Express-PRA[1] for *Aclees taiwanensis* – Occurrence –

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Initiation: Occurrence on *Ficus carica* in a nursery in the Federal State Rhineland-Palatinate

Express-PRA	***Aclees taiwanensis* Kôno, 1933**		
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 weevil *Aclees taiwanensis* is endemic to Taiwan and already present in the EU. So far, it is not listed in the Annexes of Regulation (EU) 2019/2072 or by EPPO. *Aclees taiwanensis* infests *Ficus*-species. Due to unsuitable climatic conditions in the open field in Germany, it is assumed that *A. taiwanensis* cannot establish or can only establish to a very limited extent. Establishment in southern EU-Member States has already taken place and continues to be possible. Because of its high damage potential for *Ficus*-species, *A. taiwanensis* poses a significant phytosanitary risk, especially for southern EU-Member States. Based on this risk analysis, it is assumed that *Aclees taiwanensis* can establish resp. spread, especially in southern Member States, and can cause significant damage. Subject to the decision of the southern Member States whether a quarantine regulation should be sought, it is recommended to destroy infested plants as a precautionary measure.		
Taxonomy[2], common name, synonyms	Coleoptera, Curculionidae, Molytinae, *Aclees, Aclees taiwanensis* Kôno, 1933 First identified in Italy and France as *Aclees cribratus* Gyllenhal and *Aclees* sp. cf. *foveatus* Voss, respectively.		
EPPO Code	ACEETW		
Does a relevant earlier PRA exist?	No.		

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Biology	At a temperature of 25 °C, the development of the beetle from egg to adult takes 16 weeks, with a duration of the 5 larval stages of 77 days and a pupal stage of 23 days (Bassi et al., 2021). In Italy, the weevil is active all year round. Adults overwinter in the ground or in bark cracks. The egg production (more than 180 eggs per female were observed) is higher in late spring and early summer but can last beyond October. In southern Italy, the species has two peaks of population density, one in June/July and one in September/October (Farina et al., 2021). Larvae feed on wood at the stem base, mostly under the soil surface (Hong et al., 2020). At the end of the larval stage, the larva is found in the outer part of the bark and then pupates. At this stage, orange/light brown drops emerge from the bark. Adults feed on buds, leaves and (unripe) fruits (Ciampolini et al., 2005, Benelli et al., 2014, Farina et al., 2021, Gargani et al. 2021).
Is the pest a vector?[3]	No, nothing is known about this.
Is a vector needed?[4]	No.
Host plants	*Ficus carica*, *F. benjamina*, *F. microcarpa*, *F. pandurata*, and other *Ficus* species. Of the studied species mentioned here, *A. taiwanensis* was able to complete its cycle only in *F. carica* and *F. microcarpa* (Farina et al. 2021).
Symptoms[5]	As a result of the destruction of the wood by the larvae the parts above ground show reduced growth, yellowing, signs of dieback, eventually the trees die completely (Hong et al. 2020). Light brown shavings on the stem, progressive decay of the plant or initially of single parts, bore holes in the lower part of the stem or on the branches (Bassi et al., 2021, there also photos).
Presence of the host plants in Germany[6]	In gardens and parks as ornamental plants especially in southern Germany. Various *Ficus*-species also as indoor plants.
Presence of the host plants in the Member States[7]	Commercial cultivation in southern Member States (Spain, Italy, Greece, France). Widely used as ornamental plants. In Italy, the cultivation area of *Ficus carica* has been drastically reduced over the years, from approx. 40,000 ha in 1970 to approx. 2,000 ha in 2020. In Spain where the weevil is not yet present, the cultivation area has been reduced, too– from approx. 19,000 ha in 2005 to approx. 12,000 ha in 2006; in

