DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3591.13, subsection (a) and subsection (b)

Guava 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 3591.13 is to provide authority to the Department to perform eradication activities against guava fruit fly, *Bactrocera correcta*, in the counties listed in the regulation.

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

Guava fruit fly, *Bactrocera correcta*, is an insect pest which attacks the fruit of various plants including cantaloupe, cherry (sweet and sour), European grape, European prune, gourds, guava, honeydew, jujube, melon, mandarin, mango, nectarine, peach, pummelo, tangerine and various other hosts. 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 are found in soil.

An adult male guava fruit fly was trapped in the Corona area on June 3 (California Pest and Damage Record (CPDR) #SA0P06168025) and in the Eastvale area (CPDR # RS0P062274570) June 9, 2014, of Riverside County. The Department's eradication response extends in a one and one half mile radius surrounding the find sites. The Eastvale find site is close to the border with San Bernardino County, necessitating eradication activities to also be conducted in San Bernardino

County. The detection of these adult guava fruit flies mandates both an intensive delimitation effort to determine the extent of an incipient infestation and prophylactic eradication treatments in these areas of Riverside and San Bernardino counties.

An adult male guava fruit fly was trapped in the Bay Point area on July 9 (CPDR #070P06223539) and on July 10, 2014 (CPDR 070P06223538) of Contra Costa County. The detection of these adult guava fruit flies mandates both an intensive delimitation effort to determine the extent of an incipient infestation and prophylactic eradication treatments in these areas of Contra Costa County.

The guava fruit fly is a methyl eugenol attracted fruit fly. This amendment will provide authority for the state to perform specific detection, control and eradication activities against the guava fruit fly in Contra Costa, Riverside and San Bernardino counties.

The entire counties of Contra Costa, Riverside and San Bernardino are being proposed as an eradication area because they are the political divisions which provide the most workable eradication area boundary for exterminating an incipient infestation of guava fruit fly. Fruit which may have already been moved from the infested area to other portions of the counties and flies which may have already spread naturally from the infested area may have already resulted in small infestations outside the known possibly infested area. To enable detection activities and any necessary rapid treatment of additional small infestations without frequent amendment of the regulation, the entire county should be established as an eradication area.

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. Therefore, it was necessary to amend subsection 3591.13(a) on an emergency basis.

Subsection 3591.13(b) is also now being amended. On July 15, 2014, the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine published a new “Provisional List of Host Plants of guava Fruit fly, *Bactorocera correcta* (Bezzi) (Diptera: Tephritidae).” Therefore it is necessary to amend the existing host list to reflect the hosts listed below:

Scientific Name	**Common Name**
Anacardium occidentale	cashew

Areca catechu	areca palm
Artocarpus chama	chaplasha
Artocarpus integer	chempedak
Averrhoa carambola	carambola, star fruit
Baccaurea racemosa	kapundung, menteng
Benincasa hispida	winter-melon
Bouea gandaria	gandaria, ma prang
Bouea oppositifolia	mariantree, plum-mango
Capparis sepiaria	
Capparis thorelii	cáp thorel
Careya arborea	slow match tree, kumbhi
Careya sphaerica	kra doon
Carica papaya	papaya
Carissa carandas	Bengal-currants, karanda
Citrus maxima	pummelo
Citrus reticulata	mandarin (tangerine)
Clausena lansium	wampi
Coccinia grandis	ivy *g*ourd
Coffea canephora	robusta coffee
Cucumis melo	cantaloupe, honeydew melon
Dimocarpus longan	longan
Dipterocarpus obtusifolius	kok sat, keruing, mai sat
Elaeocarpus hygrophilus (synonym: *madopetalus*)	ma-kok-nam, Spanish plum
Flacourtia indica	governor's plum, Indian- plum
Flacourtia jangomas	greater krekup, Indian-plum
Flueggea virosa	Chinese waterberry, common bushweed
Garcinia dulcis	Claude mangosteen, eggtree
Garcinia xanthochymus	sour mangosteen
Heynea trijuga	buah pasat, kalibaian
Irvingia malayana (Synonym: (*oliveri*)	bok, pau kinjang
Knema angustifolia	horse blood
Lepisanthes fruiticosa	
Luffa aegyptiaca	smooth loofah, sponge gourd
Madhuca longifolia	mahua, mowra-buttertree

