DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3435 Subsection (c)

Asian Citrus Psyllid 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. California Food and Agricultural Code 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" and Section 403 states, "the department shall prevent the spread of injurious insect pests."

Specific Purpose and Factual Basis

The specific purpose of Section 3435 is to provide authority to the State to regulate the movement of hosts and possible carriers of Asian citrus pysllid (ACP), *Diaphorina citri*, within or from the regulated area.

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

On June 17, 2010, the United States Department of Agriculture (USDA), Animal and Plant Health Service (APHIS), issued an interim rule "Citrus Greening and Asian Citrus Psyllid; Quarantine and Interstate Movement Regulations, Federal Register, Vol. 75, No. 116."

This federal emergency rulemaking was necessary to prevent the artificial spread of Huanglongbing (HLB), and Asian citrus psyllid (ACP), *Diaphorina citri*, a vector of HLB and it established the areas under quarantine, hosts and restrictions. The rulemaking replaced numerous federal orders which had been issued beginning in September of 2005 (APHIS subsequently issued revised Federal Orders on May, 3, 2006, October 30, 2007, November 2,

2007, January 11, 2008, June 5, 2008, June 24, 2008 and July 14, 2008, August 6, 2008, September 12, 2008, October 1, 2008, April 10, 2009, June 19, 2009, July 29, 2009, November 20, 2009, December 16, 2009 and May 17, 2010.).

On July 14, 2010, the Department's program staff reviewed the new federal rule and determined that the USDA had added four new hosts to the regulation: *Amyris madrensis* (mountain torchwood)*, Choisya arizonica* (Arizonia orange)*, Choisya ternate* (Mexican or mock orange) and *Esenbeckia berlandieri* (Berlandier's jopoy). Additionally, the USDA cannot regulate less than the entire State unless the State has a parallel regulation which regulates the intrastate movement of host material and which is substantially the same as the federal regulation which restricts the interstate movement of host material. To remain substantially the same as the new federal regulation and to prevent the artificial spread of ACP, it was necessary to immediately add these four new hosts to Section 3435, Asian Citrus Psyllid Interior Quarantine.

Additionally, the immediate amendment of this regulation by adding these four hosts was necessary to prevent the spread of the vector to noninfested areas within the State and beyond, thereby avoiding serious environmental impacts and economic harm to the citizens of California by preventing the possible destruction of thousands of acres of citrus groves when HLB is introduced into California.

Under Section 5911 of the California Food and Agricultural Code, the Legislature found:

- That the citrus killing diseases, Huanglongbing, citrus leprosis, citrus variegated chlorosis, and citrus canker, **and the associated vectors** present a clear and present danger to California's citrus industry, as well as to other commodities and plant life.
- The prevention and management of citrus diseases is a matter of public interest. The provisions of this article are enacted for the protection of the citrus industry and in the exercise of the police power of the state for the purpose of protecting the health, peace, safety, and general welfare of the people of this state.
- That the California citrus industry creates one billion eight hundred million dollars ($1,800,000,000) in citrus fruit, another one billion two hundred million dollars ($1,200,000,000) in economic activity, and employs an estimated 25,000 people in the state.

"State of emergency" means the duly proclaimed existence of conditions of disaster or of extreme peril to property within the State caused by such conditions as plant or animal infestation or disease. Government Code Section 8558. Under Section 14.5 of the State of California Emergency Plan, dated July 1, 2009, the Department is responsible for coordinating integrated federal, state and local preparedness for response to, recovery from and mitigation of plant diseases and pests and overseeing the control and eradication of outbreaks of harmful or economically significant plant pests and diseases. The Department is also charged with leading the administration of programs to detect, control and eradicate pests affecting plants.

Effective September 5, 2008, the Department adopted an emergency ACP Interior Quarantine, Section 3435, which added a portion of San Diego County. The Department has amended this regulation several times as ACP was detected in new areas. The purpose of this quarantine is to prevent the artificial spread of ACP. If these four new hosts were not immediately added to the regulation, private parties or the nursery trade may unknowingly be moving ACP on these hosts to uninfested areas; thus undermining the integrity of the Department's efforts to prevent the spread of ACP.

