

**IMPORTATION OF *NELUMBO NUCIFERA* GAERTNER
(WATERLILY, LOTUS) AS ROOTS FROM EL SALVADOR, GUATEMALA,
HONDURAS AND NICARAGUA 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 *Nelumbo nucifera*, waterlily root or lotus, which is distinct from American lotus, *Nelumbo lutea*, as roots from El Salvador, Guatemala, Honduras, and Nicaragua.

The 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 International Plant Protection Convention (IPPC) administered by the Food and Agriculture Organization (FAO) of the United Nations provide guidance for conducting RAs. 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 risk. The importation into the United States of *Nelumbo nucifera* roots, which are free of soil and leaves, as a commodity from El Salvador, Guatemala, Honduras and Nicaragua 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 *Nelumbo nucifera*

The results of weediness screening for *Nelumbo nucifera* from El Salvador, Guatemala, Honduras, and Nicaragua (Table 1) did not prompt a pest-initiated risk assessment.

Table 1. Process for Determining Weediness Potential of the Commodity

Commodity: Fresh roots (free of stems and leaves) of *Nelumbo nucifera* Gaertner [Nelumbonaceae] (waterlily root, lotus) for consumption.

Phase 1: This introduced species is represented in a plant data base (USDA, 2000b) in 15 States east of the Mississippi of which 5 are above the Mason-Dixon line and 10 in the south.

Phase 2: Is the species listed in:

- YES Geographical Atlas of World Weeds (Holm *et al.*, 1979).
Nelumbo nucifera is listed as a principal weed in Cambodia, Puerto Rico, and Vietnam and as a common weed in Iran and Laos. It is also listed as present but of unknown importance in 10 other countries and Hawaii but not El Salvador, Guatemala, Honduras, and Nicaragua. *Nelumbo lutea* (American lotus) is listed as a common weed in the United States.
- 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 America (Weed Science Society of America, 1989).
Nelumbo lutea (Willd.) Pers. (American Lotus is listed).
- NO World Weeds (Holm, *et al.*, 1997).
- NO Is there any literature reference indicating weediness, *e.g.*, AGRICOLA, CAB, Biological Abstracts, AGRIS; search on "species name" combined with "weed").

Phase 3: Conclusion: This introduced species is represented in at least 15 States east of the Mississippi (USDA, 2000b). The importation of roots for consumption should not constitute a risk based on intended use, the occurrence of the species in the U.S., and the availability of roots in ethnic-oriented food stores. Therefore, the weediness potential is considered as very low.

3. Previous Risk Assessments and Decision History for *Nelumbo nucifera* from El Salvador, Guatemala, Honduras, and Nicaragua

Decision History (APHIS, 2000a):

1975 - Guatemala: Permit entry, free of tops and soil; and subject to inspection.

Interception records (APHIS, 2000b): None from the four countries.

Note: Callosobruchus chinensis was intercepted in seeds of *Nelumbo nucifera* Gaertner at the Los Angeles International Airport, June, 1977 (Kingsolver, 1979). Quarantine action is not required if this pest is intercepted at ports-of-entry. *Nelumbo nucifera* is not listed as a host and the pest is reported present in the United States (Arnett, 1985). Notwithstanding, seeds are not part of the commodity under study.

4. Pest Categorization

The first step in identifying quarantine pests is to present a comprehensive list of potential quarantine pests that are known to occur in the country of origin of the proposed commodity which is to be exported to the United States. No pests of *Nelumbo nucifera* in El Salvador, Guatemala, Honduras, and Nicaragua were reported in the literature and data bases surveyed by the assessors. The risk assessment stops here because no pests were reported.

C. Literature Cited

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