

FINDING OF EMERGENCY

The Secretary of the Department of Food and Agriculture determined that an emergency exists; the light brown apple moth (*Epiphyas postvittana*), a voracious indiscriminate plant feeder, has been detected in Alameda, Contra Costa, Monterey, Sacramento, San Benito, Santa Clara and Solano counties. It is believed these new infestations may be associated with the natural spread of LBAM. While the natural spread of LBAM from areas where it is not under eradication should be anticipated, exactly when and where it occurs cannot be accurately predicted. The Department is proposing an emergency amendment of the regulation to expand existing quarantine and regulated areas in these affected counties.

The LBAM has the capability of causing significant irreparable harm to California's agricultural industry and some adverse environmental impacts. The spread of LBAM will likely result in loss of revenue and the possible loss of jobs within California at a time when the State's budget is already under stress. In 10 of California's affected counties, it is estimated that LBAM could cause \$160 to \$640 million in losses. These estimates were derived from the agricultural impacts in Australia and New Zealand. This estimate does not include economic costs to the nursery industry nor to other significant host crops in California such as apricots, avocados, kiwifruit, peaches, etc., grown in other counties. More information regarding potential economic impact in California may be found in the environmental assessment prepared by USDA at www.aphis.usda.gov/plant_health/ea/downloads/lbam_ea_sc.pdf.

The Secretary amended this regulation pursuant to the authority in Food and Agricultural Code (FAC) Section 407, "the director may adopt such regulations as are reasonably necessary to carry out the provisions of this code which he is directed or authorized to administer or enforce," and FAC Section 5322, "the director may establish, maintain, and enforce quarantine, eradication, and such other regulations as are in his or her opinion necessary to circumscribe and exterminate or prevent the spread of any pest which is described in FAC Section 5321."

Additionally, 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” and Section 403 states, “the department shall prevent the spread of injurious insect pests.”

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.

Emergency Rulemaking Procedures

In this document the Department is providing the necessary specific facts demonstrating the existence of an emergency and the need for immediate action to prevent serious harm to the general welfare of the citizens of California, pursuant to Government Code Section 11346.1(b)(2).

Since the Department does not have a record of any person requesting a notice of regulatory actions under Government Code Section 11346.4(a)(1), the provisions of Government Code Section 11346.1(a)(2) do not appear to be applicable to this emergency action.

The information contained within this finding of emergency also meets the requirements of Government Code Sections 11346.1 and 11346.5.

California Environmental Quality Act

A Programmatic Environmental Impact Report (PEIR) was prepared by the Department as the lead agency under the California Environmental Quality Act (CEQA). The PEIR addresses the potential environmental impacts that would result from implementation of alternatives for the eradication of the light brown apple moth (LBAM) (*Epiphyas postvittana*). The PEIR may be accessed at the following website:

<http://www.cdfa.ca.gov/phpps/PDEP/lbam/envimpactrpt.html>

Additionally, on March 22, 2010, the Department filed a "Notice of Determination that it was compliant with the provisions of CEQA. This document and the CEQA mandated findings for LBAM may be accessed at the following website:

http://www.cdfa.ca.gov/phpps/PDEP/lbam/lbam_main.html

Project Description

Like all quarantine actions, the intended effect of this quarantine is to prevent the human-assisted artificial spread of the pest. Artificial spread, such as moths hitchhiking on equipment, clothing or the movement of infested plant material has the potential to spread the pest rapidly throughout the state, whereas the natural spread of the pest is gradual.

This proposed emergency action will expand the regulated and quarantine areas for LBAM by including the new detection sites as epicenters and a buffer zone which extends approximately 1.5 miles in a radius surrounding the epicenters. A buffer zone is necessary because the moth can spread naturally (as well as being spread artificially on infested hosts). The proposed boundary lines were drawn jointly by the United States Department of Agriculture (USDA), the California Department of Food and Agriculture, and the affected county agricultural commissioners. The criteria for determining quarantine boundaries around an epicenter was based upon the information obtained from the LBAM Technical Working Group and which was released in October of 2007 as the USDA's regulatory protocol. Under the regulatory protocol, an epicenter is defined as an egg, larva or pupa found in the environment, or two male moths trapped within three miles of one another and within one life cycle or one moth trapped if delimitation traps are not deployed.