Huanglongbing (HLB), which is associated with several species of the genus *Candidatus* Liberibacter, a phloem-limited, uncultured bacteria is also know as citrus greening (CG). HLB is also referred to as "yellow dragon disease" and "yellow shoot disease." The spread of the CG-associated bacteria is primarily via the insect vectors, the ACP and the African citrus psyllid (*Trioza erytreae*). Once a psyllid acquires the bacterium, it retains it for life. The ACP is of most concern to California citrus growers because it is established in Florida, Louisiana, Texas, Hawaii and Mexico and poses a more immediate threat of introduction from these areas. It also occurs elsewhere, such as Brazil, China, Cuba and the Caribbean. The African citrus psyllid is found in eastern Africa, Saudi Arabia, Yemen, and occasionally in the Canary Islands and Madeira.

Once infected, there is no cure for the CG-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. For these reasons, CG is considered the most devastating of all citrus diseases and is even listed as a "select agent" under federal regulation.

In response to ACP detections in Tijuana, Mexico, the Department adopted an Asian Citrus Pysllid Eradication Area regulation which was effective on July 24, 2008. Since that time, the Department implemented its "ACP Detection, Delimitation, and Treatment Guidelines." These guidelines are based in part on the USDA New Pest Response Guidelines for Citrus Greening Disease (Floyd and Krass 2008) and the Department's Glassy-Winged Sharpshooter Statewide Survey & Delimitation Protocols as of 2002 [Revised March 2008] (CDFA 2008). Additional information came from Grafton-Cardwell et al. (2006). The immediate survey plans have two major components, an Urban and Rural Residential Detection Survey and a Nursery Detection Survey.

The ACP adults are small (three to four mm) with mottled brown wings and typically survive one to two months depending upon temperature. The ACP can transmit the CG-associated bacteria from the fourth nymphal instar through the adult stage with a latent period as short as one day or as long as 25 days. The bacterium is thought to replicate in the psyllid.

The ACP completes its life cycle on *Citrus* species and close rutaceous (citrus) relatives. All life stages (eggs, nymphs, and adults) can be found on the new growth or shoot tips. Adult psyllids typically lay their eggs on the tips of growing shoots or in the crevices of unfolded feather-flush leaves. Eggs are almond-shaped and bright yellow-orange. There are five nymphal instar stages. Adults feed on the underside of leaves. Their feeding behavior is characteristic with their bodies lifted at about a 45^{o} angle from the leaf surface. During feeding, large amounts of plant sap are extracted and subsequently excreted as honeydew or waxy tubules. As this insect feeds, it injects a salivary toxin that causes the developing shoots to be malformed, twisted, curled, or laterally notched. In severe cases, the shoot tip will die. In addition, infested leaves may be covered with white waxy deposits from the psyllids and sooty mold that grows on the large amounts of honeydew excreted by the psyllids. In Florida, the ACP was found before symptoms of CG were observed, and this could certainly occur in California.

ACP is found on four continents and numerous islands. It is widespread in southern China, Southeast Asia, India, Indonesia, and New Guinea. On the African continent, it is limited to Saudi Arabia. In South America, ACP is well established in Brazil and is also found in Paraguay, Venezuela, Bolivia and up through Central America. On the mainland of the United States ACP is well established in Florida and Texas. There are large populations in Hawaii on the islands of

Hawaii, Maui and Oahu. In addition, it is known to occur in over 15 states in Mexico and in Cuba.

The probability is high that a private citizen, tourist or immigrant will introduce the CG-associated bacterium into California through the inadvertent movement of plant material including fruit from their homeland or areas visited to their backyard in a residential area. CG-infected trees do not live long and this scenario may be self-eliminating, at least until the psyllid arrives. One possible explanation for the Florida situation is that numerous backyard citrus trees had been infected with CG but in the absence of a vector, it went unnoticed. Once the ACP became established, it moved the CG-associated bacteria from backyards into commercial groves. The movement of both CG-associated bacteria and the ACP appear to have been accelerated through the movement of *Murraya* and citrus plants through retail nurseries and garden centers, especially of the nationwide chain stores.

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 CG-associated pathogens and ACP from the state.

For 2008 in Florida, the estimated increased production costs for citrus range from $266 to $332 million. There are approximately 600,000 acres of citrus in production in Florida. This translates 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.

