



3	What is the current area of distribution?	<p>Widespread in Southeast Asia to northern Australia and Solomon Islands (Palmer, 1992), extending its area of distribution to the north (Yunnan – China) (Zhang et al., 2011), the Philippines (Reyes, 1994) and Taiwan (Mound &amp; Masumoto, 2005), and west (India in 2014: Tyagi, 2015; Rachana et al., 2018). Moritz et al. (2013) mentioned this species as present in New Zealand, but this could not be verified. It has been reported from Hawaii in 2006 (Sugano &amp; al., 2013). In Africa, it has been recorded from the French overseas department La Reunion (Bournier, 2000), from Mauritius (Mound, 2010) and from the mainland in Tanzania (Dar-el-Salaam) and Uganda (Kampala) (Moritz et al., 2013). In Europe, it has been reported from Greece in 1998 (Mound &amp; Collins, 2000), Spain in 2017 (Lacasa &amp; al., 2019) and from France in 2018 (Philippe Reynaud, Anses France, pers. comm., 2019) and 2019 (EFSA, 2019)</p>
		<p>Interceptions have been reported on produce such as cut flowers and vegetables, indicating its potential to spread via trade. In the Netherlands <i>T. parvispinus</i> has been intercepted (as <i>T. taiwanus</i>) as early as 1996 on a consignment of <i>Gardenia</i> cut flowers from Indonesia and on shipments containing various cut flower species from Asia since then. Other European countries have intercepted <i>T. parvispinus</i> several times during the past 2 decades:</p> <ul style="list-style-type: none"> <li>- in the UK on <i>Gardenia</i> from Indonesia (Mound &amp; Collins 2000) and on Orchidaceae from Malaysia (Collins, 2010),</li> <li>- in Switzerland on <i>Rosa</i> spp. from Thailand (January 2013) and on <i>Momordica charantia</i> from Sri Lanka in 2016 (Andreas von Felten, Swiss Plant Protection Service SPPS, pers. comm., 2019.) and on <i>Solanum aethiopicum</i> vegetables from Uganda (EPPO, 2016; EU, 2016)</li> <li>- in France it was intercepted on <i>Momordica charantia</i> vegetables from Cambodia (EPPO, 2014).</li> </ul> <p>In Japan it has been intercepted on <i>Heliconia</i> shipped from Mauritius (Masumoto &amp; al. 2003). Although most interceptions have been made on cut flowers and vegetables, <i>T. parvispinus</i> has been intercepted on plants for planting in the Netherlands, on <i>Ixora</i> pot plants from Thailand in 2005, and on a <i>Whrightia</i> pot plant from Indonesia in 2013.</p>
4	What are the host plants?	<p>Polyphagous pest on mainly fruit, vegetable and ornamental crops in different families, such as coffee, <i>Gardenia</i> sp., papaya, chilli pepper, sweet pepper, potato, tobacco, <i>Vigna</i> sp., green bean, strawberry, eggplant, watermelon and other Cucurbitaceae (EPPO, 2001; Azidah, 2011; Moritz et al., 2013; for an extensive list see Sartiami &amp; Mound, 2013). In Europe it has been found on ornamentals in greenhouses: <i>Citrus</i>, <i>Dipladenia</i> (synonym of <i>Mandevilla</i>), <i>Ficus benjamina</i>, <i>Gardenia</i>, <i>Gerbera</i> and <i>Schefflera</i> (Lacasa &amp; al., 2019; observations in Dutch greenhouses).</p>

