

1. Content of the 'Topic Description' document

1.1. Topic area

Diagnostics, field detection and surveillance.

1.2. Topic title

Monitoring, detection and identification of the Japanese flower thrips *Thrips setosus*.

1.3. Description of the problem the research should solve

Thrips setosus (Thripidae Thysanoptera) is a polyphagous pest on vegetables and ornamentals, present in Asia (Japan and South-Korea) and it is listed on the EPPO Alert list (https://www.eppo.int/QUARANTINE/Alert_List/alert_list.htm). It was first detected in Europe in a nursery on Hydrangea pot plants in a greenhouse in the Netherlands in September 2014, and subsequently in France (2014) and Germany (2015). *T. setosus* is a leaf feeder, which can transmit *Tomato Spotted Wilt Virus* (TSWV) within various crop and non-crop host plants. The probability of establishment of *T. setosus* in the EU was rated as medium to high both for greenhouses and for the field, also due to its ability to survive low temperatures in a reproductive diapause. Infested leaf material, stems of host plants and growing substrates are currently considered as potential pathways. The degree of economic damage is unclear, as massive plant protection measures are applied against other occurring pests in the affected crops in those countries where *T. setosus* is present. Especially indirect damages through the spread of TSWV and consequences for the export from Europe to third countries are expected. The spread and establishment of *T. setosus* shall be prevented by the development of improved methods and tools for inspection and early detection. Visual inspection measures and agreed monitoring methods shall be developed to improve monitoring of *T. setosus* and detection shall be improved by newly developed standard identification protocols for adult and larval stages.

1.4. Description of the expected results

- Description of reliable related visual damages which could be used for visual inspection measures
- Standard identification protocols for adult and larval stages of *T. setosus*
- Updated survey of actual presence and geographical distribution of *T. setosus* in partner countries in the EPPO Region monitored with agreed monitoring and detection methods
- Updated list of host plants actually affected in partner countries in the EPPO region (also based on the outcome of the EPPO Survey request 16-21346 to the NPPOs)

1.5. Beneficiaries of this research product

- National Plant Protection Services (reference labs, inspectors, risk managers)
- Approved laboratories for official diagnostic tests
- Professional associations and Technical Institutes
- Ornamental and vegetables growers

1.6. Research funders and research contribution/ distribution

Funding organisation	Research activity and researchers involved
1. Austrian Agency for Health and Food Safety, Austria Sylvia Bluemel sbluemel@ages.at	-Survey for the presence of <i>Thrips setosus</i> in Austria. -Morphological identification of <i>T. setosus</i> from monitoring samples. - <i>T. setosus</i> identification by DNA bar coding,



	<p>(including development of a standard protocol for the identification of <i>T. setosus</i> adults and larva). The Barcoding protocol (including a generic PCR and sequencing) will be developed on the COI gene and a standard (fast and cost effective) DNA extraction method for Thripidae will be developed. These procedures will be adapted and optimized for Thripidae (including activities performed during routine testing of e.g. imported consignments); Material used can also consist of samples from the monitoring activities. A transnational coordination for the exchange of material to be tested would be welcomed and could be implemented in the validation of a possibly agreed common protocol.</p> <p>Contact: Sylvia Bluemel E.mail address: sbluemel@ages.at</p>
<p>2. French Agency for Food, Environmental and Occupational Health & Safety, France</p> <p>Géraldine ANTHOINE geraldine.anthoine@anses.fr</p>	<p>-Survey for the presence of <i>T. setosus</i>: Through the official biological survey of the French territory, <i>T. setosus</i> will be monitored in different regions on ornamental and vegetable plants (mainly outdoor crops).</p> <p>-Morphological identification of Thysanoptera (adults and larvae, if possible) including <i>T. setosus</i> and use of barcoding if needed.</p> <p>-<i>T. setosus</i> identification by DNA bar coding (Contribution to diagnostic protocols for identifying protocol for the identification of <i>T. setosus</i> including adults and larva).</p> <p>Contact: Philippe Reynaud E.mail address: philippe.reynaud@anses.fr</p>
<p>3. National Food Chain Safety Office, Hungary</p> <p>George Melika melikag@nebih.gov.hu</p>	<p>-Survey for the presence of <i>T. setosus</i> (surveys have been carried out since 2015 in vegetable and ornamental greenhouses in different Hungarian areas and it is an ongoing activity in 2016-2017).</p> <p>-Morphological identification of <i>T. setosus</i> from monitoring samples.</p> <p>-<i>T. setosus</i> identification by DNA bar coding, (including development of a standard protocol for the identification of <i>T. setosus</i> including adults and larva).</p> <p>-Clarification of the role of <i>T. setosus</i> in TSWV transmission.</p> <p>Contact: Szilvia Orosz E.mail address: oroszs@nebih.gov.hu</p>
<p>4. Netherlands Food and Consumer Product Safety Authority, the</p>	<p>-Survey for the presence of <i>T. setosus</i>: survey for the presence of <i>Thrips setosus</i> inside and outside</p>



