DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3434, Subsection (b) and (c)

Light Brown Apple Moth 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.

Specific Purpose and Factual Basis

The specific purpose of Section 3434 is to provide authority to the State to regulate the movement of hosts and possible carriers of light brown apple moth (LBAM), *Epiphyas postvittana*, within or from the regulated areas.

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

Emergency Amendment Effective September 28, 2007

On August 6 and 8, 2007, LBAM were trapped in the Fremont area of Alameda County. On August 28, 2007, an LBAM was trapped in the East Bay Regional Park located in Alameda County. On August 30, 2007, three LBAM were trapped, two in the Union City area and one in the San Leandro area of Alameda County. On September 4, 2007, an LBAM was trapped in the San Pablo area of Contra Costa County. On August 6, 2007, an LBAM was trapped in the Carmel-By-The-Sea area of Monterey County. On August 21, 2007, an LBAM was trapped in the Napa area of Napa County. On August 9, 2007, an LBAM was trapped in the San Francisco area of San Francisco County. On July 30 (Colma area), August 4, (South San Francisco) and August 25, 2007, LBAM were trapped in San Mateo County. On September 5, 2007, an LBAM was trapped in the Sunnyvale area of Santa Clara County. On August 15, 2007, an adult LBAM

was trapped in cropland in the Santa Cruz area of Santa Cruz County. On August 6, 2007, an LBAM was trapped in the Vallejo area of Solano County.

The amendments of subsection 3434(b) expanded the Fremont area of Alameda County by approximately 23 square miles; the contiguous regulated area of San Mateo and Santa Clara counties by approximately 21 square miles; the contiguous regulated area of Monterey and Santa Cruz counties by approximately 15 square miles and the Vallejo area of Solano County by approximately three miles. A new contiguous regulated area was established and consists of Alameda, Contra Costa, Marin, San Francisco and San Mateo counties due to an expansion of approximately 97 square miles in these counties. Additionally, two new independent areas were established; approximately 12 square miles in the south Napa area of Napa County and approximately 16 square miles in the Pescadero area of San Mateo County. Approximately 159 square miles were added to the regulation for a total regulated area of approximately 1,208 square miles.

On September 17, 2007, another federal order was issued regulating the entire counties of Los Angeles, Napa and Solano and exempting certain commercially-produced fruits and vegetables from regulation. As a result, the Department also amended subsection3434(c) to exempt certain commercially-produced fruits and vegetables from regulation. The Department exempted the following commercially-produced fruits and vegetables: artichoke (globe), asparagus, beets without tops, bok choy, broccoli, brussel sprouts, carrots without tops, celery, cabbage, cauliflower, collard greens, kale, kohlrabi, lettuce (head and leaf), olive, parsley, peppers, potato, pumpkin, radish without tops, spinach, squash, tomato and walnuts.

The effect of this regulation was to provide authority for the State to perform quarantine activities against LBAM (*Epiphyas postvittana*) in these additional areas and deregulate certain commercially-produced fruits and vegetables.

The existing text for the Fremont area of Alameda County under subsection 3434(b)(1) was modified.

The existing text for the contiguous regulated area in Alameda and Contra Costa counties under subsection 3434(b)(2)(B) was deleted and subsection 3434(b)(2)(A) became subsection 3434(b)(2).

New text was added under subsection 3434(b)(3) and established a contiguous regulated area for Alameda, Contra Costa, Marin, San Francisco and San Mateo counties.

The previous existing text under subsection 3434(b)(3) became subsection 3434(b)(4).

The existing subsection 3434(b)(4) was renumbered and became subsection 3434(b)(5).

The existing subsection 3434(b)(5) was renumbered and became subsection 3434(b)(6).

The existing subsection 3434(b)(6) was deleted.

The existing text for the contiguous regulated area of Monterey and Santa Cruz counties under subsection 3434(b)(8) was modified.

The existing text for the Napa regulated area of Napa County under subsection 3434(b)(9) became a new subsection 3434(b)(9)(A), Napa (North). A new subsection 3434(b)(9)(A), Napa (South) was established.

The existing text for the Belmont and Millbrae contiguous regulated area of San Mateo County under subsection 3434(b)(10)(A) was deleted. The existing subsection 3434(b)(10)(B) was renumbered and became subsection 3434(b)(10)(A). A new subsection 3434(b)(10)(B), for the Pescadero area was established.

