

Department of Food and Agriculture  
Proposed Changes in the Regulations  
Title 3, California Code of Regulations  
Section 3437  
European Grapevine 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 (Food and Agricultural Code Section 403).

Specific Purpose and Factual Basis

The specific purpose of Section 3437 is to provide authority to the State to regulate the movement of hosts and possible carriers of European Grapevine Moth, *Lobesia botrana*, within or from 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 April 20, 2010

On March 3 and 19, 2010 (PDRs #1586101 and 1535645), adult male EGVM were trapped in the Napa area of Napa County. These EGVM were trapped within three miles of each other and within one life cycle. On March 17 and 22, 2010 (PDRs #1535672 and 1535647), adult male EGVM were trapped in the Napa area of Napa County. These EGVM were trapped within three miles of each other and within one life cycle. On March 3 (PDR #1586174-Rutherford), 19 (PDR #1551774-Yountville) and 20 (PDR #1551755-Yountville), 2010, adult male EGVM were trapped in these areas of Napa County. These EGVM were trapped within three miles of each other and within one life cycle. This meets the regulatory protocol for expanding the quarantine area in these areas of Napa County.

### Emergency Amendment Effective May 4, 2010

On March 25 and 31 and April 8, 2010 (PDRs #1598035, 1629011 and 1629385), adult male EGVM were trapped in the Oak Knoll area of Napa County. These EGVM were trapped within three miles of one another and within one life cycle. On March 29 and April 5, 2010 (PDRs #1598066 and 1629158), adult male EGVM were trapped in the East St. Helena area of Napa County. On April 5, 8, 9, 10 and 11, 2010 (PDR#s 1629142, 1629144, 1629143, 1629329, 1629327, 1629330, 1629382, 1629406 and 1629402), adult male EGVM were trapped in the Calistoga area of Napa County. These EGVM were trapped within three miles of one another and within one life cycle. On April 8 and 9, 2010 (PDR#s 1629326, 1629388 and 1629387), adult male EGVM were trapped in the St. Helena area of Napa County. These EGVM were trapped within three miles of one another and within one life cycle. On April 9 and 10, 2010 (PDRs #1629271, 1629405 and 1629407), adult male EGVM were trapped in the Cuttings Warf area of Napa County. These EGVM were trapped within three miles of one another and within one life cycle. All of these met the regulatory protocol for expanding the quarantine in these areas of Napa County and also caused the expansion in contiguous areas of Sonoma County.

EGVM are found in southern Asia, Europe, North Africa, Anatolia, the Caucasus and in South America (Chile where it was first identified in 2008). Adult European Grapevine Moths (EGVM) are 6 to 8 mm long with a wingspan of about 10 to 13 mm. However, their size is greatly affected by larval food quality. The first flight of adults occurs in spring when daily average air temperature is above a minimal threshold temperature of 10°C for 10 to 13 days. High temperature (over 20°C) and low humidity (40-70% relative humidity) provide optimal conditions for moth activity. The second flight period begins in summer. Adults may be hard to discover during the day and may be noticed only when they take flight after being disturbed. Within a day or two of mating, females begin to oviposit on the blossoms, leaves, and tender twigs of grapevines. The female lays 300 or more eggs at a rate of 35 per day. First generation eggs are laid on the flower buds or pedicels of the vine while second generation eggs are laid on individual grapes. Eggs hatch in seven to eleven days in spring and three to five days in summer.

The number of generations in a given area is fixed by photoperiod together with temperature. The moth achieves two generations in northern cold areas and usually three generations in southern temperate areas, but as many as five generations have been reported.

First generation larvae feed on bud clusters or flowers and spin webbing around them before pupating inside the web or under a rolled leaf. If heavy flower damage occurs during the first moth generation, the affected flowers will fail to develop and yield will be low. Second generation larvae enter the grapes and feed before pupating inside the grape. Larvae of the third generation, the most damaging, feed on ripening grapes, migrating from one to another and spinning webs. When berries are a little desiccated, the larvae penetrate them, bore into the pulp, and remain protected by the berry peel. Larvae secure the pierced berries to surrounding ones by silk threads in order to avoid falling. Each larva directly damages several berries (one to six), but if the conditions are suitable for fungal or acid rot development, a large number of surrounding berries may also be affected. The third generation larvae leave the fruit and seek shelter under the bark, among dead leaves, or between clods of earth, where they pupate before overwintering. Larvae develop in four to five weeks in spring and two to three weeks in summer. Pupation lasts nine to twelve weeks in spring, five to seven days in summer, and up to six months in winter.

