



Netherlands Food and Consumer
Product Safety Authority
Ministry of Economic Affairs

National Plant Protection Organization, the Netherlands

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1	What is the scientific name (if possible up to species level + author, also include (sub)family and order) and English/common name of the organism? <i>Add picture of organism/damage if available and publication allowed.</i>	<p><i>Curtobacterium flaccumfaciens</i> pv. <i>poinsettiae</i> (Starr & Pirone 1942) Collins & Jones 1983</p> <p>Taxonomic position: Bacteria, Actinobacteria, Actinobacteridae, Actinomycetales, Microbacteriaceae, Curtobacterium (Bradbury, J. F. 1991).</p> <p>Common name: Bacterial Blight of Poinsettia</p> <p>Synonyms: <i>Phytomonas poinsettiae</i>, <i>Corynebacterium poinsettiae</i>, <i>Corynebacterium flaccumfaciens</i> pv. <i>poinsettiae</i>, <i>Corynebacterium michiganense</i> pv. <i>poinsettiae</i> (Bradbury, J. F. 1991).</p>
2	What prompted this quick scan? <i>Organism detected in produce for import, export, in cultivation, nature, mentioned in publications, e.g. EPPO alert list, etc.</i>	Recently, a German risk assessment was published following the finding of the bacterium in a young plant nursery of <i>Euphorbia pulcherrima</i> (poinsettia) (Schrader & Müller, 2014).
3	What is the current area of distribution?	New Zealand, USA, Romania (CABI 2014). It is not known to occur in the Netherlands. So far, it is not listed in the annexes of Directive 2000/29/EC or in EPPO. In 2008, the species was found at a pot plant nursery in Slovenia and the finding was related to plant material originating in Germany (Benko Beloglavec et al., 2009). More recently, it has been reported from a plant nursery in Germany (Schrader & Müller, 2014).
4	What are the host plants?	<i>Euphorbia pulcherrima</i> (poinsettia)

5	<p>Does the organism cause any kind of plant damage in the current area of distribution and/or does the consignment demonstrate damage suspected to have been caused by this organism? <i>Yes/no + plant species on which damage has been reported + short description of symptoms. Please indicate also when the organism is otherwise harmful (e.g. predator, human/veterinary pathogen vector, etc.).</i></p>	<p>No information available on quantitative yield losses. The organism is known to cause prominent symptoms including water-soaked longitudinal streaks on the green stems continuing upwards into the petioles and the leaves (Pirone and Bender, 1941). This results in spotting and blotching. Additionally, leaf blight, total defoliation and brown discolouration of the vascular system have been observed (McFadden, 1959). At an advanced stage of infection, the stems bend sharply down towards the unaffected side. Cuttings from affected plants do not develop normally, and in the greenhouse both the cuttings and the mother stocks are completely damaged (Starr and Pironne, 1942).</p>
6	<p>Assess the probability of establishment in the Netherlands (NL) (i.e. the suitability of the environment for establishment).</p> <ol style="list-style-type: none"> In greenhouses (low, medium, high) Outdoors (low, medium, high) Otherwise (e.g. storage facilities, human environment) 	<p>Cultivation of the host plant <i>Euphorbia pulcherrima</i> in the Netherlands occurs in protected cultivation (greenhouses) only. It is a seasonal crop which is only grown in the second half of the year. No overhead irrigation is applied. It is unknown if the bacterium can be spread through drip irrigation or ebb-and-flow systems which is common practice. However, it is advised to avoid overhead irrigation and management measures recommended are similar to those for <i>Xanthomonas axonopodis</i> pv. <i>poinsetticola</i> (e.g. Mullen & Hagan, 2006; Moorman, 2014). Neither is it known how long the bacterium can survive in water or on surfaces. The bacterium may be eradicated by hygiene measures, e.g. by carefully removing all plant debris after removal of the crop. For these reasons, the probability of establishment in a pot plant nursery may be rather low but the uncertainty is high due to lack of information on survivability of the bacterium during periods without a host plant. Transient populations may occur by repeated introductions through infected planting material.</p> <p>Establishment outdoors is considered unlikely in the Netherlands and other northern European countries (Schrader & Müller, 2014).</p>
7	<p>Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).</p>	<p>The probability of establishment outdoors in southern European countries cannot be ruled out (Schrader & Müller, 2014). Spread in the subtropical areas where poinsettia is cultivated outdoors can be mainly attributed by splashing of rain droplets and over head irrigation (Pirone and Bender, 1941; McFadden, 1959).</p>
8	<p>What are the possible pathways that can contribute to spread of the organism after introduction? How rapid is the organism expected to spread (by natural dispersal and human activity)?</p>	<p>Trade of latently infected plants of <i>Euphorbia pulcherrima</i> is the most important pathway of spread of this organism after introduction. Contaminated tools used in the greenhouse (pruning, making cuttings etc) and above head irrigation can contribute significantly in the spread of this pathogen from diseased to healthy plants within a production facility. The pathogen can be controlled by use of pathogen free material (testing of mother plants) and application of strict hygiene measures. The rate of spread of this organism in the Netherlands is expected to be rather low unless infected propagation material is sold to many pot plant companies.</p>

