Light Brown Apple Moth (LBAM) Eradication Program: Formal Petition to Reclassify LBAM As a Non-quarantinable Pest

Summary of findings

Petition Prepared by

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Light Brown Apple Moth (LBAM) Reclassification Petition: Summary of Findings

Preface

This document is a summary of a comprehensive scientific review of the light brown apple moth (LBAM) submitted as a formal LBAM Reclassification Petition by Harder et al. (2008) calling for the reclassification of LBAM. The Petition was formally submitted to the United States Department of Agriculture (UDSA) on September 26, 2008 by Congressman Sam Farr (D-CA). On the same date it was additionally submitted to the California Department of Food and Agriculture (CDFA). Accompanying the LBAM Reclassification Petition are several letters from prominent entomologists supporting the scientific findings and opinions presented as well as from Legislators calling for a formal reclassification review. The LBAM Reclassification Petition provides scientific references for all statements made and copies of those references were provided to USDA and CDFA. For relative brevity, these citations are not included in this summary. The complete Table of Contents for the LBAM Reclassification Petition is provided at the end of the document. A copy of the LBAM Reclassification Petition can be obtained from http:/www.lbamspray.com/ or from Petition co-author Roy Upton at herbal@got.net.

Petitioners: Harder D, Kimes K, Upton R. Submitted September 26, 2008.

Introduction

The light brown apple moth (LBAM) (*Epiphyas postvittana*), a moth native to Australia, has become the focus of tremendous controversy since it was formally discovered in California in 2007. LBAM has been classified since 1984 by the USDA (United States Department of Agriculture) as a Class A/actionable pest. For the past 28 years, this classification resulted in the US imposing import sanctions against agriculture commodities from countries where LBAM was endemic or naturalized (e.g. Australia and New Zealand). USDA's original classification led to other countries (e.g. Canada and Mexico) quarantining against LBAM.

When LBAM was identified as being present in California, international trading partners imposed sanctions similar to those imposed by the US against agriculture commodities originating from areas of California where LBAM was found. These international quarantines were followed by domestic quarantines by USDA to prevent interstate trade disputes and an agriculture state of emergency was declared by CDFA. As their primary measure for dealing with these quarantines, USDA, through consultation with a USDA-convened Technical Working Group (TWG), implemented an LBAM eradication program that included as its primary eradication tool the aerial spraying of urban areas where LBAM had been found with a pheromone pesticide. This emergency eradication program had two primary justifications.

1) CDFA and USDA must act quickly and aggressively to protect California and U.S. agriculture and forests from LBAM, a savage voracious defoliator that would destroy field and farm, park and wilderness.

2) Such a program had to be initiated in order to comply with international trade regulations and quarantines to allow for continued trade of agriculture exports.

The LBAM eradication program was met with huge public resistance. Research and investigations by independent scientists and members of the public, which included an excursion to New Zealand, interviews with LBAM experts, and reviews of the available scientific literature immediately called into question the safety, efficacy, and necessity of the LBAM eradication program. This in turn led to questions about why LBAM was given Class A designation in the first place, and whether that classification should be reevaluated according to formal international standards of pest-risk assessment, something that was never conducted for LBAM.

The LBAM Reclassification Petition provides a comprehensive review of the scientific literature on LBAM over the past 70 years, findings of experts, and a review of the management of LBAM within the context of modern agriculture practices. The Petition

also provides a detailed review of the actual effects of LBAM on crops and native flora separate from the effects on trade imposed by quarantines.

The Petition provides evidence and rationale that LBAM represents a pest of minor significance that is easily managed in agriculture settings by naturally occurring biological parasitoids and predators and has had and will have no negative effects on native flora. It contends that if a formal pest-risk assessment is conducted according to internationally accepted standards that the realities of LBAM lifecycle and ecology will properly consign the moth to the category of a Class C/non-actionable insect in a manner that is consistent with other closely related native Tortricids, such as the orange tortrix (*Argyrotaenia franciscana*). The Petition also contends that this review should be used in negotiations with international trading partners in seeking a harmonized LBAM classification that is consistent with LBAM's status as a minor pest.

