DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3591.28, Subsections (a), (b) and (c)

West Indian fruit fly Eradication Area

INITIAL STATEMENT OF REASONS/

POLICY STATEMENT OVERVIEW

Description of Public Problem, Administration Requirement, or Other Condition or Circumstance the Regulation is Intended to Address

This regulation is intended to address the obligation of the Department of Food and Agriculture (Department) to protect the agricultural industry from the movement and spread of injurious plant pests within California.

Specific Purpose and Factual Basis

The specific purpose of Section 3591.28 is to provide authority to the Department to perform eradication activities against West Indian fruit fly, *Anastrepha obliqua*, in the County of Los Angeles.

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

If the fly were allowed to spread and become established in host fruit production areas, California's agricultural industry would suffer losses due to decreased production of marketable fruit, increased pesticide use, and loss of markets if other states or countries enacted quarantines against California products. This in turn would negatively impact the State’s economic recovery which in turn would impact the general welfare of the State.

The entire County of Los Angeles is being proposed as eradication area because the utilization of these political boundaries will avoid frequent amendments to the regulation if the West Indian fruit fly is detected elsewhere within this county and there are no associated impacts with the regulation if no flies are found. The detection of one West Indian fruit fly is the trigger for eradication delimitation trapping to confirm either there are no other flies present and no further actions are necessary, or treatment activities begin upon the detection of a second fly. If

delimitation trapping is not implemented then one fly is the trigger for a quarantine and by default this would include the entire Los Angeles County. This would have a significant impact on many of California exports of West Indian fruit fly host material. Many trading partners do not accept host material produced or transiting through a quarantine area.

If a second fly is found, not only does it trigger a treatment program but it also triggers a quarantine. A quarantine would include that area encompassed by a 3 mile radius surrounding the epicenter of the incipient infestation.

In addition to trapping, host fruit on a property where a fly has been trapped and adjacent properties may be inspected for possible larval infestation. Small circular oviposition scars are occasionally visible, indicating an infested fruit. In the absence of visible clues, 100 or more of the fruit on preferred hosts (if available) may be cut open at random and examined for larvae.

This regulation will avoid harm to the public's general welfare by providing authority for the State to perform detection, control and eradication activities against West Indian fruit fly in Los Angeles County. To prevent spread of the fly to noninfested areas to protect California's agricultural industry, it is necessary to immediately begin delimitation activities.

Therefore, it was necessary to adopt Section 3591.28 on an emergency basis.

Subsection 3591.28(a) established the target pest, West Indian fruit fly and the eradication area, Los Angeles County.

Subsection 3591.28(b) established the hosts.

Subsection 3591.28(c) established the means and methods which can be utilized to eradicate the West Indian fruit fly.

Background

West Indian fruit fly is an insect pest which attacks the fruit of various plants including:

Scientific Name	**Common Name**
Alchornea latifolia Sw.	Gargantilla
Ampelocera hottlei (Standl.) Standl.	N/A
Anacardium occidentale L.	Cashew[1]
Annona hayesii Saff. ex Standl.	N/A
Averrhoa carambola L.	Carambola, Starfruit
Bellucia grossularioides (L.) Triana	N/A
Brosimum alicastrum Sw.	Breadnut
Campomanesia guazumifolia (Cambess.) O. Berg.	Sete-capas
Campomanesia sessiflora (O Berg.) Mattos	Guavira
Campomanesia spp.	N/A
Chrysobalanus icaco L.	Coco-plum
Coffea arabica L.	Arabian coffee
Couma guianensis Aubl.	N/A
Crataegus spp.	N/A
Diospyros digyna Jacq.	Black persimmon
Diopsyros spp.	Persimmon
Dovyalis hebecarpa (Gardner) Warb.	Ceylon gooseberry
Eriobotrya japonica (Thunb.) Lindl.	Loquat
Eugenia brasiliensis Lam.	Brazil cherry
Eugenia dysinterica DC.	Cagaita
Eugenia lambertiana DC.	N/A
Eugenia nesiotica Standl.	N/A
Eugenia pyriformis Cambess.	Uvalha
Eugenia stipitata McVaugh	Araca-boi
Eugenia uniflora L.	Brazil cherry
Flacourtia indica (Burm.f.) Merr.	Governor's plum
Geissospermum argenteum Woodson	N/A
Inga jinicuil G. Don	N/A
Inga micheliana Harms	N/A
Inga spp.	N/A
Malpighia emarginata DC.	Barbados cherry
Malpighia glabra L.	Acerola
Malpighia spp.	N/A
Mangifera indica L.	Mango
Manilkara zapota (L.) P. Royen	Sapote
Mouriri spp.	N/A

