Express-PRA[1] for *Thrips parvispinus* – Occurrence –

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Initiation: Occurrence on *Hibiscus* spp. in the Federal State Brandenburg

Express-PRA	***Thrips parvispinus* (Karny)**		
Phytosanitary risk for Germany	**high** ☐	**medium** ☐	**low** ☒
Phytosanitary risk for EU-Member States	**high** ☐	**low – medium** ☒	
Certainty for the assessment	**high** ☐	**medium** ☒	**low** ☐
Conclusion	*Thrips parvispinus* is endemic to south east Asia and is already present in the EU. So far, it is not listed in the Annexes of Regulation (EU) 2019/2072 or by EPPO, but was included in the EPPO Alert List from 2000 to 2001. *Thrips parvispinus* is polyphagous and infests e.g. pepper, chili, papaya, citrus, hibiscus, dahlia, gardenia, Mandevilla (Dipladenia) and various vegetable species. Due to unsuitable climatic conditions, it is assumed that *T. parvispinus* is not able to establish outdoors in Germany, however, the establishment in south European EU-Member States is possible. Establishment in protected cultivation is possible throughout the EU in case of sufficient high temperatures. *Thrips parvispinus* can cause damage especially in (sub-) tropical regions by feeding on its host plants; secondary infections through fungi are possible. So far, the thrips is not regarded as a significant risk for the EU but due to changes in agricultural practices and because of increasing climate change more severe damage cannot be ruled out in the future. Currently the damage potential for its host plants in the EU-Member States is rather low, therefore *T. parvispinus* is not classified as potential quarantine pest and thus, Article 29 of Regulation (EU) 2016/2031 does not apply. Nevertheless, as a precaution, it is recommended to destroy infected plant material resp. to take control measures for the prevention of significant damage.		

Express-PRA	*Thrips parvispinus* (Karny)
Taxonomy[2], common name, synonyms	Thysanoptera, Thripidae, *Thrips*, *Thrips parvispinus* (Karny) Synonyms: *T. taiwanus*, *Isoneurothrips jenseni, Isoneurothrips parvispinus*
EPPO Code	THRIPV
Does a relevant earlier PRA exist?	A quickscan (comparable to an Express-PRA) of the Dutch plant protection service is available (NL Quickscan, 2019).
Biology	Under controlled conditions in glasshouses, 5 juvenile stages of *T. parvispinus* were observed on chili pods (*Caspicum annuum*) (all average values): eggs (4.79 days), two nymph stages (1.36 and 3.54 days), prepupae (1.08 days) and pupa (1.96 days). After emergence, females laid their eggs after 1.11 days, the life duration of the females was 8.55 days, the life duration of the males was 6.00 days. 15.33 eggs were laid per female. The life cycle was 13.68 days (Hutasoit et al. 2017). The eggs are laid into leaves; larvae feed on leaves and flowers (Soto-Adames, 2020).
Is the pest a vector?[3]	In transmission studies in respect to infested tomato pollen on *Chenopodium amaranticolor*, the thrips was identified as vector of Tobacco streak ilarvirus (tobacco streak virus) that already is present in several EU-Member States (Denmark, France, Italy, the Netherlands) (Klose et al. 1996, EPPO, 2001).
Is a vector needed?[4]	No.
Host plants	Major host plants: *Capsicum annuum*, *Carica papaya*, *Citrus*, *Dahlia, Mandevilla* (Dipladenia), *Ficus benjamina*, *Gardenia*, *Gerbera, Schefflera*, vegetables (EPPO, 2001, NL Quickscan, 2019). Further host plants, see Sartiami and Mound (2013).
Symptoms[5]	Leaf damage. The damaged leaf can show symptoms of deformation, leaf spots/stripes and holes in the leaf blade. On papayas, the thrips cause light formation of spots and streaks of the leaf without deformation, in combination with the fungus *Cladosporium oxysporum* symptoms are stronger (Lim, 1989).
Presence of the host plants in Germany[6]	Widespread (outdoors and/or in protected cultivation).
Presence of the host plants in the Member States[7]	Widespread (outdoors and/or in protected cultivation).