Petition Overview

How the Petition was developed

A comprehensive literature retrieval of published LBAM articles was conducted including major US agriculture databases (e.g. Agricola) as well as primary agricultural literature of Australia (Ministry of Agriculture and Forestry) and New Zealand (HortResearch). All references used by USDA and the reviews used by USDA to justify the LBAM eradication program were also retrieved. The information and recommendations in the LBAM reclassification petition were developed from a review of the primary scientific literature on the biology, behavior, and impacts of LBAM on crops and native flora. This review included agricultural journals and documents from Australia, Hawaii, and New Zealand; a field study in New Zealand growing regions; interviews with experts in horticulture, pheromones, biological controls, and integrated pest management; and communications with agricultural officials and LBAM specialists worldwide. Also included is a critical review of the published documents cited by USDA/CDFA in their justification for the existing LBAM classification and the existing LBAM eradication program. This petition also includes a synopsis of the most seminal scientific findings from the recent CDFA research conference on LBAM research priorities. National and international guidelines for pest

classification, pest-risk-assessments, and the development of emergency pest management programs were reviewed. Incorporating guidelines from various sources regarding pest classification, including those provided by the USDA and CDFA as well as International Standards for Phytosanitary Measures of the Food and Agriculture Organization of the United Nations, the LBAM reclassification petition addresses the primary fields of information needed to consider reclassification. The entire Petition was reviewed by a variety of experts in agriculture, agriculture policy, botany, horticulture, entomology, and integrated pest management (IPM). Copies of the available references cited were provided to USDA and CDFA with the Petition.

How the Petition was submitted

The LBAM Reclassification petition was submitted to the USDA on September 26, 2008 by Congressman Sam Farr (D-17th District). At the same time, the Petition along with all the primary references used were sent directly to USDA Secretary Ed Schafer and CDFA Secretary AG Kawamura.

What the Petition demonstrates

The LBAM Reclassification Petition shows that according to the overwhelming majority of scientific literature LBAM is a pest of minor economic significance and has had no negative impact on native flora in any country or habitat where LBAM is endemic or naturalized. According to the overwhelming majority of agriculture and LBAM-specific experts, in the absence of excessive organophosphate use, LBAM is easily managed in crop systems and seldom reaches a level of population density to cause significant crop damage. It is primarily considered a minor pest that is primarily of significance due to US trade restrictions against it and is easily managed as a crop-quality issue by agriculture producers.

Numerous agriculture and IPM experts support the reclassification of LBAM from Class A/actionable to Class C/non-actionable. Class C pests are dealt with as growers and buyers deem necessary in order to meet trade requirements. The experience of agriculture interests in Australia and New Zealand show that, with the exception of the

United States, they have little difficulty exporting their agriculture products to international trading partners. Hawaii agriculture producers reported the same. Prior to the USDA-imposed quarantines, Hawaii had previously had no export restrictions despite LBAM's presence there for more than 100 years. Similarly, based on USDA import data, relatively few shipments to the US are rejected due to LBAM. The data in the petition clearly shows LBAM to be a minor pest similar to other moths in its same leafroller family, and the same controls that are used for other leafrollers (such as the orange tortrix, omnivorous leafroller, and codling moth) also control for LBAM. While each of these insects require monitoring and varying levels of control and, some are restricted by other countries, none of them constitute a level of threat warranting eradication or quarantines.