The existing text for the Cupertino regulated area of Santa Clara County under subsection 3434(b)(11)(A) was deleted. The existing subsection 3434(b)(11)(B) was renumbered and became subsection 3434(b)(11).

The existing text for the contiguous regulated area of San Mateo and Santa Clara counties under subsection 3434(b)(12) was modified.

The existing text for the Vallejo regulated area of Solano County under subsection 3434(b)(13) was modified.

The existing text for the articles and commodities covered subsection 3434(c)(4) was modified.

Emergency Amendment Effective November 8, 2007

On August 15, 2007, an LBAM was trapped in the Boulder Creek area of Santa Cruz County. On September 15, 2007, two LBAM were trapped in the Half Moon Bay area of San Mateo County. On October 4 and October 10, 2007, an LBAM was trapped in the Aromas area of Monterey County. On October 17, 2007, an LBAM was trapped in the Pescadero area of San Mateo County. On October 19, 2007, an LBAM was trapped in the Watsonville area of Santa Cruz County. The detection of LBAM in these areas was indicative of additional incipient infestations necessitating the expansion of the affected regulated areas.

The amendments of subsection 3434(b) expanded the Half Moon Bay (approximately four square miles) and Pescadero (approximately seven square miles) areas of San Mateo County; and, the contiguous regulated area of Monterey and Santa Cruz counties by approximately 36 square miles. Approximately 47 total square miles were added to the current regulated area for a total regulated area of approximately 1,255 square miles.

The effect of this regulation will be to provide authority for the State to perform quarantine activities against LBAM (*Epiphyas postvittana*) in these additional areas.

The existing text for the contiguous regulated area of Monterey and Santa Cruz counties under subsection 3434(b)(8) was modified.

The existing text of subsection 3434(b)(10)(A) for the Half Moon Bay regulated area of San Mateo county was modified. The existing text of subsection 3434(b)(10)(B) for the Pescadero regulated area of San Mateo county was modified.

Emergency Amendment Effective November 29, 2007

In late October 2007, the USDA established a new regulatory protocol which was distributed to county agricultural commissioners as "Phytosanitary Advisory No. 31-2007. 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.

The Department used Geographic Information Systems (GIS) mapping programs to plot the locations of all the detections of LBAM. As a result, based upon the criteria contained in the USDA regulatory protocol, the Department determined several existing regulated areas that should be able to be removed or reduced. Based upon the October 2007 regulatory protocol, the Department removed/reduced the following existing regulated areas from Section 3434:

1. The Novato area of Marin County;
2. Both of the Napa areas of Napa County;
3. A portion of the Santa Clara area of Santa Clara County;
4. Portions of the San Jose area of Santa Clara County;
5. The Sherman Oaks area of Los Angeles County; and,
6. The Greenfield area of Monterey County.

Additionally, as this proposed action had an impact on the intrastate and interstate regulatory restrictions, the Department submitted the proposed changes to the USDA for their

consideration. The USDA concurred that these areas should be removed on November 8, 2007.

Unfortunately, there were additional adult male LBAM recently trapped. Following the new regulatory protocol, the Department has established the need to expand a regulated area in two places. On November 1, 2007, an LBAM was trapped in the South San Francisco area of San Mateo County. On November 7, 2007, an LBAM was trapped in the Menlo Park area of San Mateo County. Both of these LBAM were detected within a three mile radius of other LBAM. The detection of LBAM in these areas is indicative of additional incipient infestations necessitating the expansion of the affected regulated area.

The amendments of Section 3434(b) deleted the regulated areas under subsections:

1. 3434(b)(5), the Sherman Oaks area of Los Angeles County (approximately 11 square miles);
2. 3434(b)(6), the Novato area of Marin County (approximately eight square miles);
3. 3434(b)(7), the Greenfield area of Monterey County (approximately 21 square miles);
4. 3434(b)(9), the North and South Napa areas of Napa County (approximately 22 square miles); and,
5. 3434(b)(11), the South San Jose area of Santa Clara County (approximately 12 square miles.

