

Express PRA for *Icerya seychellarum*

– Interception –

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Initiation: Interception of Mangos from Egypt by the Plant Protection Service of North Rhine-Westphalia

Express-PRA	<i>Icerya seychellarum</i> (Westwood, 1855)		
Phytosanitary risk for Germany	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
Phytosanitary risk for EU-Member States	high <input type="checkbox"/>	medium <input checked="" type="checkbox"/>	low <input type="checkbox"/>
Certainty of assessment	high <input checked="" type="checkbox"/>	medium <input type="checkbox"/>	low <input type="checkbox"/>
Conclusion	<p><i>Icerya seychellarum</i> is widespread in the southern hemisphere in tropical regions. So far, the scale does not occur in Germany. It is known to occur in Spain, France and Portugal onshore as well as on Corsica and Madeira. So far, the pest is listed neither in the Annexes of the Directive 2000/29/EC nor by EPPO. The scale infests a large number of economically relevant plants in fruit growing and a variety of ornamentals.</p> <p>Due to unsuitable climatic conditions, it is assumed that <i>I. seychellarum</i> is not able to establish outdoors in Germany. The establishment in protected cultivation (tropical houses, glasshouses) is possible. An establishment has already taken place in some Member States in Southern Europe.</p> <p>Due to its low damage potential for host plants cultivated outdoors, <i>I. seychellarum</i> represents a low phytosanitary risk for Germany. In the southern EU countries, there is a medium phytosanitary risk due to the higher climatic suitability and better availability of host plants.</p> <p>Based on this risk analysis, it is assumed that the pest is able to establish in southern Member States. However, considerable damage is not expected. The species already established in Southern Europe in Spain, Portugal and France, without action being taken. The scale can be effectively dispersed by wind. A natural extension of the range is likely.</p> <p>Thus, <i>I. seychellarum</i> is not classified as quarantine pest, and § 4a of the Plant Inspection Order does not apply.</p>		
Precondition for Express-PRA fulfilled?	Could be a pest, is not listed; so far, it is not established in the area covered by the reporting plant protection service.		
Taxonomy, common name,	Classification: Insecta, Order: Hemiptera, Family:		

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synonyms	Margarodidae, Species: <i>Icerya seychellarum</i> (Westwood, 1855); Trivial names: Seychelles scale, seychelles fluted scale, yellow cottony cushion scale, Iceplant scale, cochenille farineuse des Seychelles
Does a relevant earlier PRA exist?	No
Distribution and biology	<p>South East Asia, East and South Africa, Australia, Oceania (USDA, 2007); South America (Columbia, French Guiana), Europe (Portugal, Spain, France, Madeira, Corsica) (EPPO, 2017).</p> <p>The females reproduce predominantly by self-fertilization. Winged males are very rare. The young emerge in the females and are live-born (ovoviviparous). Females produce an egg sac and after 5-6 days, they begin to oviposit for up to 17 days. The nymphs of the first generation emerge within one day (Biosecurity New Zealand, 2009). The development takes app. 3 months. In Japan and South Africa the species produces one generation per year, apart from that, also several generations per year are possible. The only mobile live stage is the first stage (crawler) when the young spread somewhat actively but mainly with the wind (USDA, 2007).</p> <p>The scales may be present on leaves, stems, stalks, fruits and flowers of their host plants. Preferably, they are located underneath the leaves (Biosecurity New Zealand, 2009).</p>
Are host plants present in the PRA area? If so, which?	<p>The scale has a very broad host plant range. The main host plants among others are <i>Albizia</i> sp. (silk tree), <i>Citrus</i> sp. (citrus plants), <i>Cocos nucifera</i> (coconut palm), <i>Ficus</i> sp. (fig), <i>Magnolia</i> sp., <i>Persea americana</i> (Avocado), <i>Psidium guajava</i> (Guave), <i>Pyrus</i> sp. (pear) and <i>Rosa</i> sp. (rose family) (Biosecurity New Zealand, 2009).</p> <p><i>Rosa</i> sp. and <i>Pyrus</i> sp. are widely distributed outdoors in Germany. Furthermore, the species is able to infest other outdoor crops like grape, bean and strawberry. Additionally to the aforementioned main hosts in protected cultivation diverse secondary hosts in tropical greenhouses or indoor plants like e.g. <i>Monstera</i>, <i>Passiflora</i>, <i>Cycas</i> and <i>Mimosa</i>.</p> <p>In the EU, suitable host plants are widely distributed. Especially the Mediterranean region presents a broad host plant range of suitable crops.</p>