In 2007, the California Institute for Specialty Crops determined that California citrus growers absorb production inputs and state mandated costs greater than producers anywhere else in the

nation or the world. To maintain a competitive opportunity, the California citrus industry has to produce a consistently better piece of fruit in greater volume. If the quality of California citrus deteriorates, the California producer loses export opportunity and domestic shelf space. For every 1,000 acres of orange productivity lost, losses of $1.7 million in output and over $3.4 million in total state economic activity, including $1 million in employment income, would result. Should CG-associated bacteria become established throughout California, not just citrus growers but California's economy as a whole would suffer. Further, Federal, State and County regulatory personnel would have increased duties and program costs should survey and eradication activities be implemented. This would further strain an already-impacted State budget.

It should be noted that citrus acreage in Florida has decreased from approximately 858,000 acres in 2005 when HLB was initially detected, to approximately 600,000 acres in 2008. The lost acreage was due to a combination of HLB, citrus canker, hurricanes and real estate investment. However, whatever losses were due to HLB will be even greater in California because most citrus produced is destined for the fresh market, rather than juice as it is in Florida.

The California citrus industry has taken a great deal of responsibility in preparing for the introduction and establishment of CG-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 CG-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 CG, 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 CG-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 industries 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.

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.

The ACP has the capability of causing significant irreparable harm to California's agricultural industry, especially if CG is also introduced. While the Department's compliance with the California Administrative Procedure Act and the California Environmental Quality Act (CEQA) are separate actions, they can be interrelated. "Specific actions necessary to prevent or mitigate an emergency" are exempt from the California Environmental Quality Act (CEQA). Public Resources Code Section 21080(b)(4). "'Emergency means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services." Public Resources Code Section 21060.3.

The effect of the amendment of this regulation will be to implement the State's authority to regulate these four additional hosts under the current State quarantine regulation for ACP. Any quarantine actions undertaken by the Department will be in cooperation and coordination with the USDA and the affected county agricultural commissioners. It was immediately necessary to implement quarantine actions in order to prevent the artificial spread of ACP to the uninfested areas of California on these new hosts. Therefore, it was necessary to amend this regulation as an emergency action.

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

The Department of Food and Agriculture has determined that the adoption and subsequent amendments of Section 3435 do not impose a mandate on local agencies or school districts and no reimbursement is required under Section 17561 of the Government Code. Each county commissioner in a regulated county requested the State to implement the regulated areas in their county.

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 and subsequent amendments of Section 3435.

The cost impact of the changes in the regulations on private persons and businesses are expected to be insignificant.

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:

There are approximately 11,500 licensed nurseries in the entire State. The United States Department of Agriculture's federal rule for ACP only restricts the interstate movement of host commodities produced in portions of the California counties of Imperial, Los Angeles, Orange, Riverside and San Diego. The emergency amendment to Section 3435 was necessary to ensure the State's regulation continued to be substantially the same as the federal order. If the State's regulation is not substantially the same as the federal order, the USDA cannot regulate less than the entire State. Any nursery within the existing regulated area cannot ship any host material outside the regulated area. The addition of these for hosts does not significantly impact these businesses which are already regulated.

Based on the preceding information, it was determined that the amendment of Section 3435, will not have a significant adverse economic impact on California businesses.

Assessment

The Department has made an assessment that the repeal 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.

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 adoption of Section 3435:

Email dated July 14, 2010, from Gary Leslie to Stephen Brown.

“Citrus Greening and Asian Citrus Psyllid; Quarantine and Interstate Movement Regulations,” June 17, 2010, Federal Register, Vol. 75, No. 116.

“California Citrus Industry Jockeying for Effective Psyllid, Greening Control,” May 2, 2009, Western Farm Press.

“Expansion of the Citrus Greening Federal Quarantine Area Due to the Presence of the Disease in the Commonwealth of Puerto Rico,” November 20, 2009, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine.

“2008 California Citrus Acreage Report,” November 21, 2008, United States Department of Agriculture National Agricultural Statistics Service.

“Occurrence and Spread of *Candidatus* Liberibacter Asiaticus, the Causal Agent of Huanglongbing Disease of Citrus in Malaysia,” 2008, Research Journal of Agriculture and Biological Sciences.

“Detection of ‘*Candidatus* Liberibacter asiaticus’ in *Diaphorina citri* and its Importance in the Management of Citrus Huanglongbing in Florida,” 2008, The American Phytopathological Society.

“New Pest Response Guidelines,” June 2, 2008, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine.

“Citrus Huanglongbing: The Pathogen and its Impact,” September 6, 2007, The American Phytopathological Society.

“Citrus Greening: Questions and Answers,” March 2007, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine.