RESPONSES TO ADDITIONAL QUESTIONS RAISED IN PETITIONS TO RECLASSIFY LIGHT BROWN APPLE MOTH

Question: Why are the Animal and Plant Health Inspection Service (APHIS) and California Department of Agriculture (CDFA) responding to the Light Brown Apple Moth (LBAM) infestation in California?

APHIS and partners determined that LBAM is an invasive species which threatens agricultural production in the United States. APHIS estimates that American farmers would experience losses from LBAM that could potentially amount to $1.597 billion in crop damage losses per year. As shown in the figure below, the counties in blue are at risk because they produce or contain plants that are suitable hosts for the LBAM.

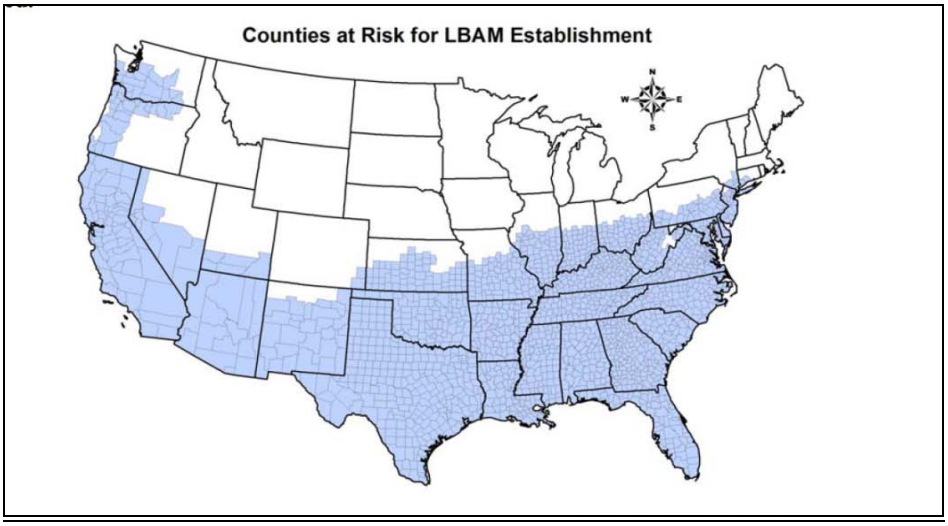
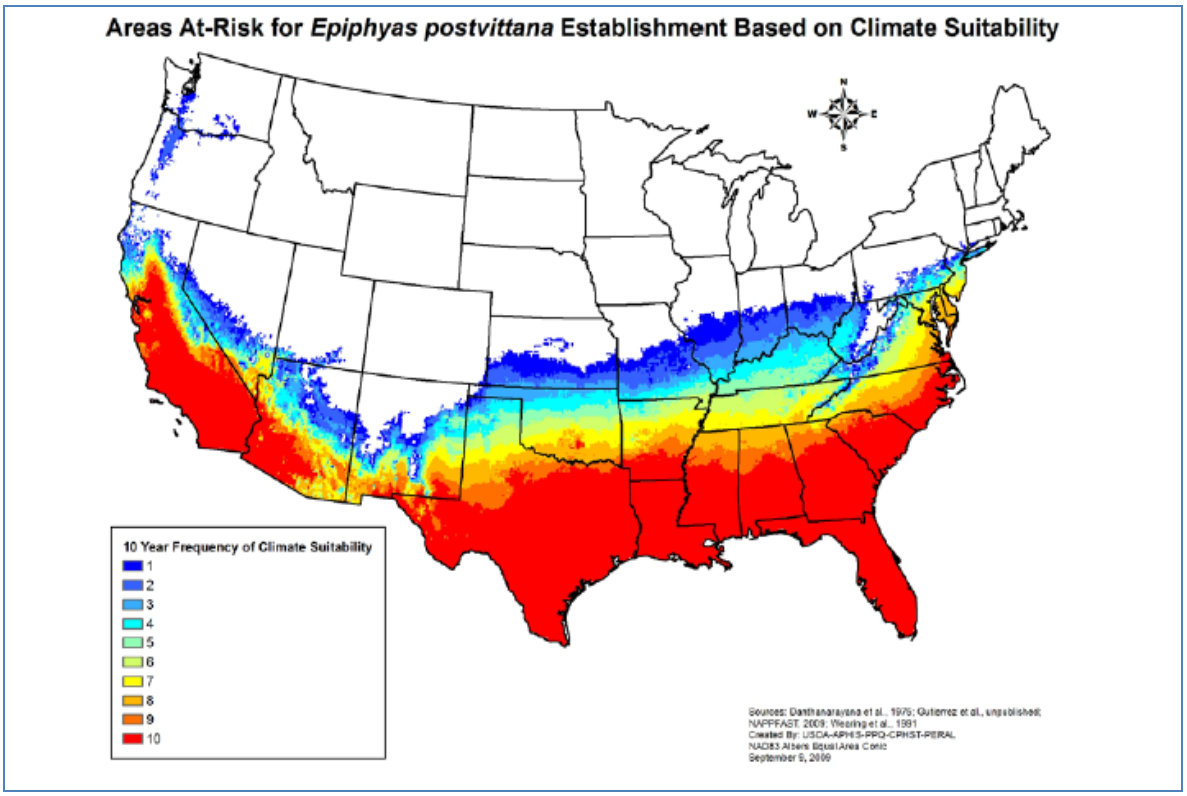


Figure cited from page 11 of the USDA APHIS report "Economic Analysis: Risk to U.S. Apple, Grape, Orange and Pear Production from the Light Brown Apple Moth, *Epiphyas postvittana* (Walker); May 2009

Additional information on the potential economic damage posed by LBAM is available at the following link
http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/downloads/lbameconomicanalysis.pdf

Question: Does LBAM pose a significant risk to California and the United States?

The potential impact to California alone could amount to millions of dollars per year impacting 7 of California's 10 most important crops. LBAM is a significant invasive pest; it has a host range in excess of 2,500 plant species including 150 commercial commodities. This host list includes fruits, vegetables, nursery stock, and cut flowers and it is believed that LBAM could persist in significant portions of 33 States. APHIS determined through epidemiological modeling that LBAM would likely complete at least three life cycles under climatic conditions identified in the map below.



Question: How is LBAM different from native leafroller species?

There are many leafroller species in the United States. Prior to its detection in California, LBAM had never been detected in the continental United States. There are several natural enemies of native leaf rollers, but to date, natural enemies have not impacted LBAM populations in the infested areas of California and few predators or parasites of LBAM have been observed. This is typical of introduced species. There could be parasites and predators that may attack it but this requires research to better understand how they fit into the overall management program.

Furthermore, LBAM appears to be more aggressive than native leaf roller species; field observations indicate that their larvae are very mobile and strong feeders in comparison to many native leaf roller species.

Invasive species like LBAM tend to expand its range as generations evolve. This is shown in the United Kingdom where the pest has undergone a rapid range expansion while causing significant crop damage. LBAM appears to be able to feed and reproduce on a wide host range; it seems to be able to do this on new plant species. In Australia, the moth is believed to have utilized native evergreens initially. Now, the present host range is broader and includes fruit, vegetable, and fodder crops, ornamentals, and broad-leaf weeds. In California, LBAM surveys have resulted in new plants being added to LBAM's known host list.

Additional information on LBAM host range and possible "at risk" production is available at the following link
http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/index.shtml

Question: Why did APHIS and CDFA select eradication as the program goal in 2007?

APHIS and CDFA elected to eradicate LBAM following confirmation and delimitation surveys because LBAM populations in the United States were considered to be restricted in distribution and relatively limited in size. Tools were available to impact LBAM populations for the intended purpose of eradication.

This decision to eradicate LBAM was based on technical information gleaned from the New Pest Advisory Group (NPAG) and the Technical Working Group (TWG). Eradication was considered the best option to protect the health of the agricultural and natural resources in the United States. This option was selected based upon a number of factors:

- LBAM is reported as a serious agricultural pest in scientific literature – NPAG and TWG
- LBAM poses a significant economic risk to agriculture production in California as well as to agriculture production in other states
    - Agriculture production in 33 states is at risk from LBAM
    - California's agriculture production could face the largest production loss ranging between $219 and $503 million in value annually
- Establishment of LBAM would increase production costs and possible environmental impacts since increase insecticide use and other management activities would be required
    - Organic farmers would have increased challenges to the integrity of their crops due to increased insecticide use; they would endure added costs to address LBAM.
    - Lost production and control costs for production of apple, grape, pear, and orange in Australia exceed A$21 million annually
- LBAM is a pest of concern for trading partners so farmers could face tougher import requirements
    - Trading partners such as Chile, Ecuador, Japan, South Africa, and Thailand regulate LBAM as a quarantine pest
    - 100 percent of the agriculture commodities exported to Ecuador are from states at risk from LBAM
    - American farmers could lose trade to 11 countries valued at $9 billion annually

Additional information on the TWG LBAM recommendations is available at the following link http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/index.shtml

Question: Did the 2005 Cooperative Agricultural Pest Survey (CAPS) survey miss LBAM in Santa Cruz County?

In 2005, the APHIS CAPS survey placed 20 LBAM traps in an area of Santa Cruz County that was heavily infested with LBAM in 2007. Was LBAM present and not detected? There is no way to know for certain, but given the size of the infestation in 2007 there is reason to believe that the 2005 survey may not have detected LBAM that was present in Santa Cruz County at that time.