<p>Netherlands</p> <p>Martijn Schenk M.Schenk1@nvwa.nl</p>	<p>greenhouses in the Netherlands.</p> <p>-Morphological identification of <i>T. setosus</i> from monitoring samples for adults and larvae; combining molecular and morphological analysis.</p> <p>-Optional: 1 day workshop on identification of <i>Thrips setosus</i> and look-a-likes (linked to one of the project meetings).</p> <p>Contact: Bert Vierbergen Email address: g.vierbergen@nvwa.nl</p> <p>Contact: Antoon Loomans Email address: a.j.m.loomans@nvwa.nl</p>
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1.7. Research project partnership outside Euphresco

Currently not foreseen, but welcomed; to be decided after acceptance of Topic.

1.8. Any other relevant information on content

The outcome of the EPPO Survey request 16-21346 to the NPPOs shall be considered if available.

2. Euphresco management aspects of the project

2.1. Indication of the topic budget

Funding organisation ^a	Mechanism ^b	Total Budget ^c
1. AGES (AT)	NC	€ 28 000
2. ANSES (FR)	NC	€ 28 100
3. NFCSO (HU)	NC	€ 2 000
4. NVWA (NL)	NC	€ 8 000
total		€ 66 100

2.2. Expected duration of the project (only for non-competitive topics)

24 months.

2.3. Any other relevant information on topic organisation and management

References:

Anonymous, 2014. Quick Scan der Niederlande zu *Thrips setosus*, Quick Scan Nummer QS. Ent.2014.11 https://www.nvwa.nl/txmpub/files/?p_file_id=2207523

Anonymous, 2014. First finding of *Thrips setosus* at grower of Hydrangea plants for planting. October 2014 Pest Report – the Netherlands. https://www.nvwa.nl/txmpub/files/?p_file_id=2207478

Schrader G, 2015. Express – PRA1) zu *Thrips setosus* http://pflanzenengesundheit.jki.bund.de/dokumente/upload/c9549_thrips-setosus_express-pra.pdf

EPPO, 2016. *Thrips setosus* (Thysanoptera: Thripidae). http://www.eppo.int/QUARANTINE/Alert_List/insects/thrips_setosus.htm

Vierbergen, G. & A.J.M. Loomans 2016. *Thrips setosus* (Thysanoptera: Thripidae), the Japanese flower thrips, in cultivation of Hydrangea in the Netherlands. Entomologische Berichten, 76(3) 103-108.

^a First member is project coordinator. A minimum of two partners are necessary for each proposal. Add lines as needed.

^b Please indicate the preferred mechanism (e.g. real pot RP; virtual pot VP; non-competitive NC), or several mechanisms if there is flexibility.

^c Optional, as this amount can still change in the next phase. In-kind contribution should also be indicated in this column.