Justification for Reclassification

According to international standards of pest-risk assessments (International Plant Protection Convention) (ISPM 2007), first and foremost among the criteria that can justify the re-evaluation of the classification of a pest, is the simple discovery of a pest in a new area. As is the case with LBAM, classifications of a particular insect may be based on decades-old reviews that may warrant changing over timer time. Other factors prompting the reclassification of a pest are emerging science, greater understanding of the biology of the pest than had been previously available, global experience with the pest, and the development of effective control methods. An additional and important consideration in the classification of a newly-introduced pest is whether the pest can be eradicated with the current tools available and whether there is public support to allow eradication efforts to move forward. These concerns have all been addressed in the LBAM Reclassification Petition, with the conclusion by the petitioners and support of entomology experts that eradication of LBAM is neither needed nor achievable. The petitioners firmly believe that scientific evidence and political reality support this assertion.

The information and recommendations in the LBAM reclassification petition were developed from a review of the primary scientific literature on the biology, behavior, and impacts of LBAM on crops and native flora. This review included agricultural journals and documents from Australia, Hawaii, and New Zealand; a field study in New Zealand

growing regions; interviews with experts in horticulture, pheromones, biological controls, and integrated pest management; and communications with agricultural officials and LBAM specialists worldwide. Also included is a critical review of the published documents cited by USDA/CDFA in their justification for the existing LBAM classification and the existing LBAM eradication program. This petition also includes a synopsis of the most seminal scientific findings from the recent CDFA research conference on LBAM research priorities.

Petition Contents and Summary of Findings

Part I of the petition provides an overview of the current classification of LBAM, with a critical analysis of the scientific reviews used by USDA and CDFA in their classification of LBAM. Part I also includes a discussion of the recommendations made by the USDA LBAM Technical Working Group (TWG) in recommending eradication. Though most members of the TWG are experts in various aspects of entomology and pest management, only a few members have significant experience with LBAM. As a consequence, many of the recommendations made by the TWG do not accurately reflect the nature of LBAM, in particular the relatively high degree of mortality of LBAM (90-99%) through natural biological factors and the relative ease with which it is managed in agricultural settings. More importantly, many of the recommendations of the TWG were based on a very limited subset of LBAM data that suggested that it may be possible to eradicate LBAM, a goal that numerous independent experts say is neither needed nor achievable. Of practical importance, many of the recommendations TWG considered to be critical to eradication were not implemented by CDFA greatly lessening the chance for successful eradication. Lastly, many of the tools central to eradication (e.g. aerial spraying of biocidal agents, pheromone sprays, and placement of twist ties on private properties) have been obstructed by public opposition, and is guaranteed to continue.

Part I further discusses the LBAM eradication efforts within the context of Section 18 of the USDA Emergency Manual. USDA's Emergency Manual outlines the parameters, which, if met, can be used as justification for the termination of an emergency program. The LBAM eradication program was developed under an emergency declaration.

However, two California courts (Monterey and Santa Cruz) declared that CDFA did not provide evidence to suggest that an emergency existed. Section 18 of the USDA Emergency Manual states that if any single criteria is met, this can be used to justify the termination of an emergency program. The Petition demonstrates that a number of the criteria for the cessation of this emergency eradication program have been met namely: no emergency exists; eradication cannot be achieved given the current densities and spread of LBAM populations; adequate agricultural control measures exist; socio-political opposition does not foster a successful eradication and social acceptance of eradication methodologies is a critical component of a successful eradication program.

Part II provides an in-depth review of the scientific literature on the biology of LBAM, with a specific focus on LBAM's threat as a pest and specifically examines the literature cited by USDA/CDFA in justifying LBAM's current pest status. This review shows that USDA/CDFA only used a very small sampling of the available LBAM literature, were selective in their review, and that oftentimes, the conclusions made by USDA/CDFA did not accurately reflect the totality of the literature cited in their reviews.

Part III provides a review of the presence and management of LBAM in both endemic and naturalized habitats. This review focuses on the pest status of LBAM in Australia, New Zealand, and Hawaii, and further details the presence of LBAM in California. It is clear from this information that LBAM is easily and cost-effectively managed as a crop quality issue in a manner similar to orange tortrix.