As a result of deleting these subsections, other subsections that followed needed to be appropriately renumbered. Existing subsection 3434(b)(8) became subsection 3434(b)(5). Existing subsection 3434(b)(10) became subsection 3434(b)(6). Existing subsection 3434(b)(12) became subsection 3434(b)(7). Existing subsection 3434(b)(13) became subsection 3434(b)(8).

The amendment of Section 3434(b) also decreased the regulated area under existing subsection 3434(b)(12) in the Santa Clara and San Jose areas of Santa Clara County by approximately 33 square miles. The total area removed from the regulation was approximately 107 square miles.

The amendments of Section 3434(b) also expanded the regulated areas under subsections:

1. 3434(b)(3) by approximately one square mile in the South San Francisco area of San Mateo County; and,
2. 3434(b)(12) by approximately four square miles in the Menlo Park area of San Mateo and Santa Clara counties.

Approximately five total square miles were added to the current regulated area. As a result of these proposed changes, the total proposed regulated area would decrease by approximately 102 square miles to approximately 1,153 square miles.

The effect of these proposed changes to the regulation was to provide or remove authority for the State to perform quarantine activities against LBAM (*Epiphyas postvittana*) in these additional areas.

Emergency Amendment Effective December 3, 2007

This emergency amendment of Section 3434(b) removed approximately 15 square miles surrounding the Oakley area of Contra Costa County from the area under quarantine for light brown apple moth (*Epiphyas postvittana*) (LBAM). The effect of this change to the regulation was to remove authority for the State to perform quarantine activities against LBAM in the Oakley area of Contra Costa County. This action left approximately 1,138 square miles as the area remaining under quarantine.

Additionally, as this proposed action had an impact on the intrastate and interstate regulatory restrictions, the Department submitted the proposed change to the USDA for their consideration. The USDA concurred that this area should be removed on November 20, 2007. The Federal Domestic Order for Light Brown Apple Moth issued November 20, 2007, specifies more stringent conditions for interstate movement of regulated articles from areas located within one and one-half miles or less of LBAM detection. For implementing a State regulated area, a radius of one and one-half miles is used surrounding the LBAM detection sites. Therefore, whatever area is State regulated for LBAM, is automatically subject to more stringent conditions to qualify for interstate movement. To qualify for interstate movement under the Federal

Domestic Order issued on November 20, 2007, LBAM traps a minimum of one LBAM trap must be placed on the premises, an inspector must check the traps biweekly, an Integrated Pest Management program must be conducted by the affected business and the article to be moved interstate must be inspected and certified by an authorized inspector. The Department determined that there were at least three host crop producers in the Oakley area that ship interstate. In the coming spring, there may be additional interstate shippers.

The Department determined that there were at least ten producers in the Oakley area that ship intrastate. In the coming spring, there may be additional intrastate shippers. These shippers are subject to the regulatory restrictions contained in Section 3434. Additionally, home gardeners, farmer's markets, community gardens, Senior Gleaners, etc., were all subject to the restrictions contained under Section 3434. Under Section 3434, regulated articles cannot move from or within the regulated area unless certified by an authorized agricultural official. It should also be noted that much of the area surrounding Oakley is still considered rural agricultural and there is still a culture of wanting to exchange produce within and outside the current regulated area.

For the Department to deregulate the area surrounding Oakley through the "normal" rulemaking process would take approximately six months. During this time period, there would be unnecessary regulatory restrictions interfering with both intra and interstate trade. Additionally, the local community would have continued to suffer as regulated articles would still be prohibited movement, even within the regulated area. Finally, State and county regulatory inspectors would be continued to be burdened with an unnecessary workload and the expense of having additional inspectors available in the area to perform the required inspections and issue the required certificates to qualifying commodities. To remove unnecessary quarantine restrictions it was necessary to remove this regulated area immediately. Therefore, it was necessary to amend this regulation as an emergency action

This emergency amendment to Section 3434 is also necessary to ensure the State's regulation continues to be substantially the same as the federal order issued November 20, 2007, which includes the October 2007 regulatory protocol.

The adult LBAMs will continue to emerge and are not known to be a long distance flyer. These types of moths generally only fly up to approximately one half mile and the current traps will attract a male moth within 100 meters. The real threat of long distance spread is through the human assisted movement of infested plants and plant parts, including green waste, and other possible carriers such as contaminated equipment or appliances.

