

**IMPORTATION OF *ORIGANUM* SPP.
(OREGANO, SWEET MARJORAM) AS LEAVES AND
STEMS FROM EL SALVADOR AND HONDURAS
INTO THE CONTINENTAL UNITED STATES**

A Qualitative, Pathway-Initiated Risk Assessment

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A. Introduction

This risk assessment (RA) was prepared for the Animal and Plant Health Inspection Service, (APHIS), U. S. Department of Agriculture (USDA) under Purchase Order Number 43-6395-0-2185 (dated June 27, 2000). The project was supported by the U. S. Agency for International Development under Project Hurricane Mitch Economic Initiative.

The purpose of this RA is to examine risks associated with the importation into the United States of fresh leaves and stems of *Origanum* spp. (oregano and sweet marjoram) from El Salvador and Honduras.

This RA is a qualitative one in which risk is expressed in terms such as high and low rather than in numerical terms such as probabilities or frequencies. The details of the methodology and rating criteria can be found in: Pathway-Initiated Pest Risk Assessments: Guidelines for Qualitative Assessments, Version 5.0 (USDA, 2000a).

Regional and international plant protection organizations, e.g. North American Plant Protection Organization (NAPPO) and the Food and Agriculture Organization (FAO) of the United Nations provide guidance for conducting pest risk analyses. The methods used to initiate, conduct, and report this RA are consistent with guidelines provided by NAPPO and FAO. Our use of biological and phytosanitary terms conforms to the, Definitions and Abbreviations (Introduction Section) in International Standards for Phytosanitary Measures, Section 1-Import Regulations: Guidelines for Pest Risk Analysis (FAO, 1996).

The FAO guidelines describe three stages of pest risk analysis: Stage 1 (initiation), Stage 2 (risk assessment), and Stage 3 (risk management). This document satisfies the requirements of FAO Stages 1 and 2.

B. Risk Assessment

1. Initiating Event: Proposed Action

This RA is commodity based and therefore “pathway-initiated.” It was conducted in response to a request for the USDA to authorize the importation of a particular commodity presenting a potential plant pest risk. The importation into the United States of fresh leaves and stems of oregano and sweet marjoram as a commodity from El Salvador and Honduras is a potential pathway for the introduction of plant pests. The regulatory authority for the importation of fruits and vegetables from foreign sources into the United States may be found in the Code of Federal Regulations (7CFR§319.56).

2. Assessment of Weediness Potential of Oregano

The results of weediness screening for oregano and sweet marjoram from El Salvador and Honduras (Table 1) did not prompt a pest-initiated risk assessment.

Table 1. Process for Determining Weediness Potential of the Commodity

Commodity: Fresh leaves and stems of oregano and sweet marjoram for consumption.

Phase 1: *Origanum vulgare* and *O. marjoram* L. are widely grown in the United States in. *O. maru* L. (Egyptian marjoram) and *O. onites* (pot marjoram) may be cultivated in the United States (USDA, 2000b).

Phase 2: Is the species listed in:

YES Geographical Atlas of World Weeds (Holm *et al.*, 1979).

Listed as present but of unknown importance are *O. vulgare* in the United States and *O. bileri* P. H. Davis in Turkey.

NO World's Worst Weeds (Holm *et al.*, 1977).

NO Report of the Technical Committee to Evaluate Noxious Weeds; Exotic Weeds for Federal Noxious Weed Act (Gunn and Ritchie, 1982).

NO Economically Important Foreign Weeds (Reed, 1977).

NO Composite List Of Weeds (Weed Science Society of America, 1989).

NO World Weeds (Holm, *et al.*, 1997).

NO Is there any literature reference indicating weediness (*e.g.*, AGRICOLA, CAB, Biological Abstracts, and AGRIS search on "species name" combined with "weed").

Phase 3: Conclusion: *Origanum vulgare* and *O. majorana* are widely grown in gardens in the United States and *O. vulgare* is already listed as a weed of unknown importance in the United States. The weediness potential of importing *Origanum* spp. from El Salvador and Honduras is negligible.

3. Previous Risk Assessments, Decision History and Pest Interceptions for *Origanum* spp. from El Salvador and Honduras

Decision history: None (APHIS, 2000a).

Pest interceptions at ports of entry: None (APHIS, 2000b).

4. Pest Categorization

The names of pests that have been reported in the scientific or regulatory literature (as listed in the literature cited section) to infest oregano and sweet marjoram from El Salvador and Honduras are recorded in Table 2. Table 2 also presents information about geographic distribution, host associations and regulatory data. Table 2 represents a “master list” of these organisms and serves as a basis for selecting pests for more detailed biological analysis.

Table 2. Pests Associated with oregano and sweet marjoram in El Salvador and Honduras.					
Pest Name (Order: Family)	Geographic Distribution ¹	Plant Part Affected ²	Quarantine Pest ³	Likely To Follow Pathway ³	References
ARTHROPODS					
<i>Aphis gossypii</i> Glover (Homoptera: Aphididae)	ES, HO, US	L, F, Fw, S	N	Y	Blackman and Eastop, 2000; IIE, 1968; McGuire and Crandall, 1967
<i>Bemisia</i> sp. (Homoptera: Aleyrodidae)	HO	L	Y	Y	Metcalf and Metcalf, 1993; Salgado-Cambar, 2000
<i>Myzus ornatus</i> (Laing) (Homoptera: Aphididae)	HO, US	L	N	Y	Blackman and Eastop, 2000; IIE, 1969
<i>Octotoma championi</i> Baly (Coleoptera: Chrysomelidae)	CR, GU, HO, NI, PA, US (Texas)	L	Y	Y	Arnett, 1985; Blackwelder, 1946; CABI, 2000; Hill, 1994; Maes and Staines, 1991; Riley and Balsbaugh, 1988; Staines, 1989
<i>Octotoma scabripennis</i> Guerin (Coleoptera: Chrysomelidae)	GU, HO, ES, NI, US (Hawaii)	L	Y	Y	Arnett, 1985; Blackwelder, 1946; CABI, 2000; Habeck, 1976; Hill, 1994; Maes and Staines, 1991; McFadyen, 1988; Staines, 1989