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Known infested areas[8]	Indonesia (Java, damage on pepper), Malaysia (damage on papaya), Singapore, Taiwan, Thailand (damage on vegetables), Australia, Solomon Islands (EPPO, 2001). Philippines, Yunnan (China), India, La Reunion, Mauritius, Tansania, Uganda, Hawaii (NL Quickscan, 2019). EPPO GD (2021) lists also Myanmar, Barbados and Florida. EPPO Region: France, Greece (single findings, damage on gardenia), Spain (EPPO GD, 2021), the Netherlands (NL Quickscan, 2019). As far as known, none of these EU-Member States has taken phytosanitary measures.
Pathways[9]	Plants for planting, cut flowers and twigs from countries where the thrips occurs (EPPO, 2001).
Natural spread[10]	Data on natural spread are not available. However, it is assumed that at high temperatures, the thrips can spread over several hundred meters via wind drift like other thrips species. The certainty of natural spread between greenhouses is assumed as low to very low in regions with cooler weather (NL Quickscan, 2019).
Expected establishment and spread in Germany[11]	In (warm) glasshouses, establishment is possible. It is assumed that the thrips cannot establish outdoors.
Expected establishment and spread in the Member States[12]	Establishment is possible in (warm) glasshouses. Further establishment outdoors in subtropical EU-Member States cannot be excluded.
Known damage in infested areas[13]	Direct feeding damage. In south east Asia (particularly Indonesia, Malaysia, the Philippines, Thailand and Taiwan), the thrips is a significant pest that causes significant damage on *Capsicum*. In Malaysia, damage on papayas with secondary damage caused by the saprophyte fungus *Cladosporium oxysporum* is observed. In case of the absence of *Cladosporium oxysporum*, the thrips cause only slight forming of spots or streaks on the leaf without deformation of the leaf, while *C. oxysporum* without thrips caused no infektion (Lim, 1989). Gardenia plants in Greece showed massive damage on the leaves.
Limitation of the endangered area in Germany	Protected cultivation of ornamentals and vegetables.

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Expected damage in endangered area in Germany[14]	No significant damage is expected.
Expected damage in endangered area in Member States[15]	Isolated, possibly also more severe damage must be expected, like e.g. in the case of gardenia in Greece.
Control and measures[16]	Chemical control is possible, but probably difficult as with many other thrips species. According to EPPO RS (2019) *T. parvispinus* can be controlled with pesticides as used e.g. against *Frankliniella occidentalis*. A field trial in Malaysia on chemical control showed that weekly spraying with fungicide containing Benomyl in alternation with Mancozeb produced a very good control of clusters/deformed tips on papayas while insecticide sprays (decamethrine and methamidophos) only resulted in a limited control (Lim, 1989).
Detection and diagnosis[17]	A detailed description can be found in Moritz et al. (2013).
Remarks	--
Literature	EPPO (2001): Mini data sheet on *Thrips parvispinus*, EPPO RS 2000/061, online available: https://gd.eppo.int/taxon/THRIPV/documents accessed on 10-12-2021. EPPO RS (2019): EPPO Reporting Service Nr. 10 - 2019/204. First report of *Thrips parvispinus* in Spain. Online available: https://gd.eppo.int/reporting/article-6634 accessed on 10-12-2021 EPPO GD (2021): *Thrips parvispinus* (THRIPV), EPPO Global Database, online available: https://gd.eppo.int/taxon/THRIPV, accessed on 10-12-2021. HUTASOIT, R. T., TRIWIDODO, H., ANWAR, R. (2017): Biologi dan statistik demografi Thrips parvispinus Karny (Thysanoptera: Thripidae) pada tanaman cabai (Capsicum annuum Linnaeus). Indonesian Journal of Entomology, 14(3), 107-116, English Abstract. KLOSE, M. J., SDOODEE, R., TEAKLE, D. S., MILNE, J. R., GREBER, R. S., WALTER, G. H. (1996): Transmission of three strains of tobacco streak ilarvirus by different thrips species using virus-infected pollen. *Journal of Phytopathology*, 144(6), 281-284.

LIM, W. H. (1989). Bunchy and malformed top of papaya cv. Eksotika caused by *Thrips parvispinus* and *Cladosporium oxysporum*. Mardi Res. J, 17, 200-207.

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SARTIAMI, D., MOUND, L. A. (2013): Identification of the terebrantian thrips (Insecta, Thysanoptera) associated with cultivated plants in Java, Indonesia. ZooKeys, 306, 1-21.

SOTO-ADAMES, F. N. (2020): *Thrips parvispinus* (Karny). Pest Alert. Florida Department of Agriculture and Consumer Services, Division of Plant Industry. FDACS-P-01926. 3 pages. Online available: https://www.fdacs.gov/content/download/93435/file/PESTALERT-Thripsparvispinus%28Karny%29.pdf accessed on 16-12-2021.

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)?