

## Express PRA for '*Pantoea cedenensis*'

## – Research and Breeding –

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**Initiation:** Application for an Express-PRA by the Federal State Bremen resulting from a request for a special authorisation for the movement and use of the organism for research and breeding purposes.

Express PRA	<i>'Pantoea cedenensis'</i>		
<b>Phytosanitary risk for Germany</b>	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
<b>Phytosanitary risk for EU Member States</b>	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
<b>Certainty of the assessment</b>	high <input type="checkbox"/>	medium <input checked="" type="checkbox"/>	low <input type="checkbox"/>
<b>Conclusion</b>	<p>So far, the bacterium '<i>Pantoea cedenensis</i>' has not been detected in Germany. Until now, it has been found in Europe in Lithuania, Spain, Italy and Portugal. Furthermore, there is information from the USA (Alaska) and Turkey. So far, it is listed neither in the Annexes of the Regulation (EU) 2019/2072 nor by EPPO.</p> <p><i>'P. cedenensis'</i> was found in connection with pine, European spruce, hazelnut and olive trees. So far, no damage to these plants could be traced back to '<i>P. cedenensis</i>'.</p> <p>Due to appropriate climate conditions, it is assumed that the bacterium can establish outdoors in Germany. It established in Member States in southern Europe. In climatic respect, the establishment in great parts of Europe seems possible.</p> <p>Currently, there is no information in relation to damage caused by '<i>P. cedenensis</i>'. Thus, the bacterium does not present any phytosanitary risk for Germany and other EU Member States and '<i>P. cedenensis</i>' is not classified as a quarantine pest. Article 29 of the Regulation (EU) 2016/2031 does not apply.</p>		
<b>Preconditions for Express-PRA fulfilled?</b>	Could be a pest, is not listed. So far, it is not established in the area covered by the notifying plant protection service.		
<b>Taxonomy, common name, synonyms</b>	<p>Kingdom: Bacteria; Class: Gammaproteobacteria; Order: Enterobacteriales; Family: Enterobacteriaceae; Genus: according to current knowledge <i>Erwinia</i>; Species: '<i>Pantoea cedenensis</i>'</p> <p>So far, the bacterium was not scientifically described and thus, the scientific name is not acknowledged. Despite this, the bacterium can be found under this name in culture collections (PALMER et al., 2018).</p>		

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<b>Does a relevant earlier PRA exist?</b>	No
<b>Distribution and biology</b>	<p>For the first time, the bacterium was detected on olive trees in Spain in association with <i>Pseudomonas savastoi</i> (bacterial olive canker) (PALMER et al., 2018).</p> <p>In Portugal, the bacterium was detected in association with the Pine Wood Nematode <i>Bursaphelenchus xylophilus</i>.</p> <p>'<i>P. cedenensis</i>', however, does not seem to be strongly associated with <i>B. xylophilus</i> and apparently, has no decisive influence on the development of the pine wilt (VINCENTE et al. 2011).</p> <p>The bacterium was detected in Italy in association with the bacterial hazelnut-dieback on <i>Anisandrus dispar</i> (BUCINI et al., 2005). The disease on the plant is triggered by bacteria of the genera <i>Pseudomonas</i> and <i>Brenneria</i> (VUONO et al., 2006).</p> <p>In Turkey, the bacterium was found on <i>Xylosandrus germanus</i>, (KATI &amp; KATI, 2013) as well as on <i>Anisandrus dispar</i> (SEZEN et al., 2008). Both beetles are pests on hazelnut.</p> <p>In Lithuania, the bacterium was extracted from the digestive tract of common trouts (<i>Salmo trutta fario</i>) (SKRODENYTĖ-ARBAČIAUSKIENĖ et al., 2006) and from the bark beetle <i>Ips typographus</i> on European spruce (<i>Picea abies</i>) (SKRODENYTĖ-ARBAČIAUSKIENĖ et al., 2012).</p> <p>In the USA (Alaska), the bacterium was present in saliva of <i>Dendroctonus ponderosae</i> and it could be a part of the microbe-community that suppresses the spread of antagonistic fungi or competing beetle species for <i>D. ponderosae</i> (CARDOZA et al., 2009).</p> <p>No literature is available on the biology of the bacterium under natural conditions. In the laboratory, the bacterium grows well under neutral pH-conditions and temperatures from 25 to 30°C. The colonies are cream coloured and round. Under the microscope, immobile short rods show, the shape of the cells is between cocci (balls) and bacilli (rods) (Kati &amp; Kati, 2013).</p> <p>Possibly, '<i>P. cedenensis</i>' is an opportunistic beneficiary of diverse pathogens and damaging beetles on woody plants.</p>
<b>Are host plants present in the PRA area? If so, which?</b>	Thus far, the bacterium was found in connection with olive trees, hazelnut, pine tree and European spruce. Potential host plants are present in Germany and in the EU and thus, are wide spread.
<b>Is a vector/further plant needed for host alternation? Which? Distribution?</b>	Unknown. Possible vectors like <i>Monochamus</i> sp., <i>Xylosandrus</i> sp., <i>Anisandrus dispar</i> and others are distributed in Germany and Europe.

