Express-PRA[1] for *Ctenarytaina eucalypti* – Occurrence –

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Initiation: Occurrence on *Eucalyptus* in a greenhouse in the Federal State Bavaria

Express-PRA	***Ctenarytaina eucalypti* (Maskell, 1890)**		
Phytosanitary risk for Germany	**high** ☐	**medium** ☐	**low** ☒
Phytosanitary risk for EU-Member States	**high** ☐	**medium** ☐	**low** ☒
Certainty of the assessment	**high** ☒	**medium** ☐	**low** ☐
Conclusion	The psyllid *Ctenarytaina eucalypti* is endemic to Australia and has already been introduced repeatedly to Germany in recent years, but has obviously always been eradicated. In the EU, it has already been detected in France, Ireland, Italy, Portugal and Spain. So far, the psyllid is not listed in the Annexes of Regulation (EU) 2019/2072 or by EPPO. *Ctenarytaina eucalypti* infests *Eucalyptus*. Due to suitable climatic conditions, it is assumed that *C. eucalypti* can establish outdoors in moderate regions of Germany (at least temporarily), the establishment in south European EU-Member States is possible, too. Furthermore, presence resp. establishment in protected cultivation is possible. Damage can be effectively contained by the calcyd wasp *Psyllaephagus pilosus* that has also been detected in Germany, so only a low overall potential for damage to eucalyptus plants in Germany and other EU-Member States is assumed. Therefore, *Ctenarytaina eucalypti* is not classified as a quarantine pest and Article 29 of Regulation (EU) 2016/2031 does not apply.		
Taxonomy[2], common name, synonyms	Hemiptera, Sternorrhyncha, Psylloidea Aphalaridae, *Ctenarytaina*, *Ctenarytaina eucalypti* (Maskell, 1890). Synonyms: *Eurhinocola eucalypti* Pettey, 1927, *Rhinocola eucalypti* Maskell, 1890		
EPPO Code	CTNREU		

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Does a relevant PRA exist?	No.
Biology	*Ctenarytaina eucalypti* colonizes the juvenile shoots of its host plants. Mass propagation can occur at these points. Because plants used for cut foliage are continuously rejuvenated by pruning, *C. eucalypti* has optimal conditions for vigorous propagation. One female can lay up to 100 eggs on the young leaves and buds. The psyllid has five larval stages. In regions with optimal climatic conditions, one generation needs approx. 30 days for development; generations may overlap. *Ctenarytaina eucalypti* can hibernate as egg and as larva. In Ireland, the freshly emerged adult psyllids started oviposition already again in February. Two (overwintering as egg) or three (overwintering as larvae) generations per year are detected there, in California at least four and in the Mediterranean region six to eight (Schnee et al. 2006 and articles cited there).
Is the pest a vector?[3]	Unknown.
Is a vector needed?[4]	No.
Host plants	*Eucalyptus* sp., *Eucalyptus globulus* (EPPO, 2021), *E. pulverulenta*, *E. neglecta* and *E. gunnii* (Hodkinson 1999).
Symptoms[5]	The sucking of the larvae and adults causes leaf deformation and stunting. The larvae excrete woolly wax filament and honeydew, on which fungi of the Dematiaceae family establish. Numerous remains of moulting can be found on the leaves (Schnee et al. 2006).
Presence of the host plants in Germany[6]	*Eucalyptus* trees are present in botanical gardens (overwintering mostly in coldhouses) and greenhouses, besides, they are grown as cut foliage, partially also outdoors.
Presence of the host plants in the Member States[7]	In EU-Member States in the Mediterranean region, *Eucalyptus* is present outdoors and there, it is partially invasive.
Known infested areas[8]	Australia, New Zealand, Kenya, USA (California), Portugal (Madeira), Italy (EPPO, 2021). According to Schnee et al. (2006), Burckhardt (1998) and citations there, the psyllid also was introduced to Great Britain, France, Spain and Ireland and is present in Papua-Neuguinea, Sri Lanka and South Africa, too. Burckhardt (1998) described *Ctenarytaina eucalypti* as new for Germany due to an occurrence in Baden-Württemberg (Karlsruhe and Lauffen) in 1997. In 2000, the species was found in Saxony (botanical garden, Dresden) for the first time.