9	Provide an assessment of the type and amount of direct and indirect damage (e.g. lower quality, lower production, export restrictions, threat to biodiversity, etc.) likely to occur if the organism would become established in NL and the EU, respectively?	<p>See #5 for the type of damage. Losses for individual companies could be substantial if the pathogen is spread by irrigation water in ebb-and-flow systems. Such kind of spread has, however, not been documented (no reports found). If spread will mainly occur through contaminated tools (overhead irrigation is not used or is at least not common in the Netherlands) the disease may be well controlled by strict hygiene measures. Losses in a next growing season can probably be avoided by removal of all plant debris and desinfection of tables, tools etc that may have become contaminated and the use of pathogen free plant material.</p> <p>It is known to be a regulated pest in Israel, Malaysia and Mexico. Requirements vary from mother plants tested and found free of the pest, pest free production place and plants inspected throughout the growing season and found free of the pest.</p>
10	Has the organism been detected on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables)? <i>If "no", go to question 12</i>	not relevant
11	If the organism has been found on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables), what is the probability of introduction (entry + establishment)? <i>Only to be answered in case of an interception or a find.</i>	
12	Additional remarks	There is limited information available about this pathogen in the scientific literature.
13	References	<p>Benko Beloglavec A, Licen R, Seljak G, Snajder Kosi K, Grando Z, Lesnik, Pavlic Nikolic E (2009) Zbornik predavanj in referatov 9. slovenskega posvetovanja o varstvu rastlin z mednarodno udeležbo. Nova Gorica, 4.–5. marec 2009</p> <p>Bradbury, J. F. (1991): <i>Curtobacterium flaccumfaciens</i> pv. <i>poinsettiae</i>. IMI Descriptions of Fungi and Bacteria No. 1045. Mycopathologia 115: 53 – 54.</p> <p>CABI (2014): Basic datasheet <i>Curtobacterium flaccumfaciens</i> pv. <i>poinsettiae</i>. http://www.cabi.org/cpc/datasheet/15341 (date of consultation 02/12/2014).</p> <p>McFadden L.A. (1959). Bacterial blight of Poinsettia. Proceedings of the Florida State Horticultural Society, Vol. 72 pp. 392-394.</p> <p>Moorman G (2014) Poinsettia diseases. http://extension.psu.edu/pests/plant-diseases/all-</p>

		<p>fact-sheets/poinsettia-diseases. The Pennsylvania State University (last access 10th December 2014)</p> <p>Mullen J, Hagan A (2006) Poinsettia diseases and their control. Alabama Cooperative Extension System. http://www.aces.edu/pubs/docs/A/ANR-1272/ANR-1272.pdf (last access 10th December 2014).</p> <p>Pirone P. P., and Bender, T. R. (1941). A new bacterial disease of Poinsettiae. N.J. Agric. Exp. Stn. Nursery Dis. Notes 14:13-16.</p> <p>Starr M.P. and Pirone, P. P. (1942). <i>Phytomonas poinsettiae</i> n. sp., the cause of a bacterial disease of Poinsettiae. Phytopathology 32, No 12: 1076-1081.</p> <p>Schrader G., and Müller, P. (2014) Express – PRA of <i>Curtobacterium flaccumfaciens</i> pv. <i>poinsettiae</i>, Julius Kühn-Institut, Institut für nationale und internationale Angelegenheiten der Pflanzengesundheit.</p>
14	Conclusions	<p>Recently, <i>Curtobacterium flaccumfaciens</i> pv. <i>poinsettiae</i> (Cfp) was reported from Germany. Cfp causes leaf spots and stem cancer in <i>Euphorbia pulcherrima</i> (poinsettia). It seems to have a limited distribution in the EU. The main pathway for introduction and spread is infected plant material. Introduction of the bacterium at pot plant nurseries can be prevented by use of pathogen free plant material and strict hygiene measures. In case of an infestation, the bacterium can probably be eliminated by application of strict hygiene measures including removal of all plant debris after the growing season of poinsettia pot plants.</p>
15	Follow-up measures	<p>The risk of the bacterium will be communicated to stakeholders. The bacterium will be included in the national survey program for 2015.</p>