

Review of the System Approach for Mexican Avocado

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In November 1998, APHIS proposed a program review of the Mexican avocado program. The review would occur at the end of the second year of exports. Based on this review APHIS would consider expansion of the area of distribution for Mexican avocado from the present 19 states. This review has been completed and is documented below.

The primary sources for information for the review were:

- Site visit to Michoacan, Mexico in February, 1999 by Ronald Campbell, Alan S. Green, Peter Grosser and Charles “Ed” Miller, from Riverdale, Maryland, APHIS. The site visit included the review of harvest, packing house and trapping activities. The two Mexican entomologist responsible for identify the pests trapped or found during the program activities were interviewed. In addition various U.S. and Mexican inspectors, and Herb Murphy APHIS avocado program director were interviewed.
- Work plan for the exportation of Hass Avocados from Mexico to the United States of America, 1998.
- Risk Management Analysis: A systems approach for Mexican Avocado, APHIS, May 1995.
- Importation of Avocado Fruit (*Persea Americana*) from Mexico: Supplemental Pest Risk Assessment, May 1995
- Letters from the California Avocado Commission dated January 4, 1999, February 3, 1999, and March 12, 1999.
- Mexican Avocado Summary as April 15, 1999; This summarize the illegal movements of Mexican avocado fruit outside of the 19 approved states.
- Mexican Avocado Intransit to the 19 Northeastern States, Final Report: FY 99 shipping season; This summarize the activities at the US/Mexican border.
- Trapping survey and pack house data for both shipping season provided by Herb Murphy.
- Pest interception records

This document will assess the review findings for each of the nine required risk mitigation measures.

1. Field Surveys

The CFR requires that at least 300 hectares from each municipality be surveyed for the avocado seed weevils and avocado seed moth. This includes all orchards exporting to the United States, and wild and backyard trees. The surveys include foliage sampling of ten tree per hectare, fruit cutting of 250 fruits per hectare, and visual inspection of the orchard for symptoms of the stem weevil. This measure is designed to provide a large degree of risk mitigation for the seed weevils and moth, and the avocado stem weevil. In addition it provides some protection from the *Anastrepha* fruit flies and other pests mainly from the required fruit cutting.

APHIS actively took part in the surveys in the orchards that exported to the United States. The review of the summary data, discussion with Mr. Murphy and the negative finding of any of the target pests from the harvested fruit indicated that the surveys were adequately conducted. In fact, Sanidad Vegetal (SV) surveyed various orchards without APHIS and then re-surveyed selected orchards with APHIS. No stem weevils were found in any of the re-surveys (see attachment 1 for details).

2. Fruit Fly Trapping Activities

APHIS requires that trapping be conducted in the approved municipalities for Mediterranean fruit fly (1 trap per 1 to 4 square miles) and in the approved orchards for *Anastrepha* fruit flies (1 trap per 10 hectares).

Observations during the site visits of the record keeping, trap placement, and trap conditions; and discussion with the program director indicated that the trapping program followed the protocol described in the work plan (see attachment 2 for trapping results).

3. Field Sanitation

The regulation requires that fallen fruit must be removed from the orchard at least one every 7 days and that dead branches be pruned and removed.

This requirement is to mainly mitigate the risk from the stem weevil and the *Anastrepha* fruit flies. The observations of the orchard during the site visit indicated that compliance with this requirement is adequate.

4. Host Resistance

The CFR limits the exportation to the Hass variety of avocados only. The evidence shows that this variety is either not a host or a poor *Anastrepha* fruit fly host prior to harvest.

No evidence was found of the shipment of other avocado varieties. The field and packing house fruit cutting (2,897,926 fruit for both seasons) indicates that the host resistance is real.

5. Post-harvest Safeguards

The regulation requires that the harvested fruit be protected from fruit fly infestation within 3 hours of harvest.

All of the trucks moving the fruit from the orchards and the packing houses were adequately screened or otherwise covered. A potential hitchhiker problem was identified at the Calavo pack house. Shipping boxes were being stored outside under a roof with large lights hanging directly above the boxes.

6. Winter Shipping Only

The importation of the Mexican avocado fruit is permitted only during the months of November, December, January, and February. This requirement helps mitigate the risk for the *Anastrepha* fruit flies.

No evidence of non-compliance of this requirement was found during the review process.

7. Packing House Inspection and Fruit Cutting

The regulation requires that prior to the culling process a sample of 300 fruit per shipment must be selected, cut and inspected by SV. This is to provide protection from all of the targeted pests. A total of 417,900 fruit were cut the first year and 203,250 were cut the last season.

The site visits to some of the packing houses indicated that the lighting at the place where the fruit was cut was inadequate. The fruit cutting and inspection of the fruit in some of the packing houses was not adequate to detect the stem weevil. The top of the fruits were not carefully inspected nor were small thin cuts made in this area. Sanidad Vegetal inspectors did not have hand lens. The work plan requires that each fruit in the sample be cut into slices and inspected for fruit flies, seeds pests and the stem weevils.

8. Port-of-Arrival Inspection and Clearance Activities

The measure helps mitigate risk for all the targeted pests.

A review of the summary data, interception records and phone interview with Claudio Garcia, Field Avocado Coordinator, APHIS and other APHIS employee at the ports-of-arrival indicated that this safeguarding measure is being conducted appropriately. A total of 907 shipments were cleared and over 27,000 fruit cut by APHIS port-of-arrival officers with no actionable pests found.

9. Limited U.S. Distribution

The CFR limits the distribution of these fruits to 19 northeast U.S. States. This measure reduces the risk for all targeted pests.

Of the 883,461 boxes shipped to the 19 states in the 1999 season, 3,114 boxes are known to have been illegally distributed to non-approved states. Three of these boxes were sent to an avocado growing state (Florida). Approximately 5 Percent of the fruit from these illegally distributed shipments were inspected or/and cut with no actionable pests found.

General Comment

The level of supervision by the SV and APHIS inspectors were found to be adequate or more than adequate for all critical steps in the work plan.

Conclusion

In conclusion, problems were identified in the packing house fruit cutting process and in the non-compliance by certain fruit distributors in the 19 approved states, but the overall program was successful. No targeted pests were found in the packing houses, at the US/Mexican border or in the seized avocado found outside of the approved states.