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	Schnee et al. (2006) indicate that the infested *Eucalyptus* plants there were grown from seeds. In summer, the plants grew outdoors and overwintered in a coldhouse. So the psyllid was not directly introduced there via plant material. Schnee et al. (2006) suspect an influx of infested eucalyptus branches from wholesale floricultural markets (cut foliage) or the retail trade. Since the parasitoid *Psyllaephagus pilosus* was detected virtually simultaneously with the infestation of the plants, it is suspected that the cut foliage came from France, Ireland, Italy or Great Britain where *P. pilosus* was used for biological control of the psyllid resp. spread there. In 2001, *C. eucalypti* occurred in the botanical garden in Hamburg, also on *E. globulus*. In 2003, *E. globulus* and *E. gunnii* were infested in a green house in Saxonia Anhalt. In the botanical gardens in Kiel and Leipzig, there was an extensive occurrence of *C. eucalypti* in 2004. The psyllid is also occasionally found in the interior landscaping (Schnee et al., 2006).
Pathways[9]	Via infested plants or infested cut foliage. Spread particularly via wholesale floristry and the florist retail.
Natural spread[10]	Spread by flight and wind.
Expected establishment and spread in Germany[11]	Under certain conditions the establishment of the psyllid is possible outdoors in Germany: In the mild viticultural climate in southwestern Germany, perennial open field cultivation of *Eucalyptus* cut foliage is successfully carried out in some companies. In addition, one-year cultivation outdoors appears to be possible in each case, as demonstrated in trials by the Saxon State Institute for Agriculture (Schnee et al. 2006). Amongst the various *Eucalyptus* species, e.g. *E. gunnii, E. niphophila* and E. *debeuzevillei* belong to the most frost-resistant species. They can overwinter outdoors if the winter is not too hard. Thus, the psyllid has host plants available outdoors, at least temporarily.
Expected establishment and spread in the Member States[12]	In Member States in the Mediterranean region, eucalyptus trees are widespread. Also in Ireland, the trees are present outdoors, establishment did already happen.
Known damage in infested areas[13]	*Ctenarytaina eucalypti* can cause damage in eucalyptus cultivations for cut foliage. Due to the increase of the eucalyptus cultivation in California and west European cultivation areas, mass propagation of the psyllid took place causing significant damage. In the area of origin, on the other

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	hand, *C. eucalypti* causes very little damage since natural enemies (like e.g. *Psyllaephagus pilosus*) delimit the population density (Schnee et al., 2006).
Delimitation of the endangered area in Germany	Warmer regions in Germany, where *Eucalyptus* can survive outdoors, in greenhouses, companies for the production for eucalyptus cut foliage.
Expected damage in endangered area in Germany[14]	Temporarily, damage can occur on the shoot tips of eucalyptus, but since the effective parasitoid *Psyllaephagus pilosus* has already been detected in Germany, a fast containment of the infestation and thus of the damage is possible.
Expected damage in endangered area in the Member States[15]	Temporarily, damage can occur on the shoot tips of eucalyptus. *Psyllaephagus pilosus* is already present in the EU and can provoke a fast containment of the infestation.
Control and measures[16]	Insecticide treatments are laborious and not very effective, but an effective control can be carried out by means of the monophagous parasitoid *Psyllaephagus pilosus*. The release of the chalcid wasp from a controlled breed, lead to a rapid establishment in Californian eucalyptus plantings and the effective reducing of the psyllid (Dahlsten et al. 1998). Because of the success, *P. pilosus* was applied in several European countries where there was a rapid spread, too, also over great distances. Parasitization rates of *C. eucalypti* of up to almost 100% with the chalcid wasp were observed. The infestation of *Eucalyptus globulus* in the botanical garden in Dresden was completely eradicated in this way (Schnee et al. 2006).
Detection and diagnosis[17]	Symptoms on the shoots of eucalyptus as well as the presence of fungi of the Dematiaceae family may already indicate an infection with *C. eucalypti*. An identification key can be found in Spodek et al. (2015).
Remarks	--
Literature	Burckhardt, D. (1998): *Ctenarytaina eucalypti* (Maskell) (Hemiptera, Psyllidae) neu für Mitteleuropa mit Bemerkungen zur Blattflohfauna von *Eucalyptus*. Mitt Ent Ges Basel 48: 59–76. Dahlsten, D., Hansen, E., Zuparko, R., Norgaard, R. (1998): Biological control of the blue gum psyllid proves economically beneficial. California Agriculture, 52 (1), 35-40.

