Department of Food and Agriculture
Proposed Changes in the Regulations
Title 3, California Code of Regulations
Section 3439 subsection (b)
Huanglongbing (HLB) Disease Interior Quarantine
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 to protect the agricultural industry from the movement and spread of injurious plant pests within California (Food and Agricultural Code Section 403).

Specific Purpose and Factual Basis

The specific purpose of Section 3439 is to provide authority to the Department to regulate the movement of hosts and possible carriers of Huanglongbing(HLB) disease (HLB associated bacteria *Candidatus* Liberibacter asiaticus) from the regulated area.

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

Suspect citrus tissue samples for Huanglongbing (HLB) disease (HLB associated bacteria *Candidatus* Liberibacter asiaticus) were collected on July 10, 2017 (PDR # RS0P06614898), in the Riverside area of Riverside county. These suspect samples were confirmed to be HLB on July 25, 2017 from the citrus tissue samples in the Riverside area of Riverside County.

The Agricultural Commissioners of Riverside and San Bernardino Counties requested that a quarantine be established on July 31, 2017. The quarantine establishment adds 94 square miles.

The Department determined there are zero growers of citrus, zero citrus packing houses, two citrus production nurseries, and fifteen retail nurseries that will be impacted.

Suspect citrus tissue samples for Huanglongbing (HLB) disease (HLB associated bacteria *Candidatus* Liberibacter asiaticus) were first collected on March 23, 2012 in the Hacienda Heights area of Los Angeles County. These suspect samples were sent to the United States Department of Agriculture (USDA) for confirmation. On March 30, 2012, the USDA confirmed the first occurrence of HLB in California.

The first known citrus tree infected with the devastating HLB disease was located in an area of the State which has heavy populations of Asian citrus psyllid (ACP). ACP adults are the only mobile vector of this disease in California. It was essential to remove this source of inoculum as soon as possible to prevent any ACP in the area from feeding on it and transmitting the disease elsewhere which may occur with each passing day since the tree was confirmed as positive for HLB. Food and Agricultural Code Section 5762 establishes 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. Food and Agricultural Code Section 5763 establishes that the Department can take summary abatement actions against a “public nuisance” when it is part of an eradication regulation. Otherwise the Department would have to provide standard due process through notice, hearing and the opportunity to appeal the proposed action. It was essential to remove this HLB infected citrus tree in an appropriate biological timeframe to prevent further spread and the Department could only do this by being able to exercise its summary abatement authority which is why this regulation was adopted as an emergency action.

The HLB infected trees requiring a quarantine expansion in this area were removed. However, given the high populations of ACP in the area and that expression of the symptoms of the disease may take up to two years, it is necessary to continue the maintenance of this regulation. In this area, 60 percent of the residential properties have host material. HLB infected ACP may already have transmitted the disease to nearby hosts which are being surveyed for the next two years. Additionally, HLB is a graft transmittable disease.

HLB samples are being taken from any host material showing HLB-like symptoms when they are found anywhere in the State. There are several diseases and nutritional issues which show symptoms similar to HLB in its early stages. These samples are then submitted for laboratory analysis.

By itself, ACP causes only minor cosmetic damage to citrus trees. However, when it becomes infected with (HLB or citrus greening), it becomes a carrier for the disease and can transmit the HLB-associated bacteria from the fourth nymphal instar through the adult stage with a latency period as short as one day or as long as 25 days. HLB was first identified in China in 1919 and is considered to be the most devastating of all citrus diseases. Once infected, there is no cure for HLB infected citrus trees, which decline and die within a few years. Additionally, the fruit produced by infected trees is not suitable for either the fresh market or juice processing due to the significant increase in acidity and bitter taste.

California Code of Regulations, Title 3, Section 3591.21, ACP Eradication Area established the entire State as an eradication area for ACP, one of the vectors of HLB. Now that the disease has been introduced into California, this vector disease complex may occur anywhere in California where host material is grown. Therefore, the entire State is an HLB eradication area.

Both ACP and HLB are federal action quarantine pests subject to interstate and international quarantine restrictions by the USDA. It is imperative that the Department

eradicate any known infestations of HLB host material and HLB infested ACP wherever possible to ensure the devastating damage caused by HLB is limited to the smallest area possible.

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. To protect this source of revenue, California must do everything possible to exclude both HLB-associated pathogens and ACP from the state.

The current study by the University of Florida IFAS Extension calculated and compared the impact of having and not having HLB present in Florida. Their economic analysis concluded HLB had a total impact of $3.64 billion and eliminated 0.08 percent of the total Florida workforce. For 2008 in Florida, the estimated increased production costs for citrus range from $266 to $332 million. There were approximately 600,000 acres of citrus in production in Florida. This translated into increased production costs of $443 to $553 per acre. This estimate is based upon an eight dollar per tree replacement cost. In California, the estimated cost to replace a tree is from $10 to $20. Using a cost of $15 per tree would push the projected production costs up to $450 to $550 per acre. The estimated citrus acreage in 2008 in California is approximately 290,000 acres. The projected increased citrus production costs in California would be at least $130.5 to $159.5 million.

