

## Report of a Pest Risk Assessment

This summary presents the main features of a pest risk assessment which has been conducted on the pest, according to EPPO Standard PP 5/3(1) Pest Risk Assessment Scheme.

**Pest:** *Cucurbit yellow stunting disorder crinivirus* (CYSDV)  
**PRA area:** EPPO region  
**Assessor:** Original PRA: Dr D. Jones, CSL, UK  
 Report of PRA: EPPO Secretariat  
**Date:** 2002-05

### 1. INITIATION

**1.1 Reason for doing PRA:** CYSDV has recently been reported from several EPPO countries, where it can cause a serious disease of cucurbits.  
**1.2. Taxonomic position of pest:** Viruses: Closteroviridae: *Cucurbit yellow stunting disorder crinivirus* (CYSDV)

### 2. PROBABILITY OF INTRODUCTION

#### 2.1 Entry

**2.1.1 Geographical distribution:** **EPPO region:** Israel, Jordan, Morocco, Portugal, Spain (including Canary Islands), Turkey.  
**Asia:** Lebanon, Saudi Arabia, United Arab Emirates.  
**Africa:** Egypt.  
**North America:** Mexico, USA (Texas).  
**2.1.2 Major host plants:** Natural host range restricted to Cucurbitaceae: *Citrullus lanatus*, *Cucumis melo*, *Cucumis sativus*, *Cucurbita pepo*.  
 Experimental host plants were identified: *Cucurbita maxima* and *Latuca sativa*.

**2.1.3 Which pathway(s) is the pest likely to be introduced on:** Infected host plants (including vegetative propagating material), viruliferous *Bemisia tabaci*. CYSDV is not seedborne.

#### 2.2 Establishment

**2.2.1 Crops at risk in the PRA area:** *Citrullus lanatus*, *Cucumis melo*, *Cucumis sativus*, *Cucurbita pepo* grown in the field or under glasshouses.  
**2.2.2 Climatic similarity of present distribution with PRA area (or parts thereof):** Climatic conditions in the Mediterranean region, but also under glasshouse protection elsewhere in the PRA area, are similar to those in the region of origin (probably Middle East)  
**2.2.3 Aspects of the pest's biology that would favour establishment:** CYSDV is systemic in natural hosts, and vegetative propagation would increase numbers of diseased plants.  
*B. tabaci* spreads the virus between seedlings/plants/cultivars. CYSDV is already present in the PRA area and is not likely to be eradicated from countries where field crops are affected.

**2.2.4 Characteristics (other than climatic) of the PRA area that would favour establishment:**

Melon, cucumber, squash and watermelon are widely grown in the EPPO region, both indoors and outdoors.

*Bemisia tabaci*, an efficient vector, is present in many parts of the EPPO region.

Control of *B. tabaci* is difficult (insecticide resistance)

**2.2.5 Which part of the PRA area is the endangered area:**

Mediterranean countries are directly at risk, but other countries cultivating cucurbits under glasshouse may also be at risk

### **3. ECONOMIC IMPACT ASSESSMENT**

**3.1 Describe damage to potential hosts in PRA area:**

Cucumbers and melons show severe yellowing symptoms. Severe stunting can be observed on melon. Chlorotic mottling, yellowing and stunting have been reported on cucumber.

**3.2 How much economic impact does the pest have in its present distribution:**

CYSDV has a serious impact on cucurbit production in areas where it occurs. In southern Spain, crop losses (no figures) are reported for cucumbers and melons. In Lebanon, yield reductions of 40-60% have been reported by farmers.

**3.3 How much economic impact would the pest have in the PRA area:**

Cucurbit crops are important in the EPPO region, particularly melon and cucumber, both indoors and outdoors.

CYSDV would increase price of cucurbits should substantial losses occur causing potential changes in consumer demand. If CYSDV did become established in propagation nurseries, virus-testing schemes may need to be introduced.

### **4. CONCLUSIONS OF PRA**

**4.1 Summarize the major factors that influence the acceptability of the risk from this pest:**

- CYSDV has not yet reached the limits of its potential distribution within the EPPO region
- CYSDV is transmitted by *B. tabaci* which occurs in many parts of the EPPO region
- CYSDV is thought to come from the Middle East with similar climatic conditions to Mediterranean area and it causes serious economic damage where it is present. It also present a risk to protected cucurbit crops,
- Control of CYSDV and its vector is difficult
- The vector, *B. tabaci*, is often detected on imported plant consignments
- Cucurbits are important crops in the EPPO region
- Eradication of CYSDV in field crops is unlikely

**4.2 Estimate the probability of entry:**

High

**4.3 Estimate the probability of establishment:**

Score on the 1 to 9 scale for entry potential = 7 to 8

High. Already established in several EPPO countries.

**4.4 Estimate the potential economic impact:**

Score for establishment potential = 7 to 8

Score for risk of economic impact = 5 to 6

**4.5 Degree of uncertainty**

Extent of international trade of cucurbit plants for planting, uncertainty on the development of the disease in cucurbit glasshouses in northern countries.

### **5. OVERALL CONCLUSIONS OF THE ASSESSOR**

CYSDV should be added to the EPPO A2 list