The EGVM is a serious pest in warm vine-growing countries. Damage by EGVM makes berries attractive to other insects and predisposes the fruit to fungal infection. Larval boring may promote a number of fungal rots, including *Aspergillus*, *Alternaria*, *Rhizopus*, *Cladosporium*, *Penicillium* and especially, grey rot caused by *Botrytis cinerea*. Loss of up to one-third of the vintage has been reported in areas of the Soviet Union, Syria and Yugoslavia. Losses in Israel sometimes reach 40 to 50 percent among table grapes and up to 80 percent for wine grapes. Further loss is due to the time and labor spent in cleaning the grape bunches. When infestations are heavy, work days spent in cleaning the fruit account for 30 to 40 percent of the time of those involved in harvesting.

Losses in grapes produced for raisins and table grapes are expected to be higher than for wine grapes. Additionally, fresh table grapes will likely face restrictions imposed by some trading partners.

There have been 21 interceptions of EGVM at U.S. ports of entry between 1984 and 2007. All but one interception came from baggage. Most interceptions were live larvae on grapes but interceptions also occurred on persimmon and plum (once each) and twice on pomegranates. The most probable method of EGVM movement within California is human-aided on equipment,

fruit or infested propagative material. Though larvae are active, their movement is usually limited to between berry clusters, and virgin females' movement rarely exceeds 80 m.

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 retail value of California was valued at \$16.5 billion in 2006. Additionally, EGVM is known to feed on close relatives of plants listed as threatened or endangered in the United States and presents a potential threat to perhaps 24 species, some of which are known to occur only in California. To protect this source of revenue and the environment, California must do everything possible to prevent the spread of EGVM in the State.

Control measures for EGVM include: insecticides, biological control using *Bacillus thuringiensis* (one study showed 75-90% control), mating disruption (very expensive and only effective if used region wide) and sterile insect technique (not yet reached general commercial application).

The adoption of the regulation established the regulated areas for EGVM based upon the same triggers used for establishing or expanding the quarantine for the light brown apple moth: the detection of eggs, larva, pupa or two adult moths within three miles of each other and within one life cycle. The quarantine included the initial detection sites as the epicenter and a buffer zone which extended approximately three miles in each direction from the epicenter. A buffer zone was necessary because the fly can spread naturally (as well as being spread artificially in infested hosts). The quarantine area was considered the minimum area around the initial detection sites which should be regulated to prevent artificial spread of EGVM to noninfested areas. The proposed boundary line was drawn jointly by the United States Department of Agriculture, the California Department of Food and Agriculture, and the Napa, Solano and Sonoma county agricultural commissioners. The ability to determine quarantine boundary areas was based upon the information contained in the Final Report of the International Technical Working Group for the European Grape Vine Moth in California, released February 10, 2010.

The emergency adoption of Section 3437 was necessary to prevent the artificial spread of the pest to other areas of California.

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 3437 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 3437.

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 identified 597 regulated growers/vineyard managers and 423 harvesters of bulk grapes for crush. These businesses must ensure that all equipment used for vineyard maintenance and harvesting is thoroughly cleaned of all host material, debris and all possible life stages of EGVM year-round and prior to leaving the growing premises. The Department estimates that it will cost a representative grower/vineyard manager or harvester \$500 to purchase cleaning equipment to accomplish the above. An

additional labor cost would apply but would vary widely depending on how often equipment is moved from the premises. The total cost to these two groups is estimated at \$510,000.

The Department has also determined that there are approximately 436 haulers/transporters of bulk grapes for crush that must ensure that: all equipment used (bins, barrel, machinery, gondolas, etc.) is thoroughly cleaned of all host material, debris and all possible life stages of EGVM prior to leaving the growing premises, all vehicles/conveyances used in the transport of shipment must be cleaned of same prior to leaving the growing premises, and, again, prior to leaving the receiving facility. Additionally, they must transport the bulk grapes in a fully enclosed conveyance or the shipment must be completely covered. The Department estimates that an average haulers/transporter may face additional costs of \$500 to purchase cleaning equipment to accomplish the above, \$1,085 for tarps and labor costs of \$434, although the last two costs may be distributed among growers and/or harvesters. The total cost to this group is estimated at \$877,224.