Under this proposal, a portion of the contiguous regulated area in the counties of Alameda, Contra Costa, Monterey and Sonoma counties would be expanded by approximately 205 square miles. New quarantine areas would be established in the South Sacramento area of Sacramento County of approximately 16 square miles and in the South Park area of San

Diego County of approximately 10 square miles. The quarantine area in the Long Beach area of Los Angeles County would be expanded by approximately one square mile. The proposed area is considered the minimum area surrounding the initial detection sites which should be regulated to prevent artificial spread of LBAM to noninfested areas. This would result in a total of approximately 5,147 square miles under regulation within the State. The effect of this proposed change to the regulation will be to establish authority for the State to perform quarantine activities against LBAM (*Epiphyas postvittana*) in these additional areas.

Any quarantine actions undertaken by the Department will be in cooperation and coordination with the USDA and the affected county agricultural commissioners. It is immediately necessary to implement quarantine actions in order to prevent the artificial spread of LBAM to the noninfested areas of California and to remain in compliance with the April 6, 2010 federal order.

The existing regulation requires that for movement within the quarantine area, or from the regulated or quarantine areas, nurseries (includes cut flower producers) or the growing grounds must be certified free from LBAM. To achieve this, nurseries must implement an integrated pest management (IPM) program. One grower may use a mating disruption program, another may use a mating disruption program plus a pesticide, another may use an organic pesticide only, etc. The Department does not specify what constitutes an appropriate IPM program. It has established a performance standard. Whatever IPM program the producer uses with success to keep the nursery stock free from LBAM is acceptable.

Fruits and vegetables may move from community gardens and host crop producers if inspected and found free from LBAM. The Department does not mandate any specified treatments. As long as the harvested fruits and vegetables are free from LBAM life stages, the product is free to move. The Department has inspectors that perform the required inspections at the affected industry's natural control points (field or cold storage facility) with no costs.

Cold storage facilities are required to safeguard harvested fruits and vegetables from becoming infested by the adult LBAM female laying eggs on it. The female LBAM only flies at night so there are minimum safeguarding actions needed.

Landscape maintenance companies and green waste companies that handle green waste must move such material in a manner that precludes the escape of any possible live life stages of LBAM. Green waste may move within or from the quarantine area if it is certified as originated from an uninfested area or inspected or treated by an authorized agricultural official or under the terms of a permit issued by the Department. Approved methods of treatment include maintaining the green waste completely enclosed in containers or plastic bags, or completely covered with fine mesh or tarps, or moved in an enclosed truck or trailer or chipped and shredded on site prior to movement to an authorized disposal site.

Evidence of an Emergency

LBAM causes economic damage from feeding by caterpillars, which may:

- destroy, stunt or deform young seedlings;
- spoil the appearance of ornamental and native plants; and
- injure deciduous fruit-tree crops, citrus and grapes.

Under the April 6, 2010 federal order, all fresh floral and nursery products are listed as hosts of LBAM. The value of the State's floral and nursery products combined for 2008/2009 was approximately \$3.7 billion. Currently, the majority of California's fresh floral and nursery industry is not located in an infested area and is not under State regulation for LBAM. If the Department cannot complete this rulemaking action as an emergency action and be in compliance with the existing federal order, the USDA may regulate the entire State. This would unnecessarily impact both interstate commerce and international trade in those areas which are not infested with LBAM.

Wherever LBAM occurs in association with vineyards, it is considered to be a very important agricultural pest. Unless properly managed, LBAM causes substantial risks to crop yield and

quality by causing both direct and indirect damage. Emerging larvae in the spring may feed upon both the flowers and newly set fruitlets causing a direct loss in yield. Later in the year, LBAM larvae feeding on maturing fruit can cause indirect loss by introducing botrytis infections into the grape bunches. As an example, in 1992 in Australia, 70,000 larvae per hectare were documented and caused a loss of 4.7 tons of Chardonnay fruit. Damage in the 1992-93 Chardonnay season at Coonawarra, southern Australia, cost \$2,000 per hectare.