Project Description

This proposed emergency action would establish the quarantine area for HLB by approximately 94 miles. The proposed boundary lines were drawn jointly by USDA, the Department, and the Riverside and San Bernardino County Agricultural Commissioners. The criterion for determining quarantine boundaries around an epicenter was based

upon the information obtained from the USDA. The total proposed quarantine area is now approximately 525 square miles.

The effect of the amendment of this regulation is to implement the State's authority to perform quarantine activities against the HLB Disease in Riverside and San Bernardino Counties. Any quarantine actions undertaken by the Department will be in cooperation and coordination with the USDA and the affected county agricultural commissioner.

Background

The California citrus industry has taken a great deal of responsibility in preparing for the introduction and establishment of HLB-associated bacteria and psyllid vectors. Funding has been allocated towards research on easy, early (i.e., pre-clinical) detection methods (i.e., one primer set to detect all strains rather than primer sets specific for each known strain; host systemic responses) and the identification of HLB-associated bacterial strains, and vector relationships. In addition, a public relations firm has been hired to determine the most effective and efficient methods to educate the general public and make them feel as though they are part of the solution. Industry leaders (research and marketing boards) are involved in procuring federal funds for national research programs in the areas of host plant resistance, etiological agents and variants of HLB, specific native and exotic natural enemies of the insect vectors, and pesticide efficacy and new chemistries.

California citrus industry leaders recognized how Florida was at a loss of ample supplies of HLB-free citrus stock when the pathogen was detected in 2005. As a result, plans are underway to expand the screenhouse facility at the UC Lindcove Research and Extension Center that houses the industry's pathogen-free budwood source to allow for the protection of additional varieties. Other alternatives are being considered to protect valuable citrus propagation sources, germplasm, and breeding material such as isolated and/or protected locations and tissue culture. For long-term survey and management, the industry may pursue the formation of pest control districts.

In Florida and countries where HLB exists, insecticides have been a first line of defense to eliminate the psyllid vector, thereby reducing the spread of the HLB-associated pathogens. Applying insecticide sprays at critical flushing periods in order to kill psyllid nymphs may be an effective method of HLB control. In accordance with integrated pest management principles (IPM), the department will evaluate all appropriate mechanical, biological, cultural and treatment control options which may be efficacious to prevent the artificial spread of HLB infested ACP. If a treatment option is chosen, as insecticide use registrations vary between crops and urban areas and between fruit trees and ornamentals, any treatment program will need to be tailored to each situation.

The implementation of biological control methods (the use of beneficial organisms to attack pest populations) will be an important component of an integrated pest management program to reduce populations of the ACP. As there are no known psyllids in California citrus, exotic natural enemies from the pest's area of origin may need to be imported into the United States or from Florida under strict quarantine protocols. There may be some generalist predators such as the coccinellid beetles that will come into citrus from other habitats but to what extent these would be effective is not known at this time. Natural enemies obtained from commercial sources or mass reared by government or industry personnel can be periodically released into field situations once the psyllid becomes established.

Populations of ACP in Florida are fed upon by many generalist arthropod predators such as spiders, lacewings, hover flies or syrphids, and minute pirate bugs, and are attacked by a number of parasites. The coccinellids exert the greatest amount of control. Two lady beetles, *Olla v-nigrum*, which is native to California and *Harmonia axyridis,* are the most important predators of ACP nymphal stages in Florida. *H. axyridis* was imported from Japan to control the pecan aphid and is established in parts of California. Two tiny parasitic wasps have been imported and released in Florida. *Tamarixia radiata* was imported from Taiwan and Vietnam, and *Diaphorencyrtus aligarhensis* was imported from Taiwan. *Tamaraxia radiata* has already been imported into California and releases of this parasitoid have occurred.

California Environmental Quality Act

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

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

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

The Department of Food and Agriculture has determined that the amendment of Section 3439(b) does not impose a mandate on local agencies or school districts and no reimbursement is required under Section 17561 of the Government Code. All eradication activities are conducted by the Department.

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 Section 3439.

The cost impact of the changes in the regulations on private persons and businesses are estimated to be a pesticide cost of $0.23 per plant. Estimated applicator cost is $1.00-$4.37 per plant depending upon whether the nursery conducts the application or hires a pesticide applicator.

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 Section 3439(b) provides authority for the Department to conduct quarantine activities against HLB in the Riverside and San Bernardino Counties; there are no known private sector cost impacts.

Anticipated Benefits from This Regulatory Action

Existing law, FAC section 407, provides that the Secretary may adopt such regulations as are reasonably necessary to carry out the provisions of this code which she is directed or authorized to administer or enforce.

Existing law, FAC section 5321, provides that the Secretary 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.

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.

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 adoption of this regulation benefits the citrus industries (nursery and fruit) and the environment by establishing eradication authority enabling the removal of HLB infested host material from the environment. By removing the sources of HLB inoculums it is more biologically feasible to confine HLB’s devastating impacts to the smallest area possible.

FAC Section 401.5 states, “the department shall seek to protect the general welfare and economy of the state and seek to maintain the economic well-being of agriculturally dependent rural communities in this state.” The adoption of this regulation is one step to mitigate the spread of HLB through its vector, ACP. This prevents the ACP from naturally spreading ACP and increasing the chances of successfully containing the disease to the smallest area possible.

All eradication activities are conducted by the Department. Except for curry plants, any other host material infected with HLB will die as there is no cure. Homeowners and others will benefit by having this host material removed at no additional cost to them.

The amendment of this regulation benefits over 99 percent of the citrus industries (nursery and fruit) and the environment by having a quarantine program to prevent the natural spread of HLB; thus confining its devastating impacts to the smallest area possible. Almost all of the commercial citrus fruit and nursery stock production is located outside the area known to be infected with HLB.

The California consumers benefit as the fruit from host trees infected with HLB is inedible. Eradicating the existing HLB infestation and the implementation of a statewide program to detect any new HLB infestations in the smallest area possible ensures citrus fruits and other host fruits are available for consumption and at reasonable prices.

This amendment provides the necessary regulatory authority to prevent the artificial spread of a serious disease which is a mandated statutory goal. 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.

Economic Impact Analysis

The referenced study by the University of Florida IFAS Extension calculated and compared the impact of having and not having HLB present in Florida. Their economic analysis concluded HLB had a total impact of $3.64 billion and eliminated 0.8 percent of the total Florida workforce. It is anticipated that HLB would also have a similar devastating impact in California.

Total Statewide Value of the Host Material in the Environment Affected

Currently, all HLB infected citrus has been located in residential areas. Throughout much of California, citrus may be planted in parkways, parks, as street trees, etc. The Department is not aware of any way to estimate the value of host material in the environment.

Total Value of the Damage/Loss of Host Material in the Environment within the HLB Infected Area

The Department does not have a way to assess the potential damage/loss of host material throughout the environment. Most host plants infected with HLB die.

Host Material on Residential Properties

Citrus and its relatives are the most commonly planted trees on residential properties in southern California, with 60 percent of the properties having at least one tree. It is also popular for planting throughout the rest of California where the climate will support it.

Approximate Total Value of Commercial Host Material in the State

Estimated $2.19 billion per year: $2.1 billion for citrus fruit and $28.5 million for citrus nursery stock.

(Reference: John Gilstrap of California Citrus Nursery Board for citrus nursery stock value and *USDA-NASS 2010 data for citrus fruit)*

Per USDA-NASS for 2010, total value of citrus fruit in California: $2,166,395,000

Oranges	$	1,178,778,000	.00
Lemons	$	441,189,000	.00
Tangerines & Mandarins	$	321,012,000	.00
Grapefruit	$	70,786,000	.00
Tangelos	$	5,316,000	.00
Kumquats	$	2,877,000	.00
Limes	$	1,297,000	.00
Citrus, unspecified	$	145,140,000	.00

The actual value is known to be higher than the above as the above does not take into consideration all hosts, just citrus hosts. The Department is not aware of any way to obtain the data for all hosts.

Assessment

The Department has made an assessment that the amendment of this 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.

Alternatives Considered

The Department has determined that no reasonable alternative it considered or that has otherwise been identified would be more effective in carrying out the purpose for which the action is proposed. In addition, the Department has determined that no reasonable alternative would be as effective as or less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

One of the Department's statutory mandates is to prevent the spread of harmful pests. The emergency amendment of this regulation was necessary to prevent the further

artificial spread of HLB as part of an existing ongoing HLB quarantine project. No other interested party has suggested an alternative to this existing regulation.

Information Relied Upon

Letter dated July 31, 2017, from Ruben Arroyo, Riverside County Agricultural Commissioner to Secretary Karen Ross.

Email dated July 31, 2017, from Roberta Willhite, San Bernardino County Agricultural Commissioner to Secretary Karen Ross.

Pest and Damage Record # RS0P06614898, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

Economic Impacts of Citrus Greening (HLB) in Florida, 2006/07-2010/11, University of Florida IFAS Extension.

Federal Register, Vol. 76, No. 81, dated April 27, 2011, Docket No. APHIS-2010-0048, Citrus Canker, Citrus Greening and Asian Citrus Pysllid; Interstate Movement of Regulated Nursery Stock.

“New Pest Response Guidelines, Citrus Greening Disease,” dated June 2, 2008, United States Department of Agriculture, Animal and Plant Health Inspection Service.