Myrcia eximia DC.	N/A
Myrciaria dubia (Kunth) McVaugh	Camu-camu
Myrciaria floribunda (H. West ex Willd.) O. Berg	N/A
Plinia cauliflora (Mart.) Kausel	Jabuticaba
Passiflora edulis Sims	Passionflower
Passiflora quadrangularis L.	Giant granadilla
Passiflora spp.	Passionflower
Pouteria caimito (Ruiz & Pav.) Radlk.	Caimito
Pouteria lucuma (Ruiz & Pav.) Kuntze	Lucuma
Pouteria viridis (Pittier) Cronquist	N/A
Prunus dulcis (Mill.) D.A. Webb	Almond[1]
Prunus persica (L.) Batsch	Peach
Prunus salicina Lindl.	Japanese plum
Prunus serotina Ehrh	Capuli, Black Cherry
Psidium acutangulum DC.	N/A
Psidium cattleyanum DC.	Strawberry guava
Psidium friedrichsthalianum (O. Berg) Nied.	Costa Rican guava
Psidium guajava L.	Guava
Psidium guineense Sw.	Brazil guava
Psidium spp.	N/A
Pyrus communis L.	Pear
Spondias dulcis Sol. ex Parkinson	Ambarella
Spondias mombin L.	Hog-plum
Spondias purpurea L.	Purple mombin
Spondias radlkoferi Donn. Sm.	N/A
Spondias spp.	N/A
Spondias tuberosa Arruda ex Kost.	Umbu
Spondias venulosa (Engl.) Mart. ex Engl.	N/A
Syzygium jambos (L.) Alston	Rose-apple
Syzygium malaccense (L.) Merr. & L.M. Perry	Malay apple
Tapirira mexicana Marchand	N/A
Terminalia catappa L.	Tropical almond

The female punctures host fruit to lay eggs which develop into larvae. 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 drop out and are found in soil.

The detection of an adult West Indian fruit fly meets the State's, national and international standards that mandate intensive delimitation efforts to determine if an incipient infestation of the fly exists in these areas. The Department continues to perform West Indian fruit fly trapping in Los Angeles County.

California, national and international consumers of California host crops benefit by having high quality fruit available at lower cost. It is assumed that any increases in production costs will ultimately be passed on the consumer. The adoption of this regulation also benefits homeowners who grow their own host fruits for consumption.

Action Plan

Intensive Delimitation Trapping

Intensive delimitation trapping is triggered when a single fly is trapped. The program uses the McPhail trap, an invaginated glass flask baited with yeast or Nu-lure in water that is attractive to male and female flies. Following the confirmation of the specimen, trap densities in the core square mile are increased within 24 hours. Trap densities in the remainder of the delimitation area will be increased from the core outward within 72 hours of the find. Optimally, delimitation traps are placed over an 81-square-mile area in an 80-40-20-10-5 array. Traps in the core mile are serviced daily for the first week. If no additional flies are found, the trap inspection frequency changes to weekly and intensive trapping continues for two life cycles and then trap densities revert to detection trapping levels. However, if a second fly is found, additional traps are deployed around the new fly find and trap servicing in the core area will go to a twice weekly schedule and increased emphasis will be placed on servicing traps in the buffer areas in an effort to better delimit the infestation. Traps in the eight-square miles around the core are serviced every two days, until eradication activities begin, at which time the trap inspection frequency changes to weekly. All traps are then serviced weekly for three life cycles of the fly beyond the last fly detected. Traps may be relocated to available preferred hosts as practical.

Core square mile, surrounding each detection site is 0.5 mile radius with 80 McPhail traps.

First buffer is eight square miles surrounding core with 40 McPhail traps per square mile.

Second buffer is 16 square miles surrounding first buffer with 20 McPhail traps per square mile.

Third buffer is 24 square miles surrounding second buffer with 10 McPhail traps per square mile.

Fourth buffer is 32 square miles surrounding third buffer with 5 McPhail traps per square mile.

Following an eradication program, if no additional flies are trapped, intensive trapping ends after the third complete life cycle, depending on the technique used to achieve eradication, following the last fly find, as determined by a temperature-dependent developmental model run by program personnel in Sacramento.