Part IV discusses the effects of LBAM on native flora as documented in the scientific literature; addresses concerns about native flora as raised by USDA/CDFA; presents findings of surveys of forest insects in various countries; and provides expert opinion on LBAM's presence in forest ecosystems. There is no scientific support for USDA/CDFA or California Forestry Department allegations to show that LBAM has had any negative affect on native flora anywhere in the world where it is present. For example, LBMA has been in Hawaii for more than 112 years and the United Kingdom fore more than 85 years and

neither region has reported any damage of either agriculture crops or native flora due to LBAM.

Part V discusses LBAM eradication and whether this is achievable, both within the context of the tools available and in the face of public opposition; discusses criteria for successful eradication, most of which are not currently being met; and provides an overview of the classification of LBAM within the context of other biologically similar pests that are of little economic consequence and are not classified as actionable.

Part VI provides an overview of the effects LBAM quarantines have on farms and nurseries, both domestically and internationally. Part VI also suggests that the trade restrictions that must be adhered to, the expense incurred, and the control/eradication measures that must be implemented are not warranted for a pest of such minor significance. The literature is clear that LBAM populations are sporadic and transient and are not subject to emergence into crop-destroying infestations. When LBAM does cause damage, the damage is generally superficial and of relatively little economic consequence and typically arise due to poor agriculture practices, such as the excessive use of biocides which destroy LBAM predators. Most costs associated with LBAM internationally arise from the burden of meeting U.S. quarantine requirements, not from grower attempts to prevent possible LBAM-inflicted crop damage.

Part VII outlines integrated pest management practices that have been shown to be effective in the management of LBAM in other countries. The ability to adequately control a pest within agriculture systems is one criteria that itself can justify the reclassification of a pest. LBAM is successfully and cost-effectively controlled in Australia and New Zealand and many of the pest management practices used to control other pests also control for LBAM.

Note: All references for the information presented are provided in the complete LBAM Reclassification Petition

Lessons from the LBAM Reclassification Petition

Insect, pest, kill—an entomological and agency mindset

It is clear that when it comes to the introduction of an exotic insect, there is a propensity for those charged with the defense of the agriculture system or those in pest management to only look at what the insect may do from a worst-case scenario, even going so far as to extrapolate worse-case scenarios based on theoretical mutations or metamorphosis of a generally benign insect into an insect of mass destruction. While this may be a legitimate perspective, equally legitimate is to review a best-case scenario and other potential scenarios between these extremes. Numerous insects and exotic plant species are being introduced into already existing biosystems at an incredible pace. While some rarely emerge as destructive pests the overwhelming majority meld into the biosystem occupying niches not already occupied or competing with already occupied niches. In healthy biosystems, new equilibriums generally emerge. In contemplating the types of actions that are to be taken when such an exotic is newly identified, one must determine what the totality of the scientific literature suggests will be the most likely scenario. The totality of the scientific literature shows that LBAM is a general superficial feeder that does not preferentially attack any crop, preferentially feeds on herbaceous weeds, only incidentally gets into fruit crops, and that the damage caused is relatively minor and superficial. As a general feeder LBAM is also general prey of many predators and parasitoids and is therefore predominantly a food chain insect. California has more than 300 moths that are closely related to LBAM, while there are more than 1200 related Tortricids throughout North America. Some species are so close as to be difficult to distinguish from each other. Similarly, many of the same parasitoids and predators that maintain an equilibrium of native tortricids in the environment have been shown to prey on LBAM and LBAM larvae.

According to the available published literature, entomologists in general appear to have difficulty in considering insects according to ecological data and theories. This deficiency limits entomologists to a perspective of seeing insects and insect ecology as problems to be solved, instead of seeing insects as part of a larger chain of life. Once an

insect species is seen as part of the ecosystem where it resides, the question of how it should be managed (and indeed, if it needs to be managed at all) has to be viewed through the lens of how that species interacts within its ecosystem. The most relevant question is whether a particular exotic species will have a positive, negative, or neutral effect on the ecosystem to which it has been introduced. This is a question regarding the classification and treatment of LBAM that was never asked. There is no evidence to suggest that LBAM is a driver of ecological diversity anywhere in the world where it is endemic or naturalized or that it disrupts native ecosystems.

