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Pest Risk Evaluation on Palms and Cycads for Light Brown Apple Moth (LBAM): Can They Be Exempted?

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BACKGROUND

From the time light brown apple moth, *Epiphyas postvittana*, was discovered in California in 2006, APHIS and the California Department of Food and Agriculture (CDFA) have taken steps to prevent its spread by implementing the *E. postvittana* Federal Domestic Quarantine Order (APHIS, 2007). This Federal Order defines quarantine areas and restricts the movement of numerous agricultural commodities.

For some of the regulated commodities, the likelihood of spreading *E. postvittana* may be sufficiently low to justify exempting these commodities from the quarantine, based on host status and specific industry practices.

Previous Plant Protection and Quarantine (PPQ) documents (APHIS, 2012a, 2012b, 2013) have led to the exemption of several commodities from the Light Brown Apple Moth (LBAM) program requirements. This current document is in response to a request from the California Association of Nurseries and Garden Centers exempt palms and cycad plants from all intrastate regulatory requirements contained in Title 3, Division 4, Chap. 3, Sect. 3434 *E. postvittana* Interior Quarantine (Zanobini, 2015). The request for exemption notes that palms and cycads are not known hosts of light brown apple moth, that the plants would not sustain larval development, and that the nursery industry applies the principles of integrated pest management and is aware of the danger from LBAM.

Since its discovery in California, APHIS and the California Department of Food and Agriculture (CDFA) have taken steps to prevent the light brown apple moth from becoming widely established by enforcing quarantine areas and implementing certain restrictions on movement of agricultural produce out of quarantine areas. In addition to the program requirements, specific production practices for each commodity may reduce the risk of moving light brown apple moth out of the quarantine areas.

ASSESSMENT

We have already established that the consequences of introducing LBAM to new areas of the United States are unacceptable, so here we will focus only on the likelihood of introduction. We consider the chain of events that must occur for the light brown apple moth to move outside of the quarantine area on a commodity and become established in new locations, and the likelihood of that happening. The following steps must be successfully completed:

1. The commodity must serve as a host for LBAM, and larvae must be present on the commodity during production
2. LBAM larvae must remain with the host plant through inspection and packing
3. LBAM larvae must survive shipment and arrive in an area suitable for their establishment
4. Larvae must escape from the host commodity into the open environment
5. Larvae must complete development to adults
6. From the resulting adults, moths of opposite gender must find each other and mate
7. Mated females must find host plants on which to oviposit
8. The resulting eggs must hatch and larvae develop through to adulthood in quantities sufficient to produce a breeding population

Host status is the first step in the chain of events needed to start a new LBAM population outside of the quarantine area through human intervention. Plants not known to be hosts are highly improbable pathways for LBAM introductions into new areas. Lack of host evidence indicates that the plant is probably not a preferred host, and that large infestations are highly unlikely to occur on that host. Light brown apple moth has been in California for almost ten years and a large body of host data has been collected over that period.

In a survey of published information about light brown apple moth, including Danthanarayana (1975), Geier and Briese, (1981), Wearing et al., (1991), and the recent literature search on host status by Brockerhoff et al., (2011), we found no reference to palms or cycads as hosts of the pest. These sources include the native range of the pest in Australia and New Zealand. Since palms and cycads are not hosts of light brown apple moth, they pose negligible risk of moving populations of the insect out of quarantine areas.

Recommendation

Exempt palms and cycads from all intrastate regulatory requirements contained in Title 3, Division 4, Chap. 3, Sect. 3434 *E. postvittana* Interior Quarantine.

References

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