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<b>Climate in distribution area comparable to PRA-area?</b>	In the EU, the bacterium is known from Lithuania, Spain, Italy and Portugal. Furthermore, ' <i>P. cedenensis</i> ' was detected in Alaska and Turkey. It is assumed that the bacterium can establish widely in Germany and the EU, if it is not yet distributed everywhere.
<b>If no, are host plants present in protected cultivation?</b>	
<b>Damage to be expected in the PRA-area?</b>	No information on damage caused by the bacterium.
<b>Remarks</b>	The bacterium was detected comparably often. So far, no damage symptoms on plants could be directly associated to the bacterium.
<b>Literature</b>	<p>BUCINI, D., G. M. BALESTRA, C. PUCCI, B. PAPARATTI, S. SPERENZA, C. PROIETTI ZOLLA, L. VARVARO, 2005: Bio-ethology of <i>Anisandrus dispar</i> F. and its Possible Involvement in Dieback (Moria) Diseases of Hazelnut (<i>Corylus avellana</i> L.) Plants in Central Italy. Proc. VIth Intl. Congress on Hazelnut, Eds.: J. Tous, M. Rovira &amp; A. Romero, Acta Hort. 686, 435-443.</p> <p>CARDOZA, Y. J., A. VASANTHAKUMAR, A. SUAZO, K. F. RAFFA, 2009: Survey and phylogenetic analysis of culturable microbes in the oral secretions of three bark beetle species. Entomologia Experimentalis et Applicata 131, 138–147.</p> <p>KATI, A., H. KATI, 2013: Isolation and identification of bacteria from <i>Xylosandrus germanus</i> (Blandford) (Coleoptera: Curculionidae). African journal of microbiology research 7(47), 5288-5289. DOI: 10.5897/AJMR2013.5822</p> <p>PALMER, M., E. T. STEENKAMP, M. P. A. COETZEE, J. R. AVONTUUR, W.-Y. CHAN, E. VAN ZYL, J. BLOM, S. N. VENTER, 2018: <i>Mixta</i> gen. nov., a new genus in the <i>Erwiniaceae</i>. Int. J. Syst. Evol. Microbiol. 68, 1396-1407. DOI 10.1099/ijsem.0.002540</p> <p>SEZEN, K., H. KATI, R. NALCACIOĞLU, H. MURATOĞLU, Z. DEMIRBAĞ, 2008: Identification and pathogenicity of bacteria from European shot-hole borer, <i>Xyleborus dispar</i> Fabricius (Coleoptera: Scolytidae). Annals of Microbiology 58, 173-179.</p> <p>SKRODENTYĖ-ARBAČIAUSKIENĖ, V., A. SRUOGA, D. BUTKAUSKAS, 2006: Assessment of microbial diversity in the river trout <i>Salmo trutta fario</i> L. intestinal tract identified by partial 16S rRNA gene sequence analysis. Fisheries Science 72, 597-602.</p> <p>SKRODENTYĖ-ARBAČIAUSKIENĖ, V., S. RADŽIUTĖ, V. STUNŽĖ NAS, V. BŪDA, 2012: <i>Erwinia typographi</i> sp. Nov., isolated from bark beetle (<i>Ips typographus</i>) gut. International Journal of Systematic and Evolutionary Microbiology 62, 942–948.</p>

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	<p>VICENTE, C. S. L., F. NASCIMENTO, M. ESPADA, M. MOTA, S. OLIVEIRA, 2011: Bacteria associated with the pinewood nematode <i>Bursaphelenchus xylophilus</i> collected in Portugal. <i>Antonie van Leeuwenhoek, Journal of Microbiology</i> 100(3), 477-481.</p> <p>VUONO, G., G.M. BALESTRA, L. VARVARO, 2006: Control of Dieback ("Moria") of <i>Corylus avellana</i> in Central Italy using copper compounds. <i>Journal of Plant Pathology</i>, 88(2), 215-218.</p>