff throughout the state by trapping and identifying invasive agricultural pests. No businesses will be expanded as the existing programs will continue. Therefore, the Department has determined that this proposal will not have a significant impact on the expansion of businesses currently doing business in the State of California.

Worker Safety

These regulations are not expected to have an effect on worker safety.

Estimated Cost or Savings to Public Agencies or Affected Private Individuals or Entities

The Department of Food and Agriculture has determined that Section 3591.32 do not impose a mandate on local agencies or school districts. All eradication activities shall be conducted by the Department. Therefore, no reimbursement is required under Section 17561 of the Government Code.

The Department also has determined that no reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts and no nondiscretionary costs or savings to local agencies or school districts, will result from the adoption of subsection 3591.32.

There are no reimbursable costs or savings under Part 7 (commencing with section 17500) of Division 4 of the Government Code to local agencies or school districts and no nondiscretionary costs or savings to local agencies or school districts anticipated from the adoption of this regulation.

The Department has determined that the proposed actions will not have a significant adverse economic impact on housing costs or California business, including the ability of California businesses to compete with businesses in other states.

Potential Impact to Homeowners and Community Gardens

The implementation of these regulations will maintain the economic baseline and prevent increased costs to the consumers of California produce and increased pesticide usage by homeowners and others. The host plants attacked by the fruit fly family Tephritidae are enjoyed by the home gardener and community gardens. If an infestation of fruit flies are not eradicated due to a delay in eradication efforts, then homeowners and community gardeners would be negatively impacted.

Potential Impacts to General Fund and Welfare

The proposed regulations do not have immediate or definitive impact to the general fund or general welfare, as it is meant to maintain the economic baseline. It would facilitate a fast and effective response if species in the fruit fly family Tephritidae are detected in the designated eradication area. Speed of response is key to eradicating an incipient pest infestation. Programmatic delays potentially can lead to expansion of infestations and quarantines, as well as increased production costs and potential job loss. The agricultural industry is one of the economic engines in the State. Negative impacts to agriculture impact the State's economic recovery and the general welfare of the State. Additionally, any job losses in this area would likely be felt by low-skilled workers whose employment options are already limited. The loss of any additional agricultural jobs would likely result in an increase in the State's public assistance obligations which would also negatively impact the State's economic recovery.

As required by Government Code Section 11346.5(a)(3)(D), the Department has conducted an evaluation of these regulations and has determined that they are not inconsistent or incompatible with existing state regulations.

The Department is simultaneously proposing two separate and related rulemakings, both also being published in the March 28, 2025 California Regulatory Notice Register:

- Repeal of 13 Fruit Fly Eradication Area regulations in Title 3.

Repealing these regulations will eliminate duplication with the forthcoming adoption of section 3591.32

- Amendment of 11 Fruit Fly Interior Quarantine regulations in Title 3.

Amending these regulations will update the references to the pests' host lists to the forthcoming adoption of 3591.32.

The various fruit flies enumerated in these other regulations all fall under the family of Tephritidae Fruit Fly.

For more information on these proposed regulations, please see those other Notices published in this same Notice Register."

Assessment

The Department has made an assessment that the adoption of these regulations will help maintain the economic baseline and (1) will have no significant impact on the creation or elimination of jobs in the State of California, (2) will have no impact on the creation of new businesses or elimination of existing businesses within the State of California, (3) will have no impact on the expansion of businesses within the State of California, (4) will have an impact on the health and welfare of California residents, (5) will have an impact on the state's environment, and (6) is not expected to benefit workers' safety.

Health and welfare: The proposed action will benefit the health and welfare of California residents by making it more likely that the Department can react quickly and effectively if species in the fruit fly family Tephritidae infestation are detected. Speed of response is key to eradicating an incipient pest infestation. Programmatic delays potentially can lead to larger and more costly pest quarantines, as well as increased production costs and potential job loss.

