EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION

04-10835
PPM point 8.8

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: *Erysiphe cf. euphorbiicola (Oidium sp.)*
PRA area: Germany
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Date: 04.03.2004

1. INITIATION

1.1 Reason for doing PRA: The first report of an outbreak of the powdery mildew *Oidium* sp. on *Euphorbia pulcherrima* in Europe was in 1995 from Denmark. Until 2001 no other outbreak has been reported from Europe. In fall 2001 powdery mildew on poinsettia was found in Germany at two experimental stations for horticulture. Furthermore in three commercial companies powdery mildew was observed on poinsettia. In 2003 in few companies producing for retail marketing outbreaks of powdery mildew were noted.

1.2. Taxonomic position of pest: The taxonomic position of this powdery mildew is not absolutely clear, because on *Euphorbia pulcherrima* there has been found only the anamorph *Oidium* sp.. A teleomorph on poinsettia is not known. According to BRAUN (pers. communication 2001), *Oidium* sp. from *E. pulcherrima* is not different in morphology from the anamorph of *Erysiphe euphorbiicola* U. Braun & S. Takamatsu (= *Microsphaera euphorbiae* Berk. & M.A. Curtis) occurring in North America. BRAUN suggests the preliminary name *Erysiphe* cf. *euphorbiicola* (*Oidium* sp.).
Ascomycota: *Erysiphales*

2. PROBABILITY OF INTRODUCTION

2.1 Entry

2.1.1 Geographical distribution: *Oidium* sp. on *E. pulcherrima* is reported to be native in the USA, Puerto Rico and Mexico.
It does not occur in Europe. There were few outbreaks in Europe (Denmark, Germany, United Kingdom) under protected cultivation in experimental stations for horticulture and in few companies producing for retail marketing. Probably the pest was introduced with latently infected cuttings from overseas.

2.1.2 Major host plants:

Euphorbia pulcherrima is the only reported host for this *Oidium* sp. As a teleomorph is unknown on *E. pulcherrima*, it is likely that this *Euphorbia* species is not the major host plant. Experiments at the Federal Biological Research Centre for Agriculture and Forestry, Braunschweig, Germany, showed that *Oidium* sp. from *E. pulcherrima* is able to infect *E. exigua*, *E. heterophylla, E. helioscopia* and, to a less extent, *E. marginata*. A teleomorph was not observed on these *Euphorbia* species (Brielmaier-Liebetanz, unpublished data).
For *Erysiphe euphorbiicola* which is supposed to be the teleomorph of the *Oidium* sp. on poinsettia there are several hosts within the genus *Euphorbia* (Braun, 1987).

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

The fungus is likely to be introduced with latently infected cuttings from countries where it is known to occur naturally. It is supposed that the motherplants from which the cuttings are taken are occasionally infected with powdery mildew and get treated with fungicides. Thus sporulation of powdery mildew will be suppressed and the primary infection will remain latently over some period.
The first occurrence in Germany was detected at a time when secondary infections had already taken place. This is the reason why the origin of the outbreak could not be traced back.
The pest is likely to remain undetected during import inspection because primary mycelium of powdery mildew is hardly visible to the naked eye.

2.2 Establishment

2.2.1 Crops at risk in the PRA area:

Euphorbia pulcherrima

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

The climatic conditions in the areas of present distribution may be similar to those under protected cultivation in the PRA area, but are different from outdoor conditions of the PRA area.

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

The conditions for the development of the disease are favourable in greenhouses during fall at temperatures between 15 and 23°C and low light intensity. But there will be no establishment as poinsettia cultivation usually is not year-round in the PRA. Survival of the fungus from one growing season to the next is very unlikely. Furthermore *Oidium* sp. from *E. pulcherrima* has a very limited host range. *E. fulgens* and *E. milii*, two other important glasshouse crops, do not get infested by the fungus (Brielmaier-Liebetanz, unpublished experimental data). Nevertheless, there might be a small risk if annual weeds like *E. helioscopia* or *E. exigua* are present in the greenhouse as they could serve as a pest reservoir. Therefore, careful weed control should be done. Outdoor survival of the pest under the climatic conditions of the PRA area is unlikely as *E. pulcherrima* is not cultivated outdoors because of its sensitivity to frost. Survival and establishment could be more likely in areas where *E. pulcherrima* is grown outdoors.