Additional emergency quarantine responses were necessary to help ensure the LBAM does not continue to spread to other uninfested areas of the State. These emergency amendments to Section 3434 were necessary to ensure the State's regulation continues to be substantially the same as the recent 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.

The LBAM has the capability of causing significant irreparable harm to California's agricultural industry and some possible adverse environmental impacts. 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. Although adoption of specific regulatory authority can be the beginning of a project and therefore covered by CEQA, this regulation, for the reasons already set forth, constitutes a specific act necessary to prevent or mitigate an emergency as authorized by Public Resources Code section 21080, subdivision (b)(4) and Title 14, California Code of Regulations Section 15269, subdivision (c). The regulation is also an action required for the preservation of the environment and natural resources as authorized by Title 14, California Code of Regulations, sections 15307 and 15308.

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 plants species and habitats. There is an imminent threat for

adverse consequences and ultimate extinction to some of these sensitive species if LBAM becomes permanently established in California.

Currently, this species has a relatively restricted geographic distribution, being found only in portions of Europe and Oceania. 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 the 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.

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.

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, LBAM, if not eradicated, 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 apple, 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.

Where ever LBAM occurs in association with vineyards, it is considered to be a very important agricultural pest. Unless properly managed, LBAM causes substantial risk 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.

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.

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 5 percent 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). 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. 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.

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.

The majority of California does have a climate which would favor the LBAM. Additionally, LBAM may have seven or more generations under some California climatic conditions. If unchecked, this would enable LBAM to build higher population levels in California. Given the known economic damages occurring in LBAMs present range, its potential damage to California's environment and agricultural industry could be devastating; especially without adequate control measures.

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 3434 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 and there are no costs associated with removing areas from the regulation.

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 3434.

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:

Within the quarantine area, the Department has determined there are approximately 368 production nurseries (includes cut flower producers). The nursery or growing grounds must be free from LBAM to ship within or outside the regulated area. 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. Whatever IPM program the producer uses with success to keep the nursery stock free from LBAM is acceptable, it is a performance standard.

If the IPM program fails, a production nursery (including cut flowers) with an active LBAM infestation must eliminate LBAM from the nursery or from a specific lot of nursery stock in order to be eligible for quarantine certification. There are at least 24 pesticides registered for use in California that are efficacious against LBAM and may target different life stages (egg, larvae, pupae and adult). The grower may choose from this existing list or may present another compound if it is registered for use in California and there is scientific evidence that it is efficacious against LBAM. It takes approximately 10 days for LBAM eggs to hatch and the larvae to be susceptible to a larvacide. If a grower chooses to use a material that is not ovicidal, they must wait 10 days for a reinspection by an authorized agricultural official to determine that no live life stages of LBAM are present and the product is eligible for certification. If they use a product that is an ovicide and a larvacide; the reinspection may occur within the time period specified on the product's label.

The Department acknowledges that it may be a significant cost to a producer to eliminate LBAM from an infested area/growing grounds. Where a nursery is infested, the biological risk of all life states being present: egg, larvae, puparium, and adults are extremely likely. The eggs, larvae, puparium and adults may be present in the foliage. There are many variables that may impact the actual cost for compliance. There are currently 24 different labeled products that are registered for use in California and which may be used for treatment to obtain quarantine certification. Some of these products may either be used singly or must be used in combination and this is dependent upon the nursery's production methods; stage of development of the nursery stock; the biological risk to exposure of the nursery stock to infestation; and, the nursery's production and sales needs. The costs for these products all vary at both the retail

and wholesale levels. The costs will also vary based upon the given volume purchased at any one time.

The length of time to treat an acre varies greatly depending on whether it is field planted, containerized, size of the container holding the nursery stock (one gallon container versus 36" box), the size and spacing of the containers, walkways, roadway, etc.

Other factors that may affect the cost of compliance include:

- The type of material used affects the quantity and formulation of the active ingredient in the material.
- How long the nursery stock is held at the affected nursery prior to its sale and the need to have replacement stock in the production cycle.
- Pending sales contracts may vary from nursery to nursery and drive the nursery's choice of approved materials to use.
- Labor costs may vary from nursery to nursery.
- Whether the nursery has a qualified pesticide applicator on site or has to hire one varies from nursery to nursery and size of the nursery may be a factor.
- The availability of the necessary treatment equipment and type of equipment may vary from nursery to nursery.
- There may be a substantial difference between start-up and ongoing costs.
- The physical location of the growing grounds relative to the labor cost for that area.