The state's environment: The proposed action will benefit the state's environment by making it more likely that the Department can react quickly and effectively if species in the fruit fly family Tephritidae infestation are detected. If the Department fails to act quickly and effective to prevent

the spread and eradicate an infestation, this pest could easily spread into the local environment and non-agricultural ecosystems. This could adversely impact private and commercial landscape plantings, local, regional, state and national parks, other recreational sites, open habitats, and wild lands. Affected plants could become less vigorous and may produce fewer seeds. Plants/trees with low propagule output can result in major changes to plant community structure.

Alternatives Considered

The Department of Food and Agriculture must determine that no alternative considered would be more effective in carrying out the purpose for which the action is proposed or would be as effective as and less burdensome to affected private persons than the proposed action.

The Department considered taking no action. If no action is taken, the Department would need to continue to amend or promulgate new eradication authority regulations for species in the fruit fly family Tephritidae along with the concomitant delays in regulatory response. If these response delays allowed species in the fruit fly family Tephritidae to spread and become fully established in host production areas, California's agricultural industry would suffer losses due to increased pesticide use, decreased production of marketable produce, and loss of markets if the United States Department of Agriculture (USDA) or other countries enact quarantines against California products which are hosts for species in the fruit fly family Tephritidae. Therefore, this alternative was rejected.

Information Relied Upon

The Department relied upon the following studies, reports, and documents in the proposed adoption of Title 3 CCR Section 3591.32:

California Department of Food and Agriculture, "ACTION PLAN for METHYL EUGENOL ATTRACTED FRUIT FLIES including the Oriental Fruit Fly" Revised April 2000

California Department of Food and Agriculture, California Agriculture Statistics Review 2022-2023

California Department of Food and Agriculture, Oriental Fruit Fly Pest Profile, located at: https://www.cdffa.ca.gov/plant/PDEP/target_pest_disease_profiles/oriental_ff_profile.html#:~:text=It%20has%20been%20estimated%20that%20the%20cost%20of,crop%20losses%2C%20addit

ional%20pesticide%20use%2C%20and%20quarantine%20requirements, visited on November 22, 2024

European and Mediterranean Plant Protection Organization, EPPO Global Database, *Anastrepha suspensa* (ANSTSU) Hosts, located at: <https://gd.eppo.int/taxon/ANSTSU/hosts>, visited on November 22, 2024

Jiří Trombik; Samuel F. Ward; Allen L. Norrbom; Andrew M. Liebhold; Journal of Pest Science (2023) 96:345–357, Global drivers of historical true fruit fly (Diptera: Tephritidae) invasions, 25 January 2022

United States Department of Agriculture, *Anastrepha ludens*, Mexican Fruit Fly Host List, July 2021

United States Department of Agriculture, *Bactrocera cucurbitae*, Melon Fly Host List, September 2016

United States Department of Agriculture, *Bactrocera tau* Host List 2016, June 2016

United States Department of Agriculture, Malaysian fruit fly, *Bactrocera latifrons*, Host List 2016

United States Department of Agriculture, Mediterranean fruit fly, *Ceratitis capitata*, Host List, January 2017

United States Department of Agriculture, National Agricultural Statistics Service, Citrus Fruits 2023 Summary, August 2023

United States Department of Agriculture, New World Guava Fruit Fly, *Anastrepha striata*, Host List, Host List, November 2018

United States Department of Agriculture, Oriental Fruit fly, *Bactrocera dorsalis*, Host List, August 2016

United States Department of Agriculture, Peach fruit fly, *Bactrocera zonata*, Host List, June 2017

United States Department of Agriculture, Provisional List of Host Plants of Guava Fruit Fly, *Bactrocera correcta* (Bezzi) (Diptera: Tephritidae), July 15, 2014

United States Department of Agriculture, Queensland Fruit Fly (QFF), *Bactrocera tryoni*, Regulated Host List, 2024

United States Department of Agriculture, West Indian fruit fly, *Anastrepha obliqua*, Host List, Host List. September 2016

United States Department of Agriculture, White Striped Fruit Fly, *Bactrocera albistrigata*, Host List. August 2019