



Netherlands Food and Consumer
Product Safety Authority
Ministry of Agriculture,
Nature and Food Quality

Quick scan for *Phenacoccus solenopsis*

National Plant Protection Organization, the Netherlands

Quick scan number: QS2022ENT004

Quick scan date: 24 October 2022

No.	Question	Quick scan answer for <i>Phenacoccus solenopsis</i>
1.	What is the scientific name (if possible up to species level + author, also include (sub)family and order) and English/common name of the organism? <i>Add picture of organism/damage if available and publication allowed.</i>	<i>Phenacoccus solenopsis</i> Tinsley (Hemiptera: Pseudococcidae), the cotton mealybug.
2.	What prompted this quick scan? <i>Organism detected in produce for import, export, in cultivation, nature, mentioned in publications, e.g. EPPO alert list, etc.</i>	The organism was intercepted on a consignment of <i>Ocimum basilicum</i> leaves imported from Israel. In the European Union (EU), the organism is a regulated pest on plants for planting of <i>Nerium oleander</i> from Turkey (Commission implementing regulation (EU) 2022/490) but is not listed as an EU quarantine pest in Regulation (EU) 2019/2072.
3.	What is the risk assessment area?	The risk assessment area is the territory of the European Union (EU 27).
4.	What is the current area of distribution?	The organism occurs in North, Central and South America as well as the Caribbean, Africa, Asia, Oceania and several countries in Europe (Cyprus, France, Greece (also Crete), Italy (also Sicily), Turkey) (EPPO, 2022).
5.	What are the host plants?	<i>P. solenopsis</i> is polyphagous and can attack around 300 plant species, among which many cultivated species, covering 65 families. See Appendix A in the EFSA Pest Categorization for a complete list (EFSA Panel on Plant Health et al., 2021).

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6.	<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>Yes, large infestations of <i>P. solenopsis</i> disrupt sap flow which weakens plants and can cause chlorosis, defoliation, dieback and death. Plants are also covered by sooty molds growing on the excreted honeydew (EFSA Panel on Plant Health et al., 2021). The species has become a serious pest in several countries, such as in Israel and Egypt in cotton plantations and protected crops of tomato (<i>Solanum lycopersicum</i>) and bell pepper (<i>Capsicum annuum</i>) (Ricupero, Biondi, Russo, Zappalà, & Mazzeo, 2021).</p>
7.	<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"> In greenhouses Outdoors Otherwise (e.g. storage facilities, human environment) 	<p>Establishment in greenhouses in the Netherlands is likely. Climatic conditions outdoors in NL are less suitable for the species and <i>P. solenopsis</i> seems unlikely to survive outdoors year round. <i>P. solenopsis</i> is most common in tropical and subtropical regions and cannot survive freezing temperatures. However, there have been reports of the species surviving colder environments below-ground in ants nests protected from freezing temperatures. Overwintering in NL may also be possible if the mealybug is associated with underground plant parts such as roots, tubers or bulbs. It could be sufficiently protected from freezing temperatures underground and, in the case of tubers and bulbs, it could survive adverse climatic conditions in storage.</p>
8.	<p>Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).</p>	<p><i>P. solenopsis</i> is already present in the EU (reported from Cyprus, Italy, France and Greece) and climatic conditions in southern Europe are suitable for establishment of the species. The climate in more northern areas is less suitable because the species cannot withstand freezing temperatures. It may, however, overwinter in greenhouses or underground protected from freezing temperatures (see question 7). <i>P. solenopsis</i> is a highly polyphagous species and host plants are commonly present in the EU.</p>
9.	<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><i>P. solenopsis</i> can be spread by movement of infested plants for planting and plant parts such as fruit and flowers but also by machinery. Transfer of the species from fresh produce to a suitable habitat for establishment seems, however, unlikely. Natural spread by crawling of first instars and by wind will be locally and relatively slow (EFSA Panel on Plant Health et al., 2021).</p>
10.	<p>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?</p>	<p>In NL, damage may especially occur in vegetable crops and ornamentals grown in greenhouses. As described in question 6, damage to these crops can result in severe yield losses.</p> <p>The species is already present in other EU member states. High impacts on ornamental species has been reported in private gardens in Cyprus (EFSA Plant Health Panel et al., 2021). In 2020, <i>P. solenopsis</i> was recorded as damaging tomato production in Sicilia (Italy) (EPPO, 2022).</p>
11.	<p>Has the organism been detected on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables)?</p>	<p>Yes, <i>P. solenopsis</i> was found in a consignment of fresh <i>Ocimum basilicum</i> leaves.</p>

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	<i>If "no", go to question 12</i>	
12.	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>	The probability of introduction through import of <i>Ocimum</i> leaves is assessed to be low because of the low probability of transfer. The species' active dispersal capabilities are limited and <i>Ocimum</i> leaves have a short shelf life.
13.	Additional remarks	<ul style="list-style-type: none"> • In the EU, <i>P. solenopsis</i> is known to be present in Cyprus, France, Greece (Crete) and Italy. In 2010 Cyprus took official measures to contain the pest (EPPO, 2011). No information was found whether Cyprus still takes containment measures. As far as known, the other three member states did not take official measures against the pest. • The effect of a natural enemy, a parasitic wasp (<i>Aenasius arizonensis</i>), on populations of <i>P. solenopsis</i> has resulted in declines of the pest's impact in Israel (Spodek et al., 2018). It is uncertain whether any enemies of the mealybug are already present in Europe (EFSA Panel on Plant Health et al., 2021).
14.	References	<p>EFSA Panel on Plant Health, Bragard, C., Di Serio, F., Gonthier, P., Jaques Miret, J. A., Justesen, A. F., . . . MacLeod, A. (2021). Pest categorisation of <i>Phenacoccus solenopsis</i>. <i>EFSA Journal</i>, 19(8), e06801. doi: https://doi.org/10.2903/j.efsa.2021.6801</p> <p>EPPO (2011) New pest records in EPPO member countries. EPPO Reporting service 2011/082.</p> <p>EPPO. (2022). <i>Phenacoccus solenopsis</i> EPPO Global Database (available online). Retrieved from https://gd.eppo.int/taxon/PHENSO</p> <p>Ricupero, M., Biondi, A., Russo, A., Zappalà, L., & Mazzeo, G. (2021). The Cotton Mealybug Is Spreading along the Mediterranean: First Pest Detection in Italian Tomatoes. <i>Insects</i>, 12(8), 675.</p>
15.	Conclusions	This quick scan was prompted by the interception of <i>P. solenopsis</i> on fresh leaves of <i>Ocimum</i> . In the EU, <i>P. solenopsis</i> is known to be present in Cyprus, France, Greece (Crete) and Italy. The species is highly polyphagous and can cause severe damage to its host plants. The species is present and not under official control in the EU but it is regulated on plants for planting of <i>Nerium oleander</i> from Turkey. The probability of introduction through fresh leaves of <i>Ocimum</i> is assessed to be low.
16.	Follow-up measures	None