Express – PRA for *Pinnaspis strachani* **– Interception –**

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Initiation: Interception of plants of *Sansevieria cylindrica* from Thailand by the Plant Protection Service North Rhine-Westphalia

Express PRA	*Pinnaspis strachani* (COOLEY 1899)		
Phytosanitary risk for Germany	**high** ☐	**mittel** ☐	**low** ☒
Phytosanitary risk for EU-Member States	**high** ☐	**mittel** ☐	**low** ☒
Certainty of assessment	**high** ☒	**medium** ☐	**low** ☐
Conclusion	The scale *Pinnaspis strachani* presumably is endemic in Asia and already occurs in protected cultivation in Germany and the Member States Hungary, Italy, Poland and possibly in Great Britain (not confirmed). So far, the species is listed neither in the Annexes of Directive 2000/29/EC nor by EPPO. *P. strachani* is extremely polyphagous. Until today, 244 host plants out of 74 plant families are known. Occasionally the species is able to cause economically relevant damage on *Citrus*, *Hibiscus*, palm, coconut, mango, manioc, banana and grapefruit. Due to unsuitable climatic conditions, it is assumed that *P. strachani* is not able to establish outdoors in Germany and in the EU. In the EU, the species is reliant on host plants in protected cultivation (greenhouses, tropical greenhouses, indoor plants). The scale has a very limited natural spread capacity. Since *P. strachani* is not able to establish outdoors in the EU, the spread capacity is very limited and normally, an infestation is easy to eradicate. Thus, the scale poses only a low phytosanitary risk to Germany and other EU-Member States. Based on this risk analysis the risk by *P. strachani* is assessed as low. Thus, *P. strachani* is not classified as a potential quarantine pest and § 4a of the Plant Inspection Order does not apply.		
Preconditions for an Express PRA fulfilled?	Could be a pest, is not listed. Until today, it is not established in the area covered by the reporting plant protection service.		
Taxonomy, common name, synonyms	Class: Insecta; order: Hemiptera; family: Diaspididae; species: *Pinnaspis strachani* COOLEY 1899; common names: Lesser snow scale, cotton white scale, Hibiscus snow scale;		

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	Synonyms: *Chionaspis* (*Hemichionaspis*) *aspidistrae* NEWSTEAD 1906 *Hemichionaspis marchali* COCKERELL 1902 *Hemichionaspis minor* var. *strachani* COOLEY 1899 *Hemichionaspis strachani* COCKERELL, 1902 *Hemichionaspis townsendi* COCKERELL, 1905 *Pinnaspis gossypii* (NEWSTEAD) HALL 1946 *Pinnaspis marchali* (Cockerell) HALL 1946 *Pinnaspis temporaria* FERRIS 1942
Does a relevant earlier PRA exist?	No
Distribution and biology	Presumably, the species originates in South Asia but meanwhile it is distributed worldwide in tropical and subtropical regions (WATSON, 2002). Additionally, it can often be found in greenhouse cultures in moderate zones. In the subtropics, the scale propagates throughout the year and produces several generations. In Cuba, the females need 45 days for one generation (MILLER, 2005). Adult females adhere to the plant and are immobile. They deposit their eggs directly beneath their scale. The males live only for a few hours and are able to fly. The only stage with active distribution are the nymphs in the first stage (Crawler). Normally, *P. strachani* is to be found on fruits, branches and stems, occasionally on leaves and fruits (WATSON, 2002).
Are host plants present in the PRA area? If so, which?	Many potential host plants are present outdoors and in protected cultivation in Germany and in the EU. Until now, totally 244 host plants from 74 plant families are known (GARCÍA MORALES, 2016). *P. strachani* prefers palms, lilies and orchids (WATSON, 2002). Presumably, the species is not able to establish outdoors in the EU.
Transfer pest from consignment →host plant	In case of physical contact with other suitable host plants, a transfer is possible.
Is a vector/further plant needed for host alternation? Which? Distribution?	No, the species spreads over short distances via the first mobile first larvae stage or via the wind.
Climate in distribution area comparable to PRA area?	No, the species is cosmopolitan in the tropics and subtropics.
If no, are host plants present in protected cultivation?	Throughout the EU, an establishment is possible in protected cultivation with tropical climate. Possible host plants are, amongst others, *Cycas revoluta*, tropical orchids, palms, rubber tree, geranium, pelargonium and hibiscus.
Damage to be expected in the PRA area?	In severe infestation, *P. strachani* causes leaf discolouration, witling, possibly early leaf fall and the dying

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	of shoots (CABI CPC, 2018). Severe infestation may lead to the dying of plants (MALUMPHY et al., 2015). (WATSON, 2002). As a consequence of a severe infestation, also discolouration and mummification of fruits are known (WATSON, 2002).
Is an infestation easy to eradicate?	Only heavy infestation is clearly visible. The adult females are only app. 1.5 – 2.5 mm long. On closer look, infested plants show the white or grey body coverings of the females on leaves, bark and fruits (CABI CPC, 2018). Single infested plants have to be taken under quarantine to prevent the contact to non-infested plants. Normally, the animals only distribute in a plant stand, when the crowns of the plants touch. The animals can be brushed off of smaller host plants. In case of a severe infestation, the use of systemic insecticides is recommended. Contact insecticides are effective against the mobile nymphs only (Tenbrick et al., 2007). In their present distribution area, the species a very effective control is possible by means of beneficial organisms (endemic and imported for control purposes). In ornamental companies, the pest should be eradicated by means of simple cultivation measures (where necessary removal of infested plants). In case of a long-term establishment period in a bigger tropical greenhouse, an eradication attempt seems to be unreasonable. Nevertheless, it is possible to control *P. strachani* very effectively by means of beneficial organisms (parasitoids of the genus *Encarsia* or ladybeetles like *Chilocorus nigritus*).
Remarks	------
Literature	CABI CPC, 2018: Datasheet – Pinnaspis strachani (lesser snow scale). CABI Crop Protection Compendium. https://www.cabi.org/cpc/datasheet/41334 (accessed on 05-11-2018; updated: 29-03-2018) TENBRICK, V. L., A. H. HARA, J. M. DIEZ, 2007: Pinnaspis strachani (Cooley). Crop Knowledge Master, University of Hawaii, Dept. of Entomology. http://www.extento.hawaii.edu/kbase/crop/type/p_strach.htm (accessed on: 05-11-2018, updated: April 2007) GARCÍA MORALES, M., B.D. DENNO, D. R. MILLER, G. L. MILLER, Y. BEN-DOV, N. B. HARDY, 2016: ScaleNet: A literature-based model of scale insect biology and systematics. Database. doi: 10.1093/database/bav118 http://scalenet.info (accessed on 05-11-2018) MALUMPHY, C.P., M. D. SANCHEZ, M. A. HAMILTON, 2015: First report of lesser snow scale *Pinnaspis strachani* (Cooley) (Hemiptera: Diaspididae) killing *Varronia rupicola* (Urb.) Britton in the British Virgin Islands. Entomologist's Monthly Magazine 151: 285-288.

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