California's 844,000 acres of grapes (526,000 acres of wine grape, 93,000 acres of table grape and 225,000 acres of raisin-type grapes) leads the nation in grape production with 89% of the total. In 2007, grapes were the number two commodity in the state, based on a dollar value of \$3.08 billion dollars, and were among the top three commodities produced in 15 California counties. The total retail value of California grape products was valued at \$16.5 billion in 2006.

In South Australia, LBAM is also a significant pest of apricots and can attack other stone fruit. Peaches are also damaged by feeding that occurs on the shoots and fruit. In 2008, California had 11,000 acres of apricots valued at \$34,404,000 and 87,000 acres of peaches (nectarine, clingstone and freestone) valued at \$402 million.

The first generation (in spring) causes the most damage to apples while the second generation damages fruit harvested later in the season. Some varieties of apples such as 'Sturmer Pippin' (an early variety), 'Granny Smith' and 'Fuji' (late varieties) can have up to 20 percent damage while severe attacks can damage up to 75 percent of a crop.

In Australia, when insecticides are not applied, typically between five to 20 percent of fruit is damaged, but this can exceed 30 percent. In New Zealand, damage to unsprayed crops commonly reaches 50 percent (Wearing et al., 1991).

In 2008, California had 19,500 acres of apples valued at \$109,708,000.

Exact economic impacts on international and domestic exports are uncertain at this time. California is the nation's leader in agricultural exports and in 2003 shipped more than \$7.2 billion in both food and agricultural commodities around the world. Some countries have specific regulations against this pest, and many others consider it a regulated pest that would not be knowingly allowed to enter. Additional measures, such as preharvest treatments and postharvest disinfestation, would likely have to be taken to ensure that shipments to these countries are free from LBAM. In addition, LBAM is an exotic pest, i.e., it is not established in the continental United States, and therefore other states within the United States would likely impose restrictions on the movement of potentially infested fruits, vegetables and nursery stock. These restrictions could severely impact the domestic marketing of California agricultural products.

Additionally, the USDA cannot regulate less than the entire State unless the State has a quarantine regulation which is substantially the same as what the existing federal order requires. Should the USDA quarantine all of California, it would have serious repercussions on our ability to export any LBAM host material to other states or countries

The Department uses Geographic Information Systems (GIS) mapping programs to plot locations of all the detections of LBAM. As a result, based upon the criteria contained in the USDA regulatory protocol, the Department determined that there are new infestations of LBAM requiring the expansion of regulated areas.

On August 23, 2010 (PDR # 1628603), an adult male LBAM was detected in the Livermore area of Alameda County. The Department does not have the resources to delimit this detection. This meets the regulatory protocol for expanding the regulated area in this area of Alameda County.

On September 13, 2010 (PDR #s 1645177 and 1645179), adult male LBAM were trapped in the Oakley area of Contra Costa County. These LBAM were trapped within three miles of each other and within one life cycle. This meets the regulatory protocol for expanding the

regulated area in this area of Contra Costa County.

On September 13, 2010 (PDR # 5057619), an adult male LBAM was trapped in the Soledad area of Monterey County. The Department does not have the resources to delimit this detection. This detection meets the regulatory protocol for expanding the regulated area in this area of Monterey County.

On August 25 (PDR #1496044) and September 1 (PDR #1496347), 2010, adult male LBAM were detected in the Walnut Grove area of Sacramento County. These LBAM were trapped within three miles of each other and within one life cycle. This detection meets the regulatory protocol for expanding the quarantine area in this area of Sacramento County.

On July 27 (PDR #s 5068729 and 5068732) and August 23 (PDR #5069109), 2010, adult male LBAM were detected in the San Juan Batista area of San Benito County. These LBAM were trapped within three miles of each other and within one life cycle. These detections meet the regulatory protocol for expanding the regulated area in this area of San Benito County.

On August 11 (PDR #5069005) and 16 (PDR #5069027), 2010, adult male LBAM were detected in the Morgan Hill area of Santa Clara County. These LBAM were trapped within three miles of each other and within one life cycle. These detections meet the regulatory protocol for expanding the regulated area in this area of Santa Clara County.