Prior to 2007, the 2005 CAPS survey was the only formal systematic LBAM survey conducted in California. However, a number of professional entomologists in California routinely collected various Lepidoptera (moths and butterflies) in the San Francisco and Monterey Bay areas and had been monitoring traps that would have attracted LBAM for several years prior to 2007. LBAM was never detected as a result of those ad hoc surveys until 2006. At that time, two moths were trapped. The group has detected LBAM on several occasions since that time.

Additional information on the CAPS program is available at the following link:
http://www.aphis.usda.gov/plant_health/plant_pest_info/pest_detection/index.shtml

Question: How does a quarantine limit the spread of LBAM?

APHIS implements quarantines in order to restrict the human-assisted movement of invasive species. Federal Domestic Quarantine Order DA-2008-17 was implemented to stop the further spread of LBAM from infested to non-infested areas. The quarantine restricts movement of regulated articles from known infestations.

Human-assisted movement of LBAM through transport or commerce of produce, cut flowers, and nursery stock from infested areas is a key consideration. In order to protect non-infested areas of California and the remainder of the Continental United States, CDFA and APHIS implemented quarantines to prevent long distance spread of LBAM. Farmers wishing to move LBAM host material outside of the quarantined area must follow specific guidelines to minimize the risk of inadvertently moving the LBAM to non-infested areas.

Additional information on the counties currently quarantined for LBAM is available at the following link
http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/index.shtml

Question: Why did the Technical Working Group (TWG) decide to use aerial application as a control strategy?

The TWG identified the use of aerial application of pheromone as an effective approach to deliver an area-wide LBAM response program. The goal for aerial application of moth pheromone was to quickly reduce the LBAM population in order to improve the effectiveness of the other management methods that were delivered on the ground. APHIS and CDFA reviewed the technical information and determined that aerial application of pheromone would be the most effective means of reducing LBAM populations on farms and in the surrounding environment.

The TWG identified a layered or multi-prong response strategy that included several control suppression strategies such as mating disruption, pesticide application, sterile insect technique (SIT) and biological control. Successful eradication of LBAM was based upon initial knock-down of populations over a broad geographic area. However, the use of mating disruption through the use of aerial application of pheromone was met with public concern about perceived negative health and environmental effects. APHIS will no longer consider aerial application of insect pheromone as a management strategy for LBAM.

Question: Are the pheromones used in the LBAM program a risk for human health or environmental health?

The Environmental Protection Agency (EPA) stated in 2001 that the pheromones are considered to have no health risk when used according to labeled methods.

The pheromones used in LBAM suppression have no known biological activity in other insect species, mammals, and other organisms. The purpose of the pheromone is to simulate the female LBAM odor in order to attract or confuse the male LBAM making it difficult to find a female moth for mating.

Question: Is mating disruption an effective method of control for LBAM ? Will Sterile Insect Technique (SIT) be used in place of the mating disruption method?

Mating disruption is effective in suppressing LBAM populations such that over time the LBAM population will decrease. However, mating disruption can only be considered as one of several tools to combat the impacts of LBAM on California farms. Mating disruption has been thoroughly studied in LBAM and used successfully in Australia and New Zealand to minimize impact of LBAM and other pests. Additionally, mating disruption can be used in combination with other methods such as Sterile Insect Technique (SIT) to further decrease the LBAM population. APHIS believes that SIT is an important control method for LBAM since SIT has been used successfully to control other destructive pest species such as pink bollworm and Mediterranean fruit fly.

Question: Why is outreach an important component of the LBAM program?

Outreach on invasive pests is critical to addressing invasive pests that threaten America's farms and natural resources. APHIS has launched several outreach initiatives along with State, tribal, and others to raise the awareness of the general public about invasive pest species. The hope is that this heightened awareness will result in early detections of the presence of invasive pest species; that the public will gain a greater appreciation of their ability to prevent the spread of invasive pests by refraining from activities that would lead to long distance spread of invasive pests; and to enhance the general public's understanding of response programs designed to combat invasive pest species. Outreach provides an important venue for APHIS to gain input and support from state counterparts, the agriculture industry, environmental groups, general public, and other federal agencies on its safeguarding activities.

APHIS' communication strategy includes conducting outreach activities such as stakeholder meetings, listening session, and public outreach events. In addition, APHIS has recently begun exploring the use of new social media to inform the public regarding LBAM and other invasive species.

Question: Will APHIS and CDFA continue to regulate LBAM?

APHIS and CDFA will continue to regulate LBAM because of its large potential impact on agriculture production and natural resources in the United States. Maintaining a regulatory framework will enable California farmers to continue to sell their crops. In addition to being a risk to agriculture production, LBAM also threatens endangered plant species. Since the program began in 2007, LBAM has been recorded on 26 species or subspecies of endangered or threatened plant species in California.