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	2020, however, the cultivation area increased again to almost 16,000 ha (see fig. 1). Also in Greece, the fig production was reduced slightly (in 2006: approx. 6,000 ha, in 2020: approx. 4,000 ha) (Farina et al., 2021, FAOSTAT, 2022).
Known infested areas[8]	Apparently endemic to Taiwan. Further infested areas: Korea, China, Myanmar and Indonesia. The weevil was introduced into France, too (Mouttet et al., 2020, as *Aclees* sp. cf. *foveatus* Voss; Bassi et al., 2021) and into Italy (Ciampolini et al., 2005, as *A. cribratus*; Benelli et al., 2014, as *Aclees* sp. cf. *foveatus* Voss, Meregalli et al., 2020a and b). In 1990, the first records on *Aclees* sp. in Europe were made in French greenhouses in the region of Paris on *Ficus retusa* from Taiwan. In 2003, it was found in a nursery in the Ardèche also on Bonsai. No establishment was recorded in these two locations. In both cases, the species was identified as *A. cribratus* Gyllenhal, 1835. Later, it was corrected to *A. taiwanensis*. First outdoor findings in France did not occur until 2019 (Mouttet et al., 2020), in the cantons Var (Provence) and Haute-Corse (Corsica), furthermore in the canton Alpes-Maritimes (Mouttet, ANSES, FR, personal comment) and in the canton Lot-et-Garonne (https://www.insecte.org/forum/viewtopic.php?t=235290). Vigilance is called for by the „Syndicat d'Appellation Figue de Solliès" (see https://www.ville-lagarde.fr/sensibilisation-sur-le-charancon-noir-du-figuier/). In Italy, the beetle was found for the first time in 2005 in Tuscany and has since spread in northern and central Italy (Gargani et al., 2021). On iNaturalist (http://www.inaturalist.org) one finding is recorded from Slowenia near Piran.
Pathways[9]	Via plants for planting, Bonsai.
Natural spread[10]	Larvae only move around in very small spaces. The adult beetles have two well-developed wings and can fly well, but usually move by crawling, so that spread is slow. When disturbed, they drop to the ground in rigor mortis (Gargani et al., 2021).
Expected establishment and spread in Germany[11]	Due to the climatic conditions in Germany, a permanent establishment is generally not expected, but in particularly warm habitats and in the future, possibly as a result of climate change, it cannot be excluded completely.

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Expected establishment and spread in the Member States[12]	Further establishment and spread is expected in southern Member States.
Known damage in infested areas[13]	Dieback of fig trees and other *Ficus* species (Benelli et al. 2014 with reference to Ciampolini et al. 2007, 2008). Although *A. taiwanensis* poses a threat for *Ficus*-species in nurseries and orchards, there are no concrete data on damage to fig production so far (Farina et al., 2021). The feeding activity of the larvae is not detectable at the beginning of the infestation, so that fig trees initially show no signs of stress. At the same time as the first symptoms appear, irreversible wood damage already occurs, which shortly afterwards leads to the dieback of the tree (Bernardi et al., 2022).
Limitation of the endangered area in Germany	Not relevant.
Expected damage in endangered area in Germany[14]	No (noteworthy) damage is expected.
Expected damage in endangered area in the Member States[15]	Damage to the genetic diversity of *Ficus* species, threat to and damage to fig cultivation, damage to ornamental *Ficus* species. Spread of *A. taiwanensis* infestation to other EU Member States (Farina et al. 2021).
Control feasibility and measures[16]	So far, neither chemical nor biological control strategies could reduce the damage caused by and the spread of *A. taiwanensis* (Bernardi et al., 2022). Hong et al. (2020) recommend (also for organic cultivation) the planting of healthy trees, nightly collection (using a torch) of the beetles from the trees at intervals of 2 or 3 days on the above-ground parts of the host plants, no movement of seedlings to other cultivation areas, incineration of infested plants and agricultural materials that were used in the infested cultivation areas. The late detection of infestation and the larvae's hidden life in the wood are problematic for control. Effective strategies for the detection and control of *A. taiwanensis* are urgently necessary. To control the adults, the use of specific pheromones, mass trapping and entomopathogenic bacteria (*Beauveria bassiana*) or fungi is feasible (Bassi et al., 2021, Farina et al., 2021).