Pest Name (Order: Family)	Geographic Distribution ¹	Plant Part Affected ²	Quarantine Pest ³	Likely To Follow Pathway ³	References
<i>Tetranychus ludeni</i> Zacher (Acarina: Tetranychidae)	ES, HO, US	L	N	Y	Ochoa, <i>et al.</i> , 1994

¹ES = El Salvador, HO = Honduras, US = United States

²L = Leaves, S = Stems, F = Fruit, Fw = Flowers

³Y = Yes, N = No

The absence of biological and taxonomic information at the species level made evaluations difficult. Because species of *Bemisia* occur on oregano in the United States, this genus was not analyzed further. However, the absence of specific biological information should not be equated with low risk and any pest listed as a “Y” is considered a quarantine pest if found on imports of leaves and stems of oregano and sweet marjoram from El Salvador and Honduras. Should such a pest be found on commercial or any other shipments, quarantine action will be taken. Any pest listed as an “N” in the “Quarantine Pest” column is not a quarantine pest. For this commodity, only two pests, *Octotoma championi*, and *O. scabripennis* are further analyzed in Tables, 3, 4, and 5.

5. Consequences of Introduction

The ratings for *Octotoma championi* and *O. scabripennis* for the five risk elements (REs) for Consequences of Introduction are shown in Table 3.

Pest Species	RE #1 Climate/Host Interaction	RE #2 Host Range	RE #3 Dispersal Potential	RE#4 Economic Impact	RE #5 Environmental Impact	Cumulative Risk Rating
<i>Octotoma championi</i>	Medium 2	High 3	Medium 2	Medium 2	Low 1	Medium 10
<i>Octotoma scabripennis</i>	Medium 2	High 3	Medium 2	Medium 2	Low 1	Medium 10

6. Likelihood of Introduction

The ratings for the six sub-elements (S-E) of the risk element, Likelihood of Introduction, are shown in Table 4 for *Octotoma championi* and *O. scabripennis*.

Pest Species	S-E #1 Quantity Imported Annually	S-E #2 Survive Postharvest Treatment	S-E #3 Survive Shipment	S-E #4 Not Detected At Port of Entry	S-E #5 Moved To A Suitable Habitat	S-E #6 Contact With Host Material	Cumulative Risk Rating
<i>Octotoma championi</i>	Medium 2	High 3	High 3	Medium 2	Medium 2	Medium 2	Medium 14
<i>Octotoma scabripennis</i>	Medium 2	High 3	High 3	Medium 2	Medium 2	Medium 2	Medium 14

7. Conclusion: Pest Risk Potential and Suggested Phytosanitary Measures

The pest risk potential rating for the pest listed in Tables 3 and 4 is shown in Table 5.

Pest Species	Consequences of Introduction	Likelihood of Introduction	Pest Risk Potential
<i>Octotoma championi</i>	Medium 10	Medium 14	Medium 24
<i>Octotoma scabripennis</i>	Medium 10	Medium 14	Medium 24

Pest Risk potential ratings have the following suggested meanings (USDA, 2000a):

Low: Pest will typically not require specific mitigation procedures. The port-of-entry inspection to which all imported commodities are subjected can be expected to provide sufficient phytosanitary security.

Medium: Specific phytosanitary measures may be necessary.

High: Specific phytosanitary measures are strongly recommended. Port-of-entry inspection is not considered sufficient to provide phytosanitary security.

Species of *Octotoma* mostly of leaf miners and feeders. The economic significance of *Octotoma championi* Baly was not described in the literature reviewed. The little information that is reported points to a limited host range, primarily, as a pest of *Lantana* spp., *Origanum* spp., *Mentha* spp., and *Sesamum* spp. (Maes and Staines, 1991; Staines, 1989). Although reported to be in Texas, *O. championi* appears to be restricted to Mexico and Central America in tropical and subtropical climatic zones. *O. championi* is a potential candidate for biological control of lantana in tropical areas where the plant is considered weedy and has been released in Australia for that purpose (Riley and Balsbaugh, 1988). In addition, *O. scabripennis* has been released in Australia and in other countries for biological control of lantana (CABI, 2000 and Staines, 1989). In addition to lantana, *O. scabripennis* is reported to feed on *Tectona grandis*, *Lippia umbellatra*, *Origanum* spp., *Mentha spicata*, *Salvia occidentalis*, *Sesamum indicum*, *Vigna unguiculata*, *Phaseolus vulgaris*, and *Stizolobium aterrimum* (Staines, 1989).

As stated in the Guidelines (USDA, 2000a) detailed examination and choice of appropriate sanitary and phytosanitary measures to mitigate pests risk for pests with particular pest risk potential scores or ratings is undertaken as part of the pest risk management phase and is not discussed in this document.

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