



Netherlands Food and Consumer
Product Safety Authority
Ministry of Economic Affairs

National Plant Protection Organization, the Netherlands

Quick scan number: QS. Ent. 2015.08

Quick scan date: 14 December 2015		
1	<p>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></p>	 <p><i>Contarinia</i> cf. <i>pseudotsugae</i> Condrashoff (Diptera; Cecidomyiidae) Douglas-fir needle midge (© NVWA)</p>
	<p>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></p>	<p>The organism was detected during a survey on <i>Mycosphaerella</i> (fungus) in <i>Pseudotsuga</i> (Douglas fir). Note that the Douglas-fir needle midge is a species-complex consisting of three species. At the moment it is unknown how many, and which species we are dealing with in the Netherlands.</p>
3	<p>What is the current area of distribution?</p>	<p>United States and Canada (Gagné & Jaschhof, 2014)</p>
4	<p>What are the host plants?</p>	<p><i>Pseudotsuga menziesii</i>, and possibly other species of this genus.</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>In several states of the USA (e.g. Oregon and Washington) and in British Columbia (Canada) economic damage occurs in Douglas-fir plantations (Douglas-fir is used as Christmas tree in North America); entire crops can be ruined (Bulaon, 2010). In British Columbia, severe infestations are principally caused by <i>C. pseudotsugae</i> (Condrashoff, 1962).</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"> In greenhouses (low, medium, high) Outdoors (low, medium, high) Otherwise (e.g. storage facilities, human environment) 	<p>b. High: the current infested sample was obtained from infested trees close too or inside a National Park. The gall midge species was later found in natural stands at several other locations in the Netherlands. The host species, Douglas-fir, is a common tree species in Dutch forests.</p>
7	<p>Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).</p>	<p>The host tree occurs widespread in Europe and suitable climate conditions are probably available.</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>It is not known how the pest was introduced. Importation of the host tree from non-European countries has been prohibited for more than 20 years already.</p>
9	<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>The gall midge larvae infest current year's needles which results in premature drop. Almost 100% of the needles can be destroyed (Bulaon, 2010). In British Columbia, infestations which continue for a few successive years may result in severe defoliation of younger trees. Also, considerable twig die-back and stunted growth have been observed. Based on the damage reported from North America, the pest may especially affect young tree plantations and spontaneous regrowth in natural stands in Europe.</p>
10	<p>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></p>	<p>No</p>

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>	Not relevant
12	Additional remarks	The current identification is based on host plant, presence of larvae in needles and abundance of the species in North America. The identification is tentative because three different gall midge species are known to occur in Douglas needles. Condrashoff (1962) stated that gall shape and colour are distinct and characteristic for each species. Unfortunately, however, rather mixed patterns were encountered while trying to identify the larvae/galls (Condrashoff, 1961b, 1962). Rearing adults (Condrashoff, 1961a) may help to clarify the identify the species involved.
13	References	<ul style="list-style-type: none"> • Bulaon B (2010) Forest Health Protection and State Forestry Organizations. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5187407.pdf (accessed 04-12-2015) • Condrashoff SF (1961a) Three new species of <i>Contarinia</i> Rond. (Diptera: Cecidomyiidae) in Douglas-fir needles. The Canadian Entomologist, 93:123-130. • Condrashoff SF (1961b) Description and Morphology of the Immature Stages of Three Closely Related Species of <i>Contarinia</i> Rond. (Diptera: Cecidomyiidae) from Galls on Douglas-fir Needles. The Canadian Entomologist 93:833-851. • Condrashoff SF (1962) Bionomics of three closely related species of <i>Contarinia</i> Rond. (Diptera: Cecidomyiidae) from Douglas-fir needles. The Canadian Entomologist, 94:376-394. • Gagné R & Jaschhof M (2014) 2014_World_Cecidomyiidae_Catalog_3rd_Edition. www.ars.usda.gov/.../Gagne_2014_World_Cecidomyiidae_Catalog_3rd... (accessed 04-12-2015)
14	Conclusions	The present Quicksan was conducted after the finding of a for Europe new gall midge species, <i>Contarinia</i> cf. <i>pseudotsugae</i> on Douglas fir (<i>Pseudotsuga</i> sp.). As far as known, it is the first finding of the species outside North America. The identification of the species is tentative because three different gall midge species are known to occur on Douglas fir in Canada and the USA and adults need to be reared to identify the species (it might even be that more than one species has been introduced). Among the three species, <i>C. pseudotsugae</i> is the economically most important one in North America. It can cause severe defoliation, twig die-back and stunted growth of especially younger trees. Findings

		<p>at four locations in the Netherlands in natural stands indicate that the pest is established and has been present for several years already. Its impact in these natural stands is unknown. The species may affect spontaneous regrowth in natural stands and may especially pose a risk for young tree nurseries. It is unknown how the pest was introduced. Import of plants of <i>Pseudotsuga</i> from non-European countries has been prohibited in the EU for more than 20 years already.</p>
15	Follow-up measures	Communication