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	EPPO (2021): *Ctenarytaina eucalypti* (CTNREU) EPPO Global Database. Online available: https://gd.eppo.int/taxon/CTNREU accessed on 26-10-2021. Hodkinson, I. D. (1999): Biocontrol of eucalyptus psyllid *Ctenarytaina eucalypti* by the Australian parasitoid *Psyllaephagus pilosus*: a review of current programmes and their success. Biocontrol News and Information 20:129–134. Schnee, H., Voigt, D., Kaufer, B. (2006): Die biologische Bekämpfung des Eukalyptusblattsaugers *Ctenarytaina eucalypti* (Maskell)(Hemiptera, Psyllidae) durch die Erzwespe *Psyllaephagus pilosus* Noyes (Hymenoptera, Encyrtidae) – eine Erfolgsgeschichte in Kalifornien und Westeuropa, aber auch in Sachsen. Gesunde Pflanzen, 58 (2), 99-106. Spodek, M., Burckhardt, D., Protasov, A., Mendel, Z. (2015): First record of two invasive eucalypt psyllids (Hemiptera: Psylloidea) in Israel. Phytoparasitica, 43 (3), 401-406.

Remarks

Erläuterungen

[1] Compilation of the most important directly available information allowing a first preliminary estimation of the phytosanitary risk. This short assessment is necessary for the decision on a notification to EU and EPPO as well as the preparation of a complete risk analysis, for the information of the countries and as a basis for the possible initiation of eradication measures. Regarding the phytosanitary risk especially the possibility of the introduction to and spread in Germany and the Member States as well as possible damage are taken into account.

[2] Taxonomic classification – also subspecies – in the case that the taxonomical classification is uncertain the JKI-scientist initiates the taxonomic classification as far as possible.

[3] If so, which organism (which organisms) is (are) transmitted and does it (do they) occur in Germany / the MS?

[4] If so, which organism serves as a vector and does it occur in Germany / the MS?

[5] Description of the pattern of damage and the severity of the symptoms/damage on the different host plants

[6] Presence of host plants in protected cultivation, open field, amenity plantings, forest…….; where, in which regions are the host plants present and to which extent?
How important are the host plants (economical, ecological, …)?

[7] Presence of the host plants in protected cultivation, open field, amenity plantings, forest ....; where, in which regions are the host plants present and to which extent?
How important are the host plants (economical, ecological, ...)?, possible origin

[8] E.g. according to CABI, EPPO, PQR, EPPO Datasheets.

[9] Which pathways are known for the pest and of which relevance are they in respect to the probability of the spread? Primarily the transport over long distances is meant, normally with infested traded plants, plant products or other contaminated articles. This does not comprise the natural spread resulting from introduction

[10] Which pathways are known for the pest and of which relevance are they in respect of the probability of the spread? In this case the natural spread resulting from introduction is meant.

[11] Under the given prevalent environmental conditions

[12] Under the given prevalent environmental conditions (native areas and areas of introduction

[13] Description of the economic, ecological/environmental and social damage in the area of origin resp. areas of occurrence up to now

[14] Description of the economic, ecological/environmental relevant and social damage to be expected in Germany, as far as possible and required, differentiated between regions

[15] Description of economic, ecological/environmental and social damage to be expected in the EU /other Member States, as far as possible and required, differentiated between regions

[16] Can the pest be controlled? Which possibilities of control are given? Are plant health measures conducted in respect to this pest (in the areas of current distribution resp. by third countries)?

[17] Description of possibilities and methods for detection. Detection by visual inspections? Latency? Uneven distribution in the plant (sampling)?