

Report of a Pest Risk Assessment: *Puccinia psidii*

Pest:	<i>Puccinia psidii</i> Winter (Uredinales, Pucciniaceae) Eucalyptus rust or Guava rust
PRA area:	EPPO region
Assessor:	Plant Protection Service, France LNPV (Jacqueline Tournut)
Date:	December the 6 th 2002
Summary of the conclusions	Low risk for the EPPO region
Status of the pest	The pest has no quarantine status. No listing needed
Further action	No further action

1. INITIATION

1.1 Reason for doing PRA:

The pathogen was discovered on Eucalyptus in Brazil in 1944. In 1973, planting of eucalyptus seedlings was forbidden because of the presence of this rust. It is now considered as a major pest of eucalyptus in the world. Eucalyptus is grown in the southern part of the EPPO region. The potential of *P. psidii* as a quarantine pest is being assessed in other parts of the world (Australia).

1.2. Taxonomic position of pest:

Puccinia psidii Winter (Uredinales, Pucciniaceae)
Eucalyptus rust or Guava rust
Puccinia psidii Winter is well defined.

2. PROBABILITY OF INTRODUCTION

2.1 Entry

2.1.1 Geographical distribution:

PRA area: absent
Central America
South America (Argentina, Brazil, Colombia, Equator, Paraguay, Uruguay, Venezuela)
Caribbean Islands (Cuba, Jamaica, Puerto Rico, Trinidad)
US (South of Florida)
Unconfirmed reports from South Africa, Taiwan and India.

2.1.2 Major host plants:

Eucalyptus camaldulensis Dehnhardt (*E. citriodora* Hook., *E. cloeziana* F. Muell., *E. grandis* Hill ex Maiden, *E. maculata* Hooker, *E. microcorys* F. Mueller, *E. paniculata* Sm, *E. pellita* F. Mueller, *E. phaeotricha* , lakely et Mckie, *E. pirocarpa* L. Johnson. D. Blaxell., *E. punctata* De Condolle, *E. saligna* Smith, *E. tereticornis* Sm, *E. urophylla* S.T. Blake,
Eugenia brasiliensis Lam., *E. jambolana* Lam., *E. malaccensis* L., *Eugenia* sp., *E. uniflora*, *E. uvalha* Camb.
Marlierea edulis Niedz
Melaleuca leucodendron (L.) L.
Myrcia jaboticaba Berg. *Myrcia* spp.
Myrciaria sp.
Pimenta acris Kostel, *P. dioica* (L) Merr., *P. officinalis* L.
Psidium araça Raddi, *P. guajava* L., *P. pomiferum* L.
Syzygium jambos (L.) Alston

2.1.3 Which pathway(s) is the pest likely to be introduced on:

The fungus can be introduced by the following possible pathways :

- Seedlings and other plants for planting
- Wood (less probable pathway as *P psidii* is rarely observed on trees above 4 years-old.

Most of plantings are done with seeds.