On August 3 (PDR #1626014), 2010, an adult male LBAM was detected in the Suisun City area of Solano County. The Department does not have the resources to delimit this detection. This meets the regulatory protocol for expanding the regulated area in this area of Solano County.

To prevent the spread of the LBAM to non-infested areas in order to protect California's agricultural industry and environment, it is necessary to begin quarantine activities against the

LBAM immediately in these new areas. Therefore, it is necessary to amend this regulation as an emergency action.

Background

The light brown apple moth (*Epiphyas postvittana*) was unexpectedly detected in California (and the US) on February 27, 2007 in Alameda County and on March 7, 2007, the light brown apple moth (LBAM) was first detected in Contra Costa County. Through the deployment of delimitation traps, numerous additional adult male moths were trapped in both counties. As a result, the Department first adopted an emergency regulation, Section 3591.20, Light Brown Apple Moth Eradication Area, which became effective on March 21, 2007. The Department also subsequently adopted Section 3434, Light Brown Apple Moth Interior Quarantine (effective April 20, 2007). The Department continues to deploy both detection and delimitation traps as appropriate, throughout the State.

The United States Department of Agriculture (USDA) confirmed that LBAM would remain a federal action pest and on May 2, 2007, issued a federal order regulating the interstate movement of host material from the infested areas of California and all of Hawaii. Subsequent federal orders were issued on September 17 and November 20, 2007, April 28, 2008, July 10 and September 9, 2009 and April 6, 2010.

All of these federal orders may be found at the following website:

http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/regulations.shtml

In late October 2007, the USDA established a new regulatory protocol which was distributed to county agricultural commissioners as “Phytosanitary Advisory No. 31-2007 and its attachment.” This regulatory protocol was adopted based upon the recommendations of the LBAM Technical Working Group (TWG). The purpose of the protocol is to determine when it is appropriate to initiate or remove interstate regulatory restrictions pertaining to LBAM in response to new detections or the elimination of incipient LBAM populations. A key component of this regulatory protocol is the revision of the triggers for initiating a regulated area. Under the recommendations of the TWG, a single detection (trapping) of a male LBAM

more than three miles from another male LBAM, no longer warrants a quarantine response. This is contingent upon the deployment of LBAM traps at the appropriate delimitation levels in buffer areas surrounding the single detection. Prior to this regulatory protocol, the detection of a single LBAM was the agreed upon trigger for initiating a quarantine area. The Department reviewed and concurs with this new protocol and is applying the same criteria contained in it to initiate or remove LBAM regulatory restrictions pertaining to the intrastate movement of regulated articles and commodities.

Unless the State's LBAM regulation is substantially the same as the latest LBAM federal order, the USDA cannot regulate less than the entire State. As an example, on January 11, 2008, the USDA issued a Federal Order that expanded its citrus greening (CG) quarantine to encompass the entire State of Florida. This action was a result of the USDA confirming detections of CG in two new Florida counties: Lake and Hernando. Following discussions with the State of Florida, the USDA determined that parallel quarantine actions proposed by the State of Florida were not adequate and, therefore, it was necessary to impose statewide interstate restrictions on the movement of all live host plants and host plant parts from Florida.

LBAM is a highly polyphagous pest that attacks a wide number of fruits and other plants. Hosts occurring in California that are of significant agricultural or environmental concern include, but are not limited to: alder, alfalfa, apple, apricot, avocado, blueberry, blackberry, broccoli, cabbage, camellia, cauliflower, ceanothus, chrysanthemum, citrus, clematis, clover, columbine, cottonwood, currant, cypress, dahlia, ferns, fir, geranium, grape, hawthorn, honeysuckle, kiwi, lupine, madrone, mint, oak, peach, pear, peppers, persimmon, poplar, potato, raspberry, rhododendron, rose, sage, spruce, strawberry, walnut and willow. It is an insect species that feeds upon over 250 species of native and ornamental plants. The general area of infestation contains numerous sensitive plant species and habitats. There is a threat for adverse consequences to some of these sensitive species if LBAM becomes permanently established in California.