As for exotic insects in particular, it is far more likely that exotic insects will blend into the fabric of existing ecosystems without disrupting the biosystem than it is likely that exotic insects will become destructive pests. This is especially true for exotic insects that are closely related to existing native insects, though exceptions to this rule obviously exist.

Consequences of inappropriate "pest" classification

The classification of LBAM as an actionable pest requiring eradication initiates actions that can greatly contribute to the generation of the insect becoming a pest. The current LBAM eradication program has resulted in broad and scheduled treatments of farms, nurseries, and vineyards with biocidal agents such as *Bacillus thuringiensis* (Bt), chlorpyrifos, and spinosad, even when there was no LBAM present. Many farms and nurseries choose to treat in order to prevent initiating quarantines should an LBAM be found. The scientific LBAM literature is clear that inappropriate use of biocides and the subsequent killing of natural predatory factors that occurs with biocide use is the primary factor that can result in increases in LBAM populations and its increased risk as a threat. The die-off of beneficial predators from eradication treatments fosters a rise in both endemic and exotic pests, something that good agricultural practices strive to prevent.

Inappropriate decision to eradicate—inappropriate eradication tools chosen

It appears the decision to move to aerial spraying of urban areas with pesticides was done very hastily and without adequate scientific support for either the need for eradication or the tools that were to be used. No damage to any crop or native habitat had occurred

when the eradication program was initiated and, more than 3 years after LBAMs identification in California, no economically significant damage has been caused by LBAM. There has, however, been crop damage caused by USDA inspectors and damage to ecosystems due to scheduled treatments with biocides. Moreover, the countries most effected by LBAM, namely Australia and New Zealand, have developed IPM practices that readily control for LBAM to such a degree that exports internationally are generally not a problem. This is similarly true in the Hawaiian Islands where LBAM has been for more than 112 years. In this time no damage to crops or native flora has ever been reported, and until the USDA-initiated quarantines, Hawaii never had restrictions imposed against Hawaiian crops by international trading partners due to LBAM. Thus the very justification for the need to eradicate must be questioned.

Regarding eradication tools, the general category of pheromone pesticides (mating disruption) chosen had never been used for the eradication of a pest. Prior to LBAM, no pheromone had ever been used as the central tool in the successful eradication of a species. Rather, pheromones are predominantly population suppression tools that must be used with biocides. The inability to use effective biocide treatments in urban areas therefore severely limits the ability of pheromones to assist in eradication of the species. The specific pheromone chosen for LBAM was chosen not for its efficacy, but because it was the only available tool at the time. USDA memos show that there was awareness within the Agency that the effectiveness of the pheromone to be used was questionable. And, the spraying was commenced at a time of relative LBAM senescence and during the rainy season, a time when the moths are not mating and when aerial spraying is least effective a tool. The addition of using chlorpyrifos in neighborhood nurseries and attempts to place pheromone twist ties in private yards were additional decisions that has led to public opposition to the eradication program overall.

These basic scientific deficiencies in the justification and development of the LBAM eradication program were compounded by misrepresentations on the part of Agriculture officials who alleged that the eradication tools being used were tested for safety, though they were not, and that LBAM would destroy native redwoods, cypresses, oaks, and have

potentially devastating effects on native flora. This latter assertion is not supported by any LBAM literature.

Consequences of inappropriate eradication efforts

The decision to move to an eradication program without a comprehensive review of the literature and implementation of programs for convenience rather than efficacy jeopardizes the credibility of agriculture agencies and the ability to move against serious pests in the future. Efforts to eradicate new pests that may represent a true danger, such as the recent introduction of the Asian citrus psyllid, may meet with the same opposition due to the seeming poor development and mismanagement of the LBAM eradication program. The continuation of the LBAM eradication program will do nothing but create ever-increasing antagonism between the public, agriculture, and regulators. Serious consideration of this petition and the current classification of LBAM are needed.