2.2 Establishment

2.2.1 Crops at risk in the PRA area:

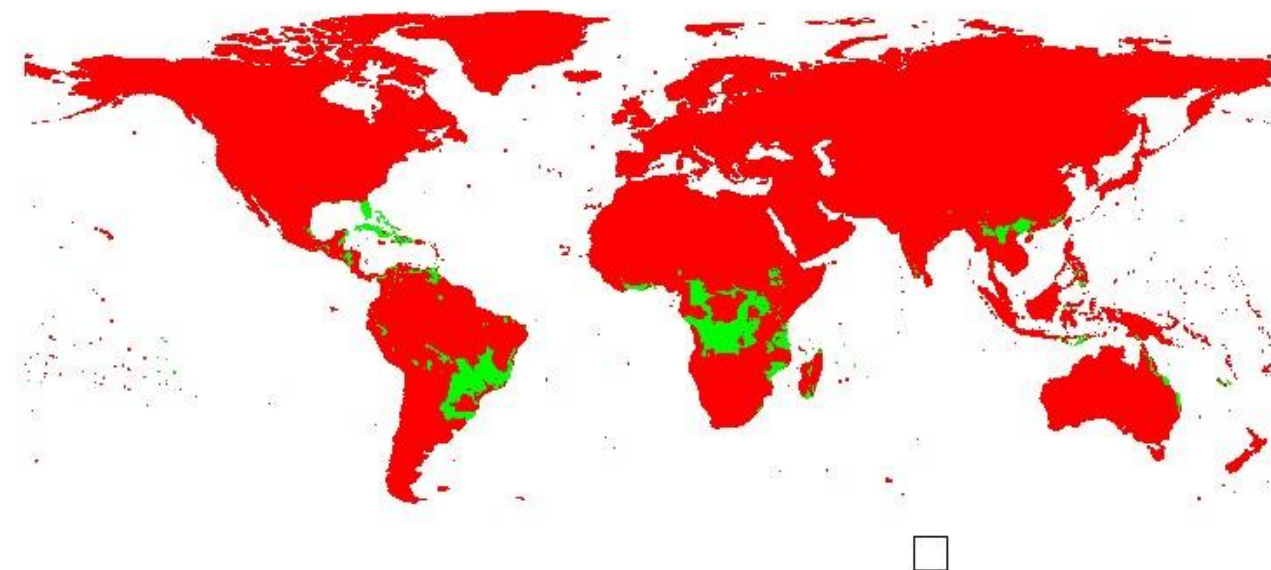
Eucalyptus plants are present in forests of the southern part of the region. Spain and Portugal represent 15% of the total eucalyptus production in the world, i.e. approximately 1 200 000 ha. *E. globulus* is the most important species (1 000 000 ha) followed by *E. camaldulensis*. *E. globulus* is not reported as a susceptible species but *E. camaldulensis* is susceptible to *P psidii*.

2.2.2 Climatic similarity of present distribution with PRA area (or parts thereof):

The climatic conditions in the EPPO region seem to be different from the climatic conditions in the area where the pest occurs. A tropical humid climate (with rain 1800 mm/year) seems to be required. Nevertheless, the pest has been discovered in areas where the rain level is below 500 mm/year.

A recent Australian study based on simple climatic studies to assess the potential risk for Australia shows that Europe is at a very low risk (see map below).

Estimation of high risk areas for infection by Puccinia psidii [Booth, T.H.; Jovanovic, T.; New, M. (in press)]. A new world climatic mapping program to assist species selection. Forest Ecology and Management



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

The pest can be transmitted by insects, wind and rain.

Evidence of races of *P. psidii* exists. Cross-inoculations among hosts indicate considerable physiological variability within the species.

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

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

Low risk for European countries

3. ECONOMIC IMPACT ASSESSMENT

3.1 Describe damage to potential hosts in PRA area:

The disease is serious on seedlings, cuttings and young trees. It affects shoots and leaves. The infection of the meristem results in reduced plant growth.

The rust rarely kills its host; plants recover by producing new growth that may become infected under favourable environmental conditions. Continued infection may lead to stunting.

The severity of infection varies with the susceptibility of the host and weather conditions. The most susceptible species are *E. grandis*, *E. phaeotricha* et *E. cloeziana*

Eucalyptus above 4-years old are rarely infected (Pest Risk Assessment of the importation into the United States of unprocessed Eucalyptus logs and chips from South America, April 2001).

Costs may be incurred to control the disease in particular on Eucalyptus species used in foliar industry.

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

This pest is considered as one of the major pests of Eucalyptus in the world.

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

4. CONCLUSIONS OF PRA

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

No unacceptable risk

4.2 Estimate the probability of entry:

Low

4.3 Estimate the probability of establishment:

Low

4.4 Estimate the potential economic impact:

4.5 Degree of uncertainty

5. OVERALL CONCLUSIONS OF THE ASSESSOR

no need for addition to the EPPO lists