Larval Survey

Fruit on a property where a fly has been trapped may be inspected for possible larval infestation. Small circular oviposition scars are occasionally visible, indicating an infested fruit. In the absence of visible clues, 100 or more of the fruit on preferred hosts (if available) may be cut open at random and examined for larvae. First and second instar larvae are tiny and may be feeding immediately under the surface of the skin; therefore, fruit cutting should be left to experienced personnel. Fruit on properties adjacent to a trap catch may also be inspected.

If two or more flies are trapped in proximity, fruit cutting may be extended to all properties in a 200-meter radius of the finds, concentrating on preferred hosts. Fruit must be inspected on the property; it cannot be removed from an established quarantine area.

ERADICATION ACTIVITIES

Triggers and General Approach

The CDFA begins an eradication project when it determines that a West Indian fruit fly infestation exists within the state. Although there is no debate that the last two criteria indicate the presence of a breeding West Indian fruit fly population, the first criterion is often open to further review. The CDFA may take up to 10 days, after the criteria are met, to further refine the presence and location of the infestation, in order to better target eradication activities.

1. Two flies within three miles of each other and within a time period equal to one life cycle of the fly;
2. One mated female (known or suspected to have been mated to a wild

male); or

3. Larvae or pupae.

Treatment will begin immediately after notification, within 24 to 72 hours after an infestation is determined to exist. Any single male or immature female fly caught within a 15-mile radius of the treatment area may be considered a satellite infestation. The decision on whether to treat will be based on when and where the flies are trapped. A single fly trapped within less than one life cycle of the original find may trigger intensive trapping only. More than one single find, or a fly that is trapped after one or two completed life cycles of the original find, may trigger immediate treatment. The 15-mile radius for satellite infestations then expands to encircle any new treatment area.

Bait sprays are used to stop reproduction of the wild flies and to suppress fly populations until sterile flies can be reared in sufficient numbers to overload the wild population. Current label(s) for conditions or restrictions to pesticide treatments will be consulted. Treatments using bait sprays will continue generally for at least two life cycles of the fly past the last fly detected. Treatments that include the use of sterile flies will continue for at least two life cycles past the last fly detected. A temperature dependent model of the fly's life cycle is used to time the end of treatments. Daily high and low temperatures will be taken from the soil and air in the treatment area using a thermograph (Datapod) housed in a standard weather shelter. Temperature monitoring equipment is to be located at the initial fly find site and each additional wild fly site that represents a significantly different environment or core area. Data will be relayed weekly to the PD/EP Branch in Sacramento.

The continued application of insecticide bait spray occurs only when the severity of an infestation warrants it.

California Environmental Quality Act

A Statewide Plant Pest Prevention and Management Program Environmental Impact Report (PEIR) was prepared by the Department as the lead agency under the California Environmental Quality Act. The PEIR addresses the potential impacts and mitigations when implementing the Statewide Plant Pest Prevention and Management Program activities related to West Indian fruit fly.

The PEIR may be accessed at the following website:
http://www.cdfa.ca.gov/plant/peir/

Economic Impact Analysis

The eradication and prevention of the spread of West Indian fruit fly in California through the amendment and implementation of this regulation economically benefits:

- The general public
- Homeowners and community gardens
- Agricultural industry
- The State's general fund

The Department's budgeted operational program costs for the implementation of this eradication program for fiscal year 2016/2017 is $50,000. The total budgeted cost of $50,000 is money well spent to eliminate the long term impacts of a West Indian fruit fly infestation.

Potential Agricultural Industry Impacts

If the fly were allowed to spread and become established in host fruit production areas, California's agricultural industry would suffer losses due to decreased production of marketable fruit, increased pesticide use, and loss of markets if other states or countries enacted quarantines against California products.

The 2010-2011 California Agricultural Resource placed the approximate value of the following hosts at: apples-$66 million, peaches-$326 million, pears-$93 million and all plums-$252 million.

Other listed hosts are being grown as specialty crops in California. These niche markets would also be negatively impacted.

Potential Impact to Homeowners and Community Gardens

Many of the host fruit attacked by the West Indian fruit fly are favorites for the home gardener and community gardens. Therefore, if the West Indian fruit fly is not eradicated homeowners and community gardeners would be negatively impacted.

Potential Impacts to General Fund and Welfare

California's unemployment rate in March 2015 dropped to 6.5 per cent. During the preceding 12 months prior to March 2015, agricultural employment was up by 5.1 per cent. The agricultural industry is one of the economic engines which are lowering the State's unemployment rate. 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 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.

Anticipated Benefits from This Regulatory Action

One of the Department's broad statutory objectives is to prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds (FAC Section 403) and that it may adopt regulations as are reasonably necessary to achieve this (FAC Section 407). The Department is obligated to investigate the existence of any pest that is not generally distributed within this State and determine the probability of its spread, and the feasibility of its control or eradication (FAC Section 5321) and may establish and maintain eradication regulations (FAC Section 5322).

The existing law obligates the Secretary to investigate and determine the feasibility of controlling or eradicating pests of limited distribution but establishes discretion with regard to the establishment and maintenance of regulations to achieve this goal. This adoption provides the necessary regulatory authority to eradicate this pest and preventing the spread of a serious insect pest is a mandated statutory goal.

The Department is also obligated to protect the general welfare and economy of the State and to seek to maintain the economic well-being of agriculturally dependent rural communities in this State (FAC Section 401.5). The activities authorized by this amendment of this regulation are preventing the establishment and potential spread of the West Indian fruit fly to uninfested areas of the State; including agriculturally dependent rural communities.

With the eradication of West Indian fruit fly, the California, national and international consumers of California apples, peaches, and pears benefit by having high quality fruit available at lower

cost. It is assumed that any increases in production costs would ultimately be passed on the consumer.

The adoption of this regulation benefits homeowners and community gardens that grow their own host fruits for consumption and host material which is planted as ornamentals in various rural and urban landscapes.

This regulation will benefit the public's general welfare by providing authority for the State to perform detection, control and eradication activities against West Indian fruit fly in Los Angeles County.

The implementation of this regulation will prevent:

- Direct damage to the agricultural industry growing host fruits
- Indirect damage to the agricultural industry growing host fruits do to the implementation of quarantines by other countries and loss of export markets
- Increased production costs to the affected agricultural industries
- Increased pesticide use by the affected agricultural industries
- Increased costs to the consumers of host fruits
- Increased pesticide use by homeowners and others
- The need to implement a State interior quarantine

Assessment

Based upon the Economic Impact Analysis, the Department has made an assessment that the adoption of the regulation would not 1) create or eliminate jobs within California; 2) create new business or eliminate existing businesses within California; or 3) affect the expansion of businesses currently doing business with California. Additionally, the Department has been conducting eradication projects throughout the State for over 30 years without creating or eliminating businesses.

The Department is the only agency which can implement plant quarantines. As required by Government Code Section 11346.5(a)(3)(D), the Department has conducted an evaluation of this regulation and has determined that it is not inconsistent or incompatible with existing state regulations.

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

The Department of Food and Agriculture has determined that the adoption of Section 3591.28 does not impose a mandate on local agencies or school districts and no reimbursement is required under Section 17561 of the Government Code.

The Department also has determined that no savings or increased costs to any state agency, 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, no nondiscretionary costs or savings to local agencies or school districts, and no costs or savings in federal funding to the State will result from the adoption of Section 3591.28.

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

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. The Department's determination that the action will not have a significant statewide adverse economic impact on business was based on the following:

The adoption of Section 3591.28 will provide authority for the Department to conduct eradication activities against West Indian fruit fly in Los Angeles County and there are no known private sector cost impacts.

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 and less burdensome to affected private persons than the proposed action. The Department did not consider any alternatives to the proposed adoption of the regulation because it believes the proposed regulations are the best way to achieve its statutory goals which obligate it to prevent the establishment and spread of pests.

One of the Department's statutory mandates is to prevent the spread of harmful pests. The emergency adoption of this regulation was necessary to prevent the further artificial spread of West Indian fruit fly as part of an existing ongoing West Indian fruit fly eradication project. No other interested party has suggested an alternative to this existing regulation.

Information Relied Upon

The Department relied upon the following studies, reports, and documents in the proposed adoption of subsection 3591.28:

Pest and Damage Record # 190P06060231 California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

"West Indian fruit fly, *Anastrepha obliqua*, Host List, September 22, 2016.

"WIFFLifecycle2016-9-14-16." West Indian Fruit Fly Lifecycle Projection. September 14, 2016.

"Action Plan for Caribbean Fruit Fly *Anastrepha suspensa* (Loew). Revised April 2000. California Department of Food and Agriculture, Plant Health and Pest Prevention Services, Pest Detection/Emergency Projects Branch.