Therefore, rather than there being a single prescriptive treatment, there are a number of possible treatments available to ensure that the performance standard (i.e. treated in a manner to eliminate live life stages of LBAM from nursery stock) is met based upon the biological risk of the nursery stock harboring a live life stage of LBAM. Once the LBAM infestation has been eliminated, the producer may go back to an IPM program.

Based on the preceding information, it was determined that the amendment of Section 3434, may have an adverse economic impact on some nursery businesses, but it is not expected to be significantly adverse. For the most part, there are a number of optional ways to comply that are available to the affected businesses so they may select the means with the lowest cost and

easiest implementation for them. The highest costs would be for an infested nursery. The most expensive material (Entrust) costs approximately $97 per acre for material. The least expensive material costs approximately $15 per acre. This excludes the labor and any pesticide applicator and equipment costs.

Assuming 65,000 one gallon containers per acre, the average time to treat one acre is approximately 1.5 hours. The labor costs for application may vary from $7.50 to $10/hour. Using the higher labor cost, that would be $15 per acre for labor. The highest material and labor costs per acre would be $112 per acre and the lowest cost would be $30 per acre. At the highest rate this translates into an approximate increased production cost of $0.002 per one gallon container.

The Department does not have any reasonable way to project equipment or consulting costs, if needed by the producer.

The Department also obtained information directly from two nursery operations, one in Santa Clara County and one in San Mateo County. The nursery in San Mateo County indicated that it cost approximately $5,140 to treat 23.5 acres. Assuming all one gallon containers, this translates into an approximate increased production cost of $0.003 per one gallon container. The nursery in Santa Clara County spent $6,336 to treat 45 acres. Again, assuming all one gallon containers, this translates into an approximate increased production cost of $0.002 per one gallon container.

Within the quarantine area, the Department has determined there are approximately 298 retail nurseries. The nursery stock offered for sale at a retail nursery must also be free from LBAM. A retail nursery found with an active LBAM infestation must eliminate LBAM from the nursery or from a specific lot of nursery stock in order to be eligible to continue sales to the general public. The retailer also has a choice of at least 24 pesticides registered for use in California that are efficacious against LBAM and may target different life stages. However, due to the nature of the retail business, it may not be practical to treat plant material on the premise and hold for reinspection prior to resuming sales. Some retailers may choose to send the plant material back to the producer (if it can be done safely) or destroy the plant material and bring in new

plant material from a producer that is free from LBAM to ensure they can immediately resume sales to the public.

However, nursery stock that is infested with LBAM does not meet the current requirements of Section 3060.2, Standards of Cleanliness, California Code of Regulations (CCR), and cannot be sold anyway. This regulation requires that all nursery stock must be kept free from pests that are of limited distribution, including pests of major economic importance which are widely, but not generally distributed within California. The LBAM is a major economic plant pest of State, national and international quarantine concern. The costs associated with keeping nursery stock free from LBAM would be incurred by the affected nurseries, regardless of this regulation. Therefore, for nurseries, there are no additional mandated costs of compliance solely associated with the adoption and subsequent amendments of this regulation.

Within the regulated area, the Department has identified approximately 10 community gardens and 144 host crop producers. 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 end product, the harvested fruits and vegetables are free from LBAM life stages, the product is free to move within or from the regulated area. 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. Therefore, the Department is not aware of any specific costs for compliance with this regulation.

Within the regulated area the Department has identified approximately 13 cold storage facilities. 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. The Department is not aware of any specific costs for compliance with this regulation.

Within the quarantine area, the Department has determined there are landscape maintenance companies and green waste companies (approximately 57 were identified by the Department as being within the regulated area) that handle green waste movement from or within the regulated area. Movement of such material must be conducted in a manner that precludes the escape of

any possible live life stages of LBAM. Green waste may move within or from the regulated 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. All of these methods are very inexpensive and are already required as a condition of movement on public roadways by other State and/or local agencies. Therefore, these methods of treatment would not represent a significant economic impact.