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	Movement of host plants from infested areas should be avoided in any case.
Detection and diagnosis[17]	A description with photos can be found in Hong et al. (2020). Species identification within the genus is very difficult, especially because most known species are morphologically very similar (Benelli et al., 2014). Meregalli et al. (2020b) provide an identification key and details on molecular determination. For further molecular biological information see Bernardi et al. (2022).
Remarks	In principle, *A. taiwanensis* still meets the requirements to be classified as a quarantine pest under Article 29 of Regulation (EU) 2016/2031 due to the severe damage that the larvae of the beetle can cause, the still limited distribution in the EU and the difficulty of controlling it. Although there is currently no quantification of the damage and the beetle is already relatively widespread in Italy, there are still infestation-free areas where figs are grown, e.g. Calabria and Campania (Marco Boriani, Regione Lombardia, IT, personnel communication). In addition, the beetle is also spreading slowly there. Further, severe damage is expected (Elisabetta Gargani, CREA, IT, personnel communication). In France, the spread is probably still in an early stage and containment or even eradication would very likely still be possible. In Spain, the EU Member State with the highest fig cultivation rate, the beetle is apparently not yet established. It should therefore be clarified as soon as possible to what extent southern Member States that grow figs favour a regulation as quarantine pest or at least as regulated non-quarantine pest.
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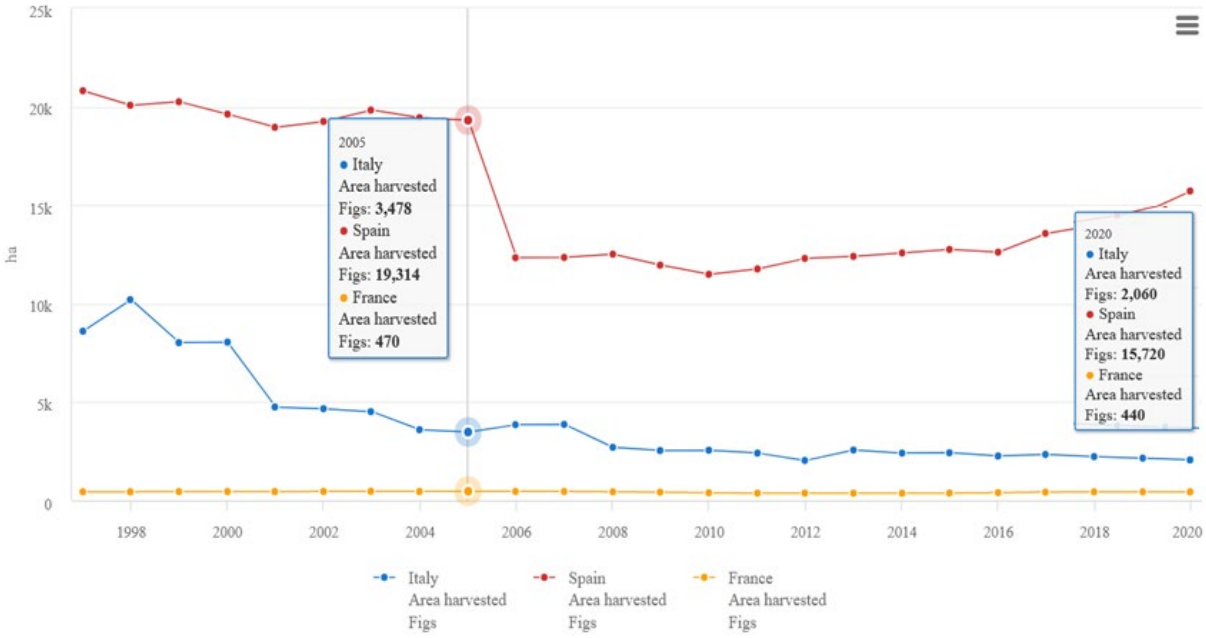

Fig. 1 Cultivation area of *Ficus carica* in Spain, Italy and France from 1997 to 2020 (FAOSTAT, 2022).

Remarks

Erläuterungen

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

2 Taxonomic classification - also subspecies - as the case may be; in the case that the taxonomic classification is uncertain, the JKI-scientist initiates the taxonomic classification as far as possible.

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

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 strength of the symptoms/damage on the different host plants

6 Presence of the host plants in protected cultivation, open field, public gardens, forest,....;
Where, in which regions are the host plants present and to which extent?
How important are the host plants (economic, ecological, ...)?,

7 Presence of the host plants in protected cultivation, open field, public gardens, forest,....;
Where, in which regions are the host plants present and to which extent?
How important are the host plants (economic, ecological, ...)?, possible origin

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

9 Which pathways are known for the pest and how important are they for the probability of introduction. Primarily the transport of the pest over long distances is meant, normally with infested traded plants, plants 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 (domestic areas and areas of introduction).

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

[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 relevant 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 previous occurrence resp. by third countries)?

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