2.2.4 Characteristics (other than climatic) of the PRA area that would favour establishment:	No characteristics known
2.2.5 Which part of the PRA area is the endangered area:	There is no special endangered area. In principle, outbreaks of powdery mildew could occur in the greenhouses of each company cultivating poinsettias from latently infected cuttings.

3. ECONOMIC IMPACT ASSESSMENT

3.1 Describe damage to potential hosts in PRA area:	Powdery mildew on the surface of leaves and bracts of *Euphorbia pulcherrima*. Even after application of fungicides symptoms are not reversible.
3.2 How much economic impact does the pest have in its present distribution:	Little information is available on the economic losses in countries of origin. In 1992 there was a first report on an outbreak in USA, when over a hundred growers were affected by powdery mildew. Since that time powdery mildew on poinsettia seems to occur only sporadically.
3.3 How much economic impact would the pest have in the PRA area:	Poinsettia is a very important house pot-plant in Germany particularly at Christmas season. Approximately 26 million plants for final use are produced each year. It is one of the major crops cultivated under protected conditions. The economic loss in case of an outbreak could be considerably high if infestation is detected not in time. This might be at the final stage of production where conditions are favourable for the development of the pest. But serious outbreaks of the pest can be avoided by checking the crop regularly and carefully for first signs of powdery mildew infections. If fungicides are applied in time the fungus can be well controlled. Under these circumstances it is expected that economic losses will not be considerable.

4. CONCLUSIONS OF PRA

4.1 Summarize the major factors that influence the acceptability of the risk from this pest:	It is a pest of an important house pot-plant crop. The known geographical distribution of the pathogen is very limited. Under favourable climatic (cultural) conditions the pathogen is highly virulent on *Euphorbia pulcherrima*, the only reported natural host. Poinsettias are grown in the PRA area exclusively under protected conditions. In this case climatic conditions may be similar to those of regions where the pest is known to occur. Long-term establishment of the pest either within glasshouses or outdoors is unlikely since *E. pulcherrima* is not a year-round crop and can not pass the winter outdoors. Entry is likely with latently infected cuttings. Latent infections will remain undetected during import

	inspection as this is usually done only visually and not microscopically.
4.2 Estimate the probability of entry:	Medium (5,25) There are only few consignments of *E. pulcherrima* cuttings from areas where the pest is known to occur.
4.3 Estimate the probability of establishment:	Low to medium (4,2) In the PRA area the probability of establishment of the pest is low since it can only survive on its host plant under protected conditions. *Euphorbia pulcherrima* is not a year-round crop and it can not be grown outdoors. This may be different in other countries of the EPPO region.
4.4 Estimate the potential economic impact:	Low (3,0)
4.5 Degree of uncertainty	There is uncertainty on the occurrence of the pest in other areas of America than the reported ones. Poinsettia cuttings are imported not only from Mexico but also from Costa Rica to the PRA area. An occurrence of *Oidium* sp. on poinsettia in Costa Rica would enhance the risk for an entry of the pest into the PRA area. As a teleomorph of *Oidium* sp. from *E. pulcherrima* is unknown it can not be proved that it is really the anamorph of *Erysiphe euphorbiicola* which is known to occur on *Euphorbiaceae* in different regions of America.
5. OVERALL CONCLUSIONS OF THE ASSESSOR	According to the present knowledge on occurrence, spread and its potential for establishment, the pest does not qualify as a quarantine organism.

It could be useful for the recipient of this report to receive an illustration, either of the pest itself or of the damage it causes.