

**Report of a Pest Risk Assessment: *Bactrocera zonata***

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:** *Bactrocera zonata*  
**PRA area:** Jordan  
**Assessor:** Original PRA: M. Bahdousheh, R. Baker, M. Katbeh, M. Bilal Arafat  
 Report of the PRA: EPPO Secretariat  
**Date:** 2002-03

**1. INITIATION**

**1.1 Reason for doing PRA:** *B. zonata* is now widespread in Egypt. It was trapped in Israel at the Egyptian border.  
**1.2. Taxonomic position of pest:** Insecta: Diptera: Tephritidae: *Bactrocera zonata* (Saunders)

**2. PROBABILITY OF INTRODUCTION****2.1 Entry**

**2.1.1 Geographical distribution:** **PRA area:** Absent (male attractants and bait traps negative in the Jordan valley).  
**EPPO region:** Absent. Trapped in Israel, but eradication measures applied.

**Asia (origin):** Bangladesh, India, Indonesia (?), Iran, Lao, Myanmar, Nepal, Oman, Pakistan, Reunion, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates, Viet Nam, Yemen.

**Africa:** Egypt, Mauritius, Réunion.

**North America:** Trapped at several occasion in USA (California), but eradicated/under eradication.

**2.1.2 Major host plants:** Peach, mango, guava.  
 Many secondary hosts, including fig, pomegranate, apricot, citrus, cucurbits, jujube etc.

**2.1.3 Which pathway(s) is the pest likely to be introduced on:** Fruits from commercial orchards or private gardens. In trade, but mainly with travellers, including workers moving between Egypt and Jordan. Infected fruits may be discarded in fields/gardens.

**2.2 Establishment**

**2.2.1 Crops at risk in the PRA area:** Mainly peach, guava and mango. Uncertainty about citrus. Many secondary hosts present.

**2.2.2 Climatic similarity of present distribution with PRA area (or parts thereof):** Similarities with some areas in Egypt, Saudi Arabia, Oman.

**2.2.3 Aspects of the pest's biology that would favour establishment:**

- high fecundity, fast life cycle, efficient mate finding. Low populations able to maintain.
- no known natural enemies of *B. zonata* in Jordan
- has shown its ability to spread from its origin in Asia to new areas
- has already adapted to climates cooler than its original range
- temperature requirements adequate in Jordan valley, and sufficient temperature accumulation in summer in the highlands.

<b>2.2.4 Characteristics (other than climatic) of the PRA area that would favour establishment:</b>	<ul style="list-style-type: none"> <li>- considered that it could outcompete and replace <i>C. capitata</i></li> <li>- many cultivated host plants present in the PRA area, in particular major ones; wild hosts also present.</li> <li>- growing conditions in the Jordan valley similar to those in Egypt. Stone fruits grown in highlands at higher altitudes.</li> </ul>
<b>2.2.5 Which part of the PRA area is the endangered area:</b>	All areas in the Jordan valley. Transient populations could establish in highlands.
<b>3. ECONOMIC IMPACT ASSESSMENT</b>	
<b>3.1 Describe damage to potential hosts in PRA area:</b>	Damage to fruit. Quantitative and qualitative yield losses. Will spread naturally.
<b>3.2 How much economic impact does the pest have in its present distribution:</b>	Estimated annual losses: 320 million EUR in the Near East; 190 million EUR in Egypt.
<b>3.3 How much economic impact would the pest have in the PRA area:</b>	<ul style="list-style-type: none"> <li>- Impact on fruit production (high impact on peach, mango, fig is reported in other countries).</li> <li>- Loss of export markets.</li> <li>- High cost of eradication and containment of outbreaks.</li> <li>- Economic impact would depend on how soon the pest is detected and measures taken.</li> </ul>
<b>4. CONCLUSIONS OF PRA</b>	
<b>4.1 Summarize the major factors that influence the acceptability of the risk from this pest:</b>	<p><i>B. zonata</i> has spread to new countries, has already shown ability to adapt to new environmental conditions, has several hosts which are widespread and economically important in Jordan and has an effective reproductive strategy.</p> <p>There are similar climatic conditions in Egypt and Jordan.</p> <p>Serious economic damage have been reported in Egypt and the Near East</p>
<b>4.2 Estimate the probability of entry:</b>	High (the pest is widespread in Egypt and there are many opportunities to enter the country on fruit, either traded, but most of all transported by travellers/ workers)
<b>4.3 Estimate the probability of establishment:</b>	<p>High (in the Jordan valley where climatic conditions are most similar to those in areas where it is present in Egypt).</p> <p>Medium? elsewhere (highlands).</p> <p>In both cases, hosts are widely available.</p>
<b>4.4 Estimate the potential economic impact:</b>	High (heavy damage reported in Egypt, presence of economically important hosts).
<b>4.5 Degree of uncertainty</b>	<ul style="list-style-type: none"> <li>- survival to periods of colder weather (although adaptability already shown).</li> <li>- precise list of host plants, and especially whether citrus could be a major host in the area.</li> </ul>
<b>5. OVERALL CONCLUSIONS OF THE ASSESSOR</b>	Should be listed as an A1 pest.

*Note from the Secretariat: this assessment also applies largely to at least parts of some countries in the southern EPPO region. For other Mediterranean countries, an uncertainty remains on the possibility to survive colder periods.*