The Department has also determined that there are approximately 229 receivers of bulk grapes who must ensure that all equipment (bins, barrels, machinery, gondolas, etc.) used for the transport of bulk grapes to their facility are thoroughly cleaned of all host material, excess debris and all possible life stages of EGVM prior to leaving the premises. The Department estimates that a representative receiver may face an additional cost of \$500 to purchase cleaning equipment to meet this requirement, for a total cost for this group of \$114,500.

The Department has also determined that there are two production nurseries that must remove fruit and flowers from grapevine nursery stock and treat the stock prior to movement, and remove flowers from olive nursery stock and treat the stock prior to movement. The Department estimates that these production nurseries face additional costs of \$42,432 per year for a total cost to this group of \$84,864.

The Department has also determined that there are 17 retail nurseries that must remove host material fruit and flowers year round. The Department estimate that the retail nurseries face additional costs of \$960 per year for a total cost to this group of \$16,320.

Based on the preceding information, it was determined that the amendment of Section 3437 will result in a total estimated cost to affected businesses of \$1,602,000, which may have an adverse economic impact on some of these businesses within the regulated area. This expense is neither unreasonable or unexpected due to the nature of the industry.

#### Assessment

The Department has made an assessment that the adoption of this regulation would not 1) create or eliminate jobs within California; 2) create new business or eliminate existing businesses with California; or 3) affect the expansion of businesses currently doing business with California.

#### Alternatives Considered

The Department 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 as and less burdensome to affected private persons than the proposed action.

#### Reference Materials

Email, dated August 9, 2010, from Melinda Mochel to Stephen Brown, and its attachments.

Federal Domestic Quarantine Order (*Lobesia Botrana*), dated June 22, 2010.

Phytosanitary Advisory No. 11-2010, dated June 21, 2010, California Department of Food and Agriculture.

European Grapevine Moth 2009 Napa County Winegrape Fruit and Wine Value Losses.

Second Report of the International Technical Working Group for the European Grapevine Moth (EGVM) in California, dated May 14, 2010.

Letter, dated April 27, 2010, from Jim Allan to A.G. Kawamura.

Letter, dated April 21, 2010 from Cathy V. Neville to A.G. Kawamura.

Memorandum, dated February 22, 2010, from David R. Whitmer to A.G. Kawamura.

Email, dated February 18, 2010, from Eileen Y. Smith to Helene Wright, and its attachments.

Email, dated February 4, 2010, from Eileen Y. Smith to Helene R. Wright and its attachment.

Email, dated December 23, 2009, from Eileen Y. Smith to Helene R. Wright, and its attachments.

Phytosanitary Advisory No. 02-2010, dated February 16, 2010, California Department of Food and Agriculture.

Final Report of the International Technical Working Group for the European Grape Vine Moth (EGVM) in California, dated February 10, 2010.

Email, dated February 8, 2010, from Kevin Hoffman to Stephen Brown and its attachment.

Email, dated February 8, 2010, from John Hooper to Stephen Brown and its attachment.

Email, dated December 15, 2009, from Stephen Brown to Susan McCarthy, and its attachments.

Electronic Code of Federal Regulations (*e*-CFR), Title 7, Part 305, dated October 13, 2009.

Interim Report of the International Technical Working Group for the European Grapevine Moth (EGVM) in California, January 11, 2010.

New Pest Advisory Group (NPAG), Plant Epidemiology and Risk Analysis Laboratory Center for Plant Health Science & Technology, October 14, 2009

Press Release, National Agricultural Statistics Service, October 9, 2009.

California Grape Acreage Report, 2008 Summary, United States Department of Agriculture.

Agricultural Statistical Review, California Agricultural Resource Directory, 2008-2009.

Mini Risk Assessment, Grape berry moth, *Lobesia botrana*, (Denis & Schiffermuller) [Lepidoptera: Tortricidae], September 5, 2003. Robert C. Venette et. al., Department of Entomology, University of Minnesota.