Prior to the infestations here, this species had a relatively restricted geographic distribution, being found only in portions of Europe, Oceania and Hawaii. The pest is native to Australia but has successfully invaded other countries. The likelihood and consequences of establishment by LBAM have been evaluated in pathway initiated risk assessments. LBAM was considered highly likely of becoming established in the United States and the consequences of its establishment for United States agricultural and natural ecosystems were judged to be severe. The United States Department of Agriculture, Animal Plant and Health Inspection Service (USDA, APHIS) estimated that approximately 80 percent of the continental United States may be climatically suitable for LBAM.

In its native habitat of Australia, LBAM generally completes three generations annually. More than three generations can be completed if temperatures and host plants are favorable. In southeastern Australia where it is warmer, four generations can be completed. In contrast, two generations occur in Tasmania, New Zealand and in Great Britain. In Australia, generations do not overlap, but they do in Great Britain. As the population builds, LBAM is more abundant during the second generation. Therefore, the second generation causes the most economic damage as larvae move from foliage to fruit. The size of the third generation is typically smaller than the previous two due to leaf fall (including attached larvae) as temperatures decline in autumn. LBAM does not diapause and its continued development is slowed under cold winter temperatures. In cold climates, the pest overwinters as larvae. Because LBAM causes damage in a wide range of climate types in Australia, pest status is not dictated by climate.

Based upon losses in Australia, annual losses in California are expected to be much higher as the agricultural sector is larger and more variable. Additionally, the spread of LBAM will cause economic damage to California's export markets due to the implementation of quarantines by foreign and state governments.

Where it occurs, LBAM is difficult to control with sprays because of its leaf-rolling ability, and

because there is evidence of resistance due to overuse of the same insecticides. Conifers are damaged by needle-tying and chewing. Larvae have been found feeding near apices of Bishop Pine seedlings where they spin needles down against the stem and bore into the main stem from the terminal bud. LBAM constructs typical leaf rolls (nests) by webbing together leaves, a bud and one or more leaves, leaves to a fruit, or by folding and webbing individual mature leaves. During the fruiting season, they also make nests among clusters of fruits, such as grapes, damaging the surface and sometimes tunneling into the fruits. During severe outbreaks, damage to fruit may be as high as 85 percent.

Egg masses are most likely to be found on leaves. The larvae are most likely to be found near the calyx or in the endocarp; larvae may also create “irregular brown areas, round pits, or scars” on the surface of a fruit. Larvae may also be found inside furled leaves, and adults may occasionally be found on the lower leaf surface.

LBAM is an actionable pest for the USDA, APHIS and requires the Australian Quarantine and Inspection Service to take corrective actions to prevent this pest from being associated with apples, citrus, pear fruits and other host commodities being exported to the United States. Host fruit exported from New Zealand faces similar restrictions by USDA, APHIS and the New Zealand Ministry of Forestry and Fisheries is responsible for any corrective actions at origin. Any host commodity arriving in the United States that is infested with or contaminated by LBAM is issued a Federal Emergency Action Notice and must be either destroyed, reexported or undergo an appropriate quarantine treatment prior to its release into the United States commerce. Canada and Japan also treat LBAM as a quarantine action pest. The People’s Republic of China requires all host fruit imported to originate from orchards that are free from LBAM.

The Department also relied upon the following documents for this proposed rulemaking action:

Federal Domestic Quarantine Order, *Epiphyas postvittana*, (Light Brown Apple Moth), dated April 6, 2010.

For Information/Action, DA-2008-02, dated January 11, 2008, to State and Territory Agricultural Regulatory Officials, from Rebecca Bech and its attachments.

“Pest Profile,” updated March 16, 2007, Kevin Hoffman, California Department of Food and Agriculture.

“Lightbrown apple moth, Exotic host plants-common,” printed March 13, 2007, <http://www.hortnet.co.nz/key/stone/info/hostplnt/iba-exo2.htm>.

“Lightbrown Apple Moth Life Cycle,” printed March 12, 2007, HortFACT.

“Light Brown Apple Moth, *Epiphyas postvittana*,” printed March 12, 2007, Government of South Australia.

“Light brown apple moth development calculator,” printed March 12, 2007, NSW Department of Primary Industries.

“Light brown apple moth in citrus,” June 2006, Primefact Number: 216.