Unfortunately, once eradication programs are in place there is considerable investment by the initiating agencies in maintaining such programs because the very scope and breadth of such programs require major justifications for their existence. This makes agencies promulgating eradication programs reluctant to change their strategies, even in the face of evidence that these programs are not necessary or will fail; as noted in the agriculture literature, oftentimes optimism overtakes scientific justification and scrutiny. In the case of LBAM, both CDFA and USDA have established dedicated LBAM Departments within their respective agencies that now require budgetary justification for their continuance. In times of limited budgetary resources, eradication funds should be allocated when the scientific literature and broad opinion of experts are aligned regarding the need for eradication. This is not the case with LBAM.

The petitioners feel a through review of LBAM according to internationally accepted standards of pest-risk assessment is necessary before any further pesticide treatments of residential areas are undertaken. Exposing people in their homes to pesticides is a serious matter and should not be implemented without solid scientific justification. Justification for doing so thus far has been based on an outdated and faulty understanding of LBAM biology and its status as a "pest".

True sustainability in agriculture requires a keen sense of the larger biology of ecosystems, rather than being limited by the often-narrow perspectives of regulatory measures. The current USDA/CDFA approach to LBAM management carries within it many of the larger issues of modern agriculture and presents a case history in how pest-management should not be approached.

Conclusion

The use of blanketed aerial pesticides over urban areas for eradication of a species is a very serious matter and should never be taken lightly. In absence of a serious threat to health, all reasonable steps should be taken to ensure the program is justified by the available scientific data, is achievable with the available tools, and has the public's support to carry it out. The data used to justify the LBAM eradication program was selected from a very limited and dated subset of the available scientific literature, was selectively used to justify the program not evaluate the true biology of LBAM and its status as a pest, and did not reflect the management of LBAM in modern agriculture systems. Such programs should also not be implemented when there is risk of pesticide exposure to the general public when the purpose is only for economic reasons. In the future, any such program should include a complete pest-risk assessment prior to the implementation of the program. Such pest-risk assessments should be conducted according to internationally accepted standards. The LBAM Reclassification Petition provides solid evidence that LBAM is such a pest of minor economic significance and is readily managed by naturally occurring biological controls and good agricultural practices that its status as an 'actionable pest" by USDA is not warranted. Further, we recognize that other countries impose the same restrictions on LBAM as the US has done. The LBAM Reclassification Petition provides scientific documentation and justification for negotiating with trading partners in seeking a harmonized LBAM classification that reflects this insect's status as a minor pest that is easily and cost-effectively managed in modern agricultural systems.

Executive Summary of LBAM Reclassification Petition

• LBAM being “listed” as a pest of concern, which led to quarantines in its name, began in the United States in 1957. This listing was based on a single reference from 1937 that reported “potential” crop damage due to LBAM.

• Outside the U.S., LBAM emerged as a potential threat to crops almost only under circumstances of excessive biocide use that eliminated beneficial parasitoids and predators.

• The literature selected by USDA and CDFA for its consideration of LBAM as a serious pest of economic significance requiring eradication referred to highly anomalous situations where LBAM's injuriousness to crops resulted from poor agriculture practices and excessive organophosphate use.

• The scientific literature used by USDA and CDFA to classify LBAM as an actionable pest relied on only a small and select sampling of the available literature. These selected reviews did not accurately reflect what the sum of findings actually do show, which is that the threat to crops from LBAM is small and the damage to native flora almost non-existent.

• The literature cited by USDA and CDFA in their classification of LBAM as an actionable pest provided no review of current LBAM management practices in countries where LBAM is endemic or where the insect has been introduced.

• The potential damage to crops projected by USDA and CDFA did not use accurate baselines and consisted primarily consist of speculation and exaggeration. That these projections are inaccurate is backed up both by the overall scientific literature and data obtainable from current agricultural practices.