Maerua siamensis	
Malpighia emarginata	Barbados or West Indian cherry
Malpighia glabra	aceerola
Mangifera indica	mango
Manilkara zapota	sapodilla
Mimusops elengi	medlar, Spanish-cherry
Muntingia calabura	calabur-tree
	strawberry-tree
Musa x paradisiacal	banana, plantain
Olax scadens	namchai Khrai
Opuntia monacantha	drooping prickly-pear
Phyllanthus acidus	gooseberry-tree
Polyalthia longifolia	cemetery or mast tree
Prunus avium	sweet cherry
Prunus cerasus	sour cherry
Prunus domestica	European prune (plum)
Prunus persica	peach
Prunus persica var. nectarine	nectarine
Prunus salicina	Japanese plum
Psidium guajava	*g*uava
Sandoricum koetjape	red sentol, sentol
Spondias dulcis	golden-apple, makopa
Spondias pinnata	hog-plum
Strychnos potatorum	clearing-nut-tree
Syzygium aqueum	*w*ater apple, watery rose-apple
Syzygium borneense	kelat, kerian
Syzygium cumini	Java plum, jambolana
Syzygium jambos	jambos, rose-apple
Syzygium malaccense	Malay or mountain--apple
Syzygium nervosum	Daly River satin ash
Syzygium samarangense	Java-apple, water-apple
Terminalia bellirica	myrobalan
Terminalia catappa	tropical or Indian almond
Trichosanthes costata	ribbed orange gourd

Trichosanthes cucumerina	annual or club gourd
Vitis vinifera	European grape
Ziziphus jujuba	Chinese-date, jujube
Ziziphus mauritiana	Chinese-date, jujube
Ziziphus nummularia	jujube
Ziziphus oenoplia	jackal jujube

Project Description

DETECTION

1. Detection Trapping

The Department maintains a cooperative state/county trapping program for the various fruit flies to provide early detection of any infestation in the state. Traps are serviced by either county or state personnel and funded by the Department. The program uses two types of traps: the cardboard Jackson sticky trap baited with the attractant methyl eugenol mixed with the pesticide naled (Dibrom® 8 Emulsive), and the McPhail trap, an invaginated glass flask baited with Torula yeast and borax in water. The Jackson trap is strongly attractive to sexually maturing males, while the McPhail trap is attractive to both sexes of the fly. Traps are hung from branches of host trees at specified densities in susceptible areas of California. County or state employees inspect these traps weekly or bi-weekly throughout the year in southern California and from April or May through October or November in northern California.

2. Intensive Trapping

Intensive trapping is triggered after a single fly is caught. Following confirmation of the specimen, trap densities will be increased over an 81-square mile area centered on the detection. Within the next 24 hours, 25 Jackson and McPhail traps are placed in the square mile core around each find. Five Jackson traps are placed in each mile of the remaining delimitation area. Traps in the core will be checked daily during the first week. Traps in the first buffer zone will be serviced every two days; those in the remainder of the delimitation area are checked at least once during the first week. All traps in the delimitation zone will be checked weekly following a week of negative trap catches. Intensive trapping ends after the third complete life cycle following the last fly find. This time period is determined by a

temperature-dependent developmental model run by the Pest Detection/Emergency Projects Branch in Sacramento.

3. Post-Treatment Monitoring

The success of the eradication program is monitored by intensive trapping levels for three life cycles of the fly after the last fly has been detected. If no flies are caught during that time, trap densities return to detection levels.

4. 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. Fruit on properties adjacent to a trap catch may also be inspected. If two or more flies are trapped close to each other, fruit cutting may be extended to all properties within a 200-meter radius of the finds, concentrating on preferred hosts.

TREATMENT

1. Male Attractant Technique

The male attractant technique (MAT) makes use of small amounts of the attractant methyl eugenol mixed with the pesticide naled (Dibrom® Concentrate), and incorporated into a clay matrix (Min-U-Gel® 400) to lure the male flies to bait stations. Flies are killed by the pesticide when they feed at the stations. MAT is applied as five milliliters dollops to utility poles, street trees, and other unpainted surfaces using pressurized tree marking guns. The bait stations are placed six to eight feet above the ground and out of the reach of the public. The project boundaries will be nine-square miles around each site where flies were detected. Application is made to a targeted density of 600 evenly distributed sites in each square mile. Applications are repeated every two weeks for one life cycle if no quarantine is triggered (typically two to three months), and for two life cycles if a quarantine is triggered (typically four to six months). Life cycle durations are dependent on temperature.

2. Foliar Sprays

If evidence that a breeding population exists on a property (i.e., immature stages, mated female, or multiple adults are detected), the foliage of host trees and shrubs within 200 meters of each detection site will be treated with an organic formulation of spinosad bait spray (GF-

120 NF Naturalyte® Fruit Fly Bait) using hand spray or hydraulic spray equipment. Affected properties will be notified in writing at least 48 hours prior to treatment. Following treatment, completion notices are left with the homeowners detailing precautions to take and post-harvest intervals applicable to any fruit on the property. Treatments are repeated at seven to 14 day intervals for one life cycle of the fly (typically two to three months, dependent on temperature).

3. Host Fruit Removal

If evidence that a breeding population exists on a property (i.e., immature stages, mated female, or multiple adults are detected), host removal (fruit stripping) may be used in conjunction with the other treatment options. All host fruit will be removed from all properties within a minimum of a 100-meter 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. Affected properties will be notified in writing at least 48 hours prior to removal of the fruit.

SENSITIVE AREAS

The treatment area will be reviewed through consultation with the California Department of Fish and Wildlife's California Natural Diversity Database for threatened or endangered species. The Department also consults with the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service and the National Marine Fisheries Services when rare and endangered species are located within the treatment area. Mitigation measures will be implemented as needed. The Department will not apply pesticides to bodies of water or undeveloped areas of native vegetation. All treatment will be applied to residential properties, common areas within residential development, non-agricultural commercial properties, and right-of-ways.

PUBLIC INFORMATION

Any resident whose property will be treated via foliar bait sprays or host fruit removal will be notified in writing at least 48 hours in advance of any treatment, in accordance with Food and Agricultural Code Sections 5779 and 5401-5404. Following the treatment, completion notices are left with homeowners detailing precautions to take and post-harvest intervals applicable to any fruit on the property. For MAT applications in public areas, notification is given to the general public via mass media outlets such as newspapers or press releases, and information is posted on the Department website at http://www.cdfa.ca.gov/plant/pdep/treatment/. Information concerning the project will be conveyed directly to concerned local and state political representatives and authorities via letters, emails, and/or

faxes. Press releases, if issued, are prepared by the Department information officer and the county agricultural commissioner, in close coordination with the project leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Economic Impact Analysis

This amendment of the regulation established Contra Costa, Riverside and San Bernardino counties as new guava fruit fly eradication areas and proposes a revised host list. The program estimates the cost at eradicating guava fruit fly from these areas at approximately $121,000 and there are no other public or private sector economic impacts as a result of this action. Based upon the potential impacts noted below and the anticipated benefits this is money well spent.

Eradicating guava fruit fly in California through this action and implementation of this regulation economically benefits:

- The general public
- Homeowners and Community Gardens
- Agricultural industry
- The state's general fund

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. Host fruit includes, but is not limited to: cantaloupe, cherry (sweet and sour), European grape, European prune, gourds, guava, honeydew, jujube, melon, mandarin, mango, nectarine, peach, pummel and tangerine.

California is the number one economic citrus state in the nation, with the USDA putting the value of California citrus at $1,131,851,000 (Federal Register Vol. 71 No.83; published May 1, 2006; pg 25487). A 2002 report by the Arizona State University School of Business indicates that there is at least $825.6 million of direct economic output and another $1.6 billion when all upstream suppliers and downstream retailers are included. This represents over 25,000 direct and indirect employees.

The 2010-2011 California Agricultural Resource Directory placed the approximate gross value of the following hosts at: cantaloupes-$151 million, cherries-$392 million, guavas-$326 million, nectarines-$327 million, peaches-$520 million, plums-$225 million, tangerines-$232 million and wine grapes-$2 billion.

Other listed hosts may be 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 guava fruit fly are favorites for the home gardener and community gardens. Therefore, if guava fruit fly is not quarantined and is allowed to spread homeowners and community gardeners would be negatively impacted.

Potential Impacts to General Fund and Welfare

California's unemployment rate in March 2013 dropped to 9.6 per cent. During the preceding 12 months prior to March 2013, agricultural employment was up by 2.8 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

The Department's broad statutory objectives are 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 also 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 quarantine 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. The amendment of this regulation benefits the growers of the regulated commodities (nursery stock, fruit for domestic use and exports, packing facilities) and the environment (urban landscapes) by having the process for establishing and

removing quarantines to prevent the artificial spread of guava fruit fly should it be introduced as an incipient population.

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 guava fruit fly to uninfested areas of the state including agriculturally dependent rural communities. Historically, guava fruit fly introductions in California have been associated with introductions into the urban environment.

Eradication prior to meeting a quarantine trigger to establish a quarantine for guava fruit fly, benefits California, national and international consumers of California-produced host fruit 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 amendment 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 Department to perform quarantine activities against guava fruit fly in the state.

The implementation of this regulation will prevent:

- Direct damage to the agricultural industry growing host fruits outside the quarantine area.
- 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 an unnecessary federal regulation for the entire state.

California Environmental Quality Act

A Final Programmatic Environmental Impact Report (PEIR), "The Exotic Fruit Fly Eradication Program Utilizing Male Annihilation and Allied Methods," was prepared by the Department as the lead agency under the California Environmental Quality Act (CEQA). The PEIR was assigned State Clearinghouse Number 90021212. The PEIR addresses the potential environmental impacts that would result from implementation of alternatives for the eradication of the guava fruit fly. The PEIR is available upon request from the Department.

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

The Department of Food and Agriculture has determined that subsection 3591.13(a) and subsection 3591.13(b) does not impose a mandate on local agencies or school districts and no reimbursement is required under Section 17561 of the GC.

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 amendment of subsection 3591.13(a) and subsection 3591.13(b).

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 amendment of subsection 3591.13(a) and subsection 3591.13(b) will provide authority for the Department to conduct eradication activities against guava fruit fly in Contra Costa, Riverside and San Bernardino counties and there are no known private sector cost impacts.

Assessment

Based upon the Economic Impact Analysis, the Department has made an assessment that the amendment of the regulation would not 1) create or eliminate jobs within California; 2) create new

business or eliminate existing businesses with California; or 3) affect the expansion of businesses currently doing business with California.

The Department is the only agency which can implement plant quarantines. As required by GC 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.

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.

Information Relied Upon

The Department relied upon the following studies, reports, and documents in the proposed amendment and subsequent amendment of subsection 3591.13(a) and subsection 3591.13(b):

Email dated August 21, 2014, from Debby Tanouye to Stephen Brown.

"Provisional List of Host Plants of guava Fruit fly, *Bactorocera correcta* (Bezzi) (Diptera: Tephritidae)," July 15, 2014, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine.

Email dated July 11, 2014 from John Hooper to Stephen Brown.

"Pest and Damage Record #s SA0P06168025, RS0P062274570, 070P06223539 and 070P06223538," California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

"Action Plan for Methyl Eugenol Attracted Fruit Flies, Including the Oriental Fruit Fly, Bactrocera dorsalis (Henel)," Revised April 2000, California Department of Food and Agriculture, Plant Health and Pest Prevention Services (ten pages).