“Botrytis and the Light Brown Apple Moth,” undated, Bayer CropScience.

“Light Brown Apple Moth Procedures for USA Citrus Export Program,” updated June 2006.

“China Export Quarantine IPM Guide,” January 2006, Steven Falivene, NSW, DPI.

“Mini Risk Assessment, Light Brown Apple Moth, *Epiphyas postvittana* (Walker), [Lepidoptera: Tortricidae], September 21, 2003, Department of Entomology, University of Minnesota.

“Pests and Pest Management, Impact on Climate Change,” February 2000, Dr. Robert W. Sutherst, CSIRO Entomology.

Letter dated August 4, 2010, from Robert G. Atkins to A.G. Kawamura.

Letter dated June 16, 2010 from Frank Carl to A.G. Kawamura.

Letter dated August 3, 2009, from Robert Lilley to A.G. Kawamura.

Letter dated July 13, 2009, from Scott Hudson to A.G. Kawamura.

Letter dated May 19, 2009, from Rick Landon to A.G. Kawamura.

Letter dated April 28, 2008, from Lisa Correia to A.G. Kawamura.

Letter dated March 17, 2008, from William D. Gillette to A.G. Kawamura.

Letter dated July 12, 2007, from Kurt E. Floren to A.G. Kawamura.

Letter dated July 11, 2007, from Jearl D. Howard to A.G. Kawamura.

Letter dated June 1, 2007, from David R. Whitmer to A.G. Kawamura.

Letter dated May 25, 2007, from Ken Corbishley to A.G. Kawamura.

Letter dated May 24, 2007, from Paul J. Matulich to A.G. Kawamura.

Letter dated May 4, 2007, from Eric Lauritzen to A.G. Kawamura.

Letter dated May 4, 2007, from Gail M. Raabe to A.G. Kawamura.

Letter dated April 11, 2007, from Greg Van Wassenhove to A.G. Kawamura.

Letter dated April 4, 2007, from Scott T. Paulsen to A.G. Kawamura.

Letter dated April 3, 2007, from Edward P. Meyer to A.G. Kawamura.

Letter dated April 2, 2007, from Dennis F. Bray to A.G. Kawamura.

Letter dated March 30, 2007, from Stacy Carlsen to A.G. Kawamura.

Authority and Reference Citations:

Authority: Sections 407 and 5322, Food and Agricultural Code.

Reference: Sections 407 and 5322, Food and Agricultural Code.

Informative Digest

Existing law 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 (FAC Section 5321).

Existing law also provides that the Secretary may establish, maintain and enforce quarantine, eradication and other such regulations as he deems necessary to protect the agricultural industry from the introduction and spread of pests (Food and Agricultural Code, Sections 401, 403, 407 and 5322).

Section 3434. Light Brown Apple Moth Interior Quarantine.

A portion of the contiguous regulated area in the counties of Alameda, Contra Costa, Monterey, San Benito, Santa Clara and Solano counties would be expanded by approximately 56 square miles. The quarantine area the Ryer Island area of Sacramento

County would expand by approximately six square miles and in the Fairfield area of Solano County by approximately 13 square miles. The proposed area is considered the minimum area surrounding the initial detection sites which should be regulated to prevent artificial spread of LBAM to noninfested areas. This would result in a total of approximately 5,222 square miles under regulation within the State. The effect of this proposed change to the regulation will be to establish authority for the State to perform quarantine activities against LBAM (*Epiphyas postvittana*) in these additional areas.

Mandate on Local Agencies or School Districts

The Department of Food and Agriculture has determined that Section 3434 does not impose a mandate on local agencies or school districts, except that an agricultural commissioner of a county under quarantine has a duty to enforce it. No reimbursement is required under Section 17561 of the Government Code because the affected county agricultural commissioners requested that these changes to the regulation be made.

Cost Estimate

The Department has also determined that the regulation will involve no additional costs or savings to any state agency because initial funds for state costs are already appropriated, no nondiscretionary costs or savings to local agencies or school districts, no reimbursable savings to local agencies or costs or savings to school districts under Section 17561 of the Government Code and no costs or savings in federal funding to the State.