• Research on current and historic agricultural practices demonstrates very minor actual damage to crops from LBAM in countries and locales where LBAM is native or an established exotic. Episodic minor damage can occur but is easily managed within in agriculture systems.

• Detailed review of the scientific literature on the biology and population dynamics of LBAM show that no significant damage to crops from LBAM is expected to occur in California or the U.S., given the state of modern agricultural practices. Post year-2000 data and experience from all over the world show that LBAM should be handled as a crop-quality issue, not as a quarantinable pest.

• A review of the biology of LBAM demonstrates that it is a opportunistic and superficial feeder on crops of economic value; that it prefers herbaceous plants; and that its polyphagous nature both safeguards it from becoming a serious pest and prevents it from being eradicable.

• LBAM is easily controlled in agricultural settings; few biocide treatments are needed as natural parasitoids and predators provide a high degree of control. Most LBAM controls outside the U.S. are applied to meet U.S. quarantine requirements and not be used to prevent any potential crop damage; many of the controls used for other pests also control for LBAM.

• A review of LBAM biology demonstrates that a large number of common native predators widely present in the U.S. feed on all life stages of LBAM. In fact, LBAM is subject to such widespread parasitization that parasitization frequently can take place in more than 99 percent of all LBAM larvae. The likelihood of this high degree of parasitization and predation has been demonstrated in experiments with LBAM in California. This experimental evidence appears to be corroborated by the lack of LBAM presence in California agriculture, despite the high densities of LBAM populations in the areas surrounding fields and farms. Natural predation and existing controls, in both

agricultural systems and in the wild, are the best explanation for why LBAM populations remain almost non-existent throughout California agriculture.

• In countries and locales where LBAM is established, there is no significant or lasting damage to native habitats due to LBAM and damage to native flora is almost impossible to find.

• In Australia (where LBAM is native) and New Zealand (where LBAM has been naturalized), LBAM is considered to be a pest of minor significance for most crops. It is predominantly U.S. quarantine restrictions that make LBAM a pest of serious concern in Australia and New Zealand.

• Primary U.S. trading partners such as Canada and Mexico followed trade policies of the U.S; these trading partners did not initiate LBAM quarantines. These trading partners maintain LBAM quarantines for the most part to maintain access to U.S. markets.

• In the Hawaiian islands where LBAM has been established for 112 years, no damage to crops or native flora has occurred and LBAM has not been a pest of significance anywhere on any of the islands.

• The presence of LBAM in Hawaii never invoked quarantine restrictions by Hawaii's trading partners until the USDA quarantine restrictions were enacted upon the discovery of LBAM in California in 2007.

* USDA/CDFA did not examine the status of LBAM with other key U.S. trading partners, namely the European Union (EU) and the United Kingdom (UK) and Ireland. LBAM was introduced into the UK during the 1930s and is generally ubiquitous there. Despite a 78-year history in the UK, LBAM is not quarantined for there. LBAM is also not considered to be a serious agricultural pest in the U.K., and no damage to U.K. native forests has

been reported.

- LBAM is not quarantined in the entire EU.

- LBAM is very similar biologically to other insects that occur in California, particularly the orange tortrix and omnivorous leafroller. Neither of these leafrollers are classified as an actionable pest.

- An “actionable” (USDA) or A (CDFA) classification requires quarantine actions that cause severe hardships on farmers and nurseries.

- No comparison of the cost or effectiveness of control measures, as compared with eradication, has been conducted.

- LBAM population densities, the spread of LBAM populations, available eradication tools, and public opposition suggest that eradication efforts will not succeed.

- The scientific information presented at the July 2008 CDFA-sponsored scientific symposium supports the basic findings presented in the reclassification petition: specifically, that LBAM is not a pest of major economic significance and is easily managed in agriculture settings through the implementation of integrated pest management practices.

- Implementing eradication programs for pests that do not deserve them have severe consequences for the public and farmers. Such ill-advised programs jeopardize the potential for future eradication programs that may be needed when a truly serious pest emerges.

About the Authors

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