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Transfer pest from consignment →host plant	The adult females are immobile. Winged males are rare. The risk of transmission exists through the nymphs, which can be spread by wind over long distances. Potential host plants are widely distributed.
Is a vector/further plant needed for host alteration? Which? Distribution?	<i>I. seychellarum</i> does not need any vector. The nymphs in the first stage (crawler) mainly are dispersed by wind, partly over several kilometres. A distance of 3.5km from the starting point is documented (catch over the sea, measured to the next infested host plant according to the wind direction) (Hill, 1980).
Climate in distribution area comparable to PRA area?	<p>The pest mainly occurs in tropical regions of the earth. In Japan, there are occurrences in temperate climate zones with overwintering adult females (Biosecurity New Zealand, 2009).</p> <p>The climate outdoors in Germany is inappropriate for <i>I. seychellarum</i>. A long-term establishment seems unlikely under the current climatic conditions.</p> <p>In the Mediterranean region, the climatic conditions are suitable for the species. The scale did already establish in France, Spain, Portugal, and on Madeira and Corsica.</p>
If no, are host plants present in protected cultivation?	Yes, a variety of host plants is maintained in tropical greenhouses, in bi-annual outdoors cultivation or as indoor plant.
Damage to be expected in the PRA-area?	<p>The damage caused by the scale mostly is assessed as low (Hill, 2008). Fruits and leaves are covered by the waxy excretions. The excretions favour the growth of phytopathogenic mould (USDA, 2007). In addition to the contamination, the photosynthetic efficiency of the infested plants is reduced. Leaf loss and dwarfing of the plants may happen. In case of a heavy infestation, the dying of the host plants is possible (Plantwise, undated.).</p> <p>In Egypt, the species is of economic importance on mangos and grape (Hebrew University of Jerusalem, 2016). In India, Japan and South Africa the scale has little economic importance in the cultivation of <i>Citrus</i> (USDA, 2007).</p> <p>So far, there are no reports on damage caused by <i>I. seychellarum</i> in the European range. In case of uncontrolled infestation, damage could mainly occur in citrus cultivation in southern Europe.</p>

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<p>Is an infestation easy to eradicate?</p>	<p>The wax excretions of <i>I. seychellarum</i> are clearly visible. By comparison, adult females with a body-length of up to one centimetre are huge.</p> <p>Experts can reliably identify the species morphologically.</p> <p>Due to the natural presence of other scales, a coincidental detection outdoors is only possible in case of high infestation density.</p> <p>Due to the protecting wax layer of the pest, the control by means of chemical agents is difficult (Plantwise, undated). In a trial in Egypt, chlorfenapyr (insecticide), pyriproxyfen (growth regulator, endocrine Inhibitor) and <i>Metarhizium anisopliae</i> (entomopathogenic fungus) turned out to be suitable control agents (Bakry <i>et al.</i>, 2015). Often the species can effectively be controlled by natural antagonists (mainly ladybugs) (Hill, 2008). Dependant on the region the efficacy of this biological control varies considerably (Plantwise, undated).</p>
<p>Literature</p>	<p>Bakry MMS, Fouad MS, Moussa SFM, Ahmed FF (2015): Field evaluation of some insecticides against <i>Insulaspis pallidula</i> and <i>Icerya seychellarum</i> on mango trees at Qena Governorate, Egypt. <i>AshEse Journal of Agricultural Science</i>, 1(4): 28-32.</p> <p>Biosecurity New Zealand (2009): Import risk analysis: Fresh coconut (<i>Cocos nucifera</i>) from Tuvalu. Ministry of Agriculture and Forestry, New Zealand, 141 S.</p> <p>EPPO (2017): <i>Icerya seychellarum</i>. EPPO Global Database https://gd.eppo.int/taxon/ICERSE/distribution (accessed: 29-08-2018; last update: 16-03-2017).</p> <p>Hebrew University of Jerusalem (2016): Plant Pests of the Middle East. <i>Icerya seychellarum</i> (Westwood). The Robert H. Smith Faculty, Department of Entomology. http://www.agri.huji.ac.il/mepests/pest/Icerya_seychellarum/ (accessed: 29-08-2018; last update: 12-08-2016)</p> <p>Hill, M G (1980): Wind dispersal of the coccid <i>Icerya seychellarum</i> (Margarodidae: Homoptera) on Aldabra Atoll. <i>The Journal of Animal Ecology</i> 46(3): 939-957.</p> <p>Hill, D S (2008): Pests of Crops in Warmer Climates and Their Control. Springer Science + Business Media, B.V., 708 S.</p> <p>Plantwise, o.D.: Plantwise Technical Factsheet: Seychelles scale (<i>Icerya seychellarum</i>).</p>

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	<p data-bbox="655 280 1399 353">https://www.plantwise.org/KnowledgeBank/Datasheet.aspx?dsid=28434 (accessed: 29-08-2018)</p> <p data-bbox="655 383 1378 566">USDA (2007): Evidence-based, Pathway-Initiated Risk Assessment of the Importation of Fresh Longan, <i>Dimocarpus longan</i> Lour., from Taiwan into the United States. United States Department of Agriculture, Animal and Plant Health Inspection Service, 113 S.</p>