5	<p>Does the organism cause any kind of plant damage in the current area of distribution and/or does the consignment demonstrate damage suspected to have been caused by this organism?  <i>Yes/no + plant species on which damage has been reported + short description of symptoms.</i>  <i>Please indicate also when the organism is otherwise harmful (e.g. predator, human/veterinary pathogen vector, etc.).</i></p>	<p>Direct damage is caused by feeding and breeding on the young leaves and flowers; infested leaves are lightly mottled and streaked (Moritz et al., 2013). Damage has been reported in several vegetable crops, such as chili pepper, sweet pepper, potato, eggplant, green bean, shallots and strawberry in Indonesia (Murai &amp; al., 2010; Vos &amp; Frinking, 1998), in potted plants such as <i>Gardenia</i> in Greece and Spain (), and <i>Dipladenia</i> (synonym of <i>Mandevilla</i>) in France and Spain (Mound &amp; Collins, 2000; EPPO, 2001; Lacasa et al., 2019; Lemmet, 2019).</p> <p>In Indonesia <i>T. parvispinus</i> is one of the most important economic pests in chilli pepper (<i>Capsicum</i>) (Vos &amp; Frinking, 1998) and has replaced <i>Thrips palmi</i> as the key thrips in vegetables (Murai et al., 2010). In Malaysia, feeding damage on papaya is associated with secondary attacks by the saprophytic fungus <i>Cladosporium oxysporum</i>, causing bunchy and malformed top of papaya (Lim, 1989). In Hawaii, scarring of fruits and foliage of papaya leads to severe economic damage (Sugano et al., 2013).</p> <p>In the Netherlands, little damage has thus far been observed on ornamental evergreen plants. The species has been found on <i>Ficus</i> plants at two glasshouse production sites and at one of these also on <i>Gerbera</i>. The species was also found at a third production site on <i>Schefflera</i>. Some damage was observed on <i>Ficus</i> plants.</p>
6	<p>Assess the probability of establishment in the Netherlands (NL) (i.e. the suitability of the environment for establishment).</p> <ol style="list-style-type: none"> <li>In greenhouses (low, medium, high)</li> <li>Outdoors (low, medium, high)</li> <li>Otherwise (e.g. storage facilities, human environment)</li> </ol>	<ol style="list-style-type: none"> <li>High in greenhouses; it is a polyphagous pest, which is able to reproduce in greenhouses (as observed).</li> <li>Low outdoors; present in tropical climates with warm to hot temperatures, present in lowlands as well as highlands in Indonesia (above 1200 m), most probably it will not survive a winter period outdoors.</li> <li>Not relevant.</li> </ol>
7	<p>Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).</p>	<p>High – similar in feeding biology to <i>Thrips tabaci</i> and in abiotic and biotic requirements to <i>Thrips palmi</i>; it will probably be able to survive indoors in protected crops throughout the EU and possibly outdoors in some parts of Southern Europe. EFSA_Panel_on_Plant_Health et al. (2019) concluded for <i>Thrips palmi</i> that “only a small area of the EU provides climatic conditions where establishment may be possible outdoors”. This may also be the case for <i>T. parvispinus</i>.</p>
8	<p>What are the possible pathways that can contribute to spread of the organism after introduction? How rapid is the organism expected to spread (by natural dispersal and human activity)?</p>	<p>Thysanoptera, including <i>Thrips parvispinus</i>, can especially be spread by trade/movement of infested plants (see Question 3).</p> <p>No data are known about its ability to spread by natural dispersal (by flight, wind), but most likely this will be very similar to other thrips pests already present (i.e. they may disperse by wind over several hundreds of metres when temperatures are high; the probability of natural spread between glasshouses may be low especially in cooler areas and during cooler periods).</p>

9	Provide an assessment of the type and amount of direct and indirect damage (e.g. lower quality, lower production, export restrictions, threat to biodiversity, etc.) likely to occur if the organism would become established in NL and the EU, respectively?	Feeding damage is expected to occur in several ornamentals and vegetables as described under Question 5. The potential economic impact is, however, difficult to assess. Significant economic impact has been reported in chilli pepper and papaya in tropical areas (see Question 5) but it is uncertain how much damage can be expected in greenhouse and field crops in Europe where climatic conditions are different. In Spain, serious damage has been observed on greenhouse grown plants of <i>Dipladenia</i> , <i>Gardenia</i> and <i>Citrus</i> . Control with a combination of chemicals was possible, but did not result in elimination (Lacasa & al., 2019). In the past, it has been concluded “that the pest <i>Thrips parvispinus</i> should not be considered as a significant threat for the EPPO <sup>1</sup> region” (EPPO, 2001), but climate change and/or changes in agricultural practices (e.g. use of more integrated control systems instead of broad spectrum insecticides) may increase the potential impact of the pest for the EU. In the Netherlands, thus far little damage has been observed on ornamental evergreen plants but it is unknown how long the pest had already been present in the glasshouses and if the pest could build up larger populations despite crop protection measures that are taken against other thrips species present in Dutch glasshouses. Establishment may lead to export restrictions. The species is for example not known to be present in Japan and the Americas.
10	Has the organism been detected on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables)? <i>If “no”, go to question 12</i>	No
11	If the organism has been found on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables), what is the probability of introduction (entry + establishment)? <i>Only to be answered in case of an interception or a find.</i>	
12	Additional remarks	
13	References	Azidah AA 2011. Thripidae (Thysanoptera) species collected from common plants and crops in Peninsular Malaysia. <i>Scientific Research and Essays</i> 6(24): 5107-5113 Bournier JP 2000. Les Thysanoptères de l’île de la Réunion: Terebrantia. <i>Bulletin de la Société entomologique de France</i> 105: 65–108. Collins DW 2010. Thysanoptera of Great Britain: A revised and updated checklist. <i>Zootaxa</i> 2412(2412):21-41. DOI: 10.11646/zootaxa.2412.1.2 EFSA 2019. Emerging risks exchange network. Minutes of the 21st meeting, 10–11 April 2019,

<sup>1</sup> EPPO: European and Mediterranean Plant Protection Organisation, [www.eppo.int](http://www.eppo.int)

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14	<b>Conclusions</b>	<p>This Quicksan was prompted by the finding of <i>Thrips parvispinus</i> in a glasshouse in the Netherlands. It is an Asian species that may already be present in the EU. The species can probably establish in greenhouses in the EU and possibly outdoors in parts of southern EU member states. The species is known as a pest of various crops in tropical regions. In the past, <i>Thrips parvispinus</i> has not been considered a significant threat for Europe but changes in agricultural practices and climate change may increase the potential impact of the pest. The potential impact for the EU is uncertain.</p>
15	<b>Follow-up measures</b>	<p>Communication to growers, including advise to growers of infested greenhouses to take eradication measures.</p>