For the majority of businesses, no additional costs will be incurred.

Additionally, on May 2, 2007, the United States Department of Agriculture (USDA) issued a Federal Domestic Quarantine Order for LBAM which restricts the interstate movement of host commodities produced in the California counties of Alameda, Contra Costa, Marin, Monterey, San Francisco, San Mateo, Santa Clara and Santa Cruz. This order now applies to all infested California counties. The emergency adoption and subsequent emergency amendments to Section 3434 were 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. Under Section 3434, the total regulated area in California is approximately 1,000 square miles.

There are approximately 3,718 production nurseries and 7,099 cut flower producers located in California. Of these, approximately three percent (368) are located with the regulated area. Many of the businesses located outside the current regulated area are interstate shippers. Therefore, this regulatory action was necessary to provide the majority of potentially affected California businesses, which are not inside the current State regulated area, the continued ability to compete with businesses in other states without unnecessary federal restrictions on California's interstate commerce.

There are 6,454 retail nurseries located throughout the State. Of these approximately 97 percent (6,156) are located outside the regulated area. Again, nursery stock that is infested with LBAM does not meet the current requirements of Section 3060.2, Standards of Cleanliness,

California Code of Regulations (CCR), and cannot be sold. This regulation helps protect 97 percent of the retail nurseries located within California from ever having to incur losses due to LBAM.

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 and subsequent amendment of Section 3434:

For Information/Action, DA-2007-61, dated November 20, 2007, to State and Territory Agricultural Regulatory Officials, from Richard L. Dunkle and its attachments.

Memo dated November 20, 2007, from Debby Tanouye to John Connell.

Memo dated November 14, 2007, from Debby Tanouye to John Connell.

Memo dated November 14, 2007, from Debby Tanouye to John Connell.

Memo dated November 6, 2007, from Debby Tanouye to John Connell.

Memo dated November 2, 2007, “Amended,” from Debby Tanouye to John Connell.

Memo dated November 2, 2007, “Amended,” from Debby Tanouye to John Connell.

Memo dated November 2, 2007, “Amended,” from Debby Tanouye to John Connell.

Memo dated November 2, 2007, from Debby Tanouye to John Connell.

Memo dated November 2, 2007, from Debby Tanouye to John Connell.

Phytosanitary Advisory No. 31-2007, dated October 31, 2007, from California Department of Food and Agriculture to All County Agricultural Commissioners.

"Light Brown Apple Moth (LBAM) Approved Treatments for Nurseries and Host Crops," revised October 12, 2007.

Email dated September 17, 2007, from Helene Wright to Nick Condos and Courtney Albrecht and its attachments.

"Establishments Affected by the Light Brown Apple Moth," dated July 27, 2007, Permits and Regulations, California Department of Food and Agriculture.

"LBAM Interior Quarantine Estimated Cost Basis," dated July 27, 2007, Permits and Regulations, California Department of Food and Agriculture.

Federal Domestic Quarantine Order for Light Brown Apple Moth (LBAM), *Epiphyas postvittana*; Interstate Movement Restrictions, dated May 2, 2007, fromRichard L. Dunkle to State and Territory Agricultural Regulatory Officials.

"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), [Leptidoptera: Tortricidae], September 21, 2003, Department of Entomology, University of Minnesota.

"Pests and Pest Management, Impact on Climate Change," February 2000, Dr. Robert W. Suthherst, CSIRO Entomology.

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. Myer 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.

“Pest and Damage Record #1461157,” dated November 7, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1461121,” dated November 1, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1532019,” dated October 19, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1461120,” dated October 17, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1532012,” dated October 17, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1531775,” dated October 10, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1531505,” dated October 4, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1500184,” dated September 15, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499926,” dated September 5, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1455232,” dated September 4, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1531161,” dated August 30, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1472945,” dated August 30, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1472944,” dated August 28, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499874,” dated August 25, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1457148,” dated August 21, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1531193,” dated August 15, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1472775,” dated August 15, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499384,” dated August 9, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1295289,” dated August 8, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1472939,” dated August 6, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499334,” dated August 6, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499332,” dated August 6, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499729,” dated August 4, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1499689,” dated July 30, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.