



Netherlands Food and Consumer  
Product Safety Authority  
Ministry of Economic Affairs

National Plant Protection Organization, the Netherlands

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<b>Quick scan date:</b> 17 November 2016		
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>	<b><i>Rotylenchus buxophilus</i></b> Golden, 1956.  Phylum: Nematoda Rudolphi, 1808 Order: Tylenchida Thorne, 1949 Family: Hoplolaimidae Filipjev, 1934 Genus: <i>Rotylenchus</i> Filipjev, 1936 Species: <i>R. buxophilus</i> Golden, 1956.
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>	Recently <i>Rotylenchus buxophilus</i> was discussed at the EPPO panel on nematodes (September 7-9, 2016, Vienna), because of noticed increasing problems with this nematode on English boxwood ( <i>Buxus sempervirens</i> ) in Norway. The plant material, these nematodes were found on, originated from the Netherlands. In the Netherlands, inspectors mentioned problems with bad growth of boxwood plants.
3	What is the current area of distribution?	<i>Rotylenchus buxophilus</i> was described from the USA. Additionally, it was found widely distributed particularly in the Northern temperate zone (Europe, Russia, North America). It has also been reported from Turkey, Iran, India and Pakistan (Castillo et al., 1993; Castillo & Vovlas, 2005).

4	What are the host plants?	<p>The reported list of host plants is very long. A selection of suitable hosts is provided herein (Castillo et al., 1993; Castillo &amp; Vovlas, 2005):</p> <p>Main host:</p> <ul style="list-style-type: none"> <li>-<i>Buxus sempervirens</i> (buxus)</li> </ul> <p>Other hosts:</p> <ul style="list-style-type: none"> <li>-<i>Phaseolus lunatus</i> (Lima beans),</li> <li>-<i>Secale cereale</i> (rye),</li> <li>-<i>Fragaria</i> x <i>Ananassa</i> (strawberry),</li> <li>-<i>Lycopersicon esculentum</i> (tomato),</li> <li>-<i>Taxus canadensis</i> (yew),</li> <li>-<i>Cupressus sempervirens</i> (Italian cipres),</li> <li>-<i>Phaseolus vulgaris</i> (bean),</li> <li>-<i>Hydrangea hortensia</i> (Hortensia),</li> <li>-<i>Camellia japonica</i> (camellia),</li> <li>-<i>Vaccinium myrtillus</i> (bilberries),</li> <li>-<i>Saccharum officinarum</i> (sugarcane),</li> <li>-<i>Sambucus nigra</i> (elder),</li> <li>-<i>Syringa vulgaris</i> (syring),</li>   <li>-<i>Taraxacum officinale</i> (horseflower),</li> <li>-<i>Fagus sylvatica</i> (beech),</li> <li>-<i>Cedrus libani</i> (Libanon ceder),</li> <li>-<i>Magnolia</i> sp. (magnolia),</li> <li>-<i>Erica arborea</i> (tree heath),</li> <li>-<i>Vitis vinifera</i> (common grape vine),</li> <li>-<i>Olea europaea</i> (olive),</li> <li>-<i>Ficus carica</i> (fig).</li> </ul>
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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>Yes, the pathogenity of <i>R. buxophilus</i> has been proven for English boxwood. The symptoms expressed on boxwood are (strong) growth reduction and the presence of small root lesions (Siddiqi, 1974). In Norway, severe problems with the re-establishment of English boxwood in special ornamental gardens was the reason for mentioning it in the EPPO meeting.</p>
6	<p>Assess the probability of establishment in the Netherlands (NL) (i.e. the suitability of the environment for establishment).</p> <ul style="list-style-type: none"> <li>a. In greenhouses (low, medium, high)</li> <li>b. Outdoors (low, medium, high)</li> <li>c. Otherwise (e.g. storage facilities, human environment)</li> </ul>	<ul style="list-style-type: none"> <li>a. Low.</li> <li>b. High. Probably already locally present in the Netherlands (Bongers, 1988).</li> </ul>
7	<p>Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).</p>	<p>Is already present. It has been o.a. reported from Germany and France, both found in more or less "natural" habitats (not found in cultivated soil) (Sturhan, 2014). In the past this species has been found also in the Netherlands in Amsterdam, Bergen, Bloemendaal, Hazerswoudedorp, Lienden and Waddinxveen (Bongers, 1988). These early findings however need to be confirmed, to be certain of a correct identification.</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>The natural dispersal capacity of the organism is very low. However, <i>R. buxophilus</i> is spread easily by transport of infested boxwood plants or soil.</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>In relatively low numbers (from about 250 individuals per boxwood plant), infested plants start to express already growth reduction symptoms (Siddiqi, 1974). This retarded growth can have a negative effect on the market and on the export of English boxwood plants.</p> <p>Any direct interaction between the presence of the root lesions induced by <i>Rotylenchus buxophilus</i> and, in particular, soil fungi cannot be excluded at present. Such interactions have been observed for other root lesion inducing nematodes, for example <i>Pratylenchus penetrans</i> and <i>Fusarium</i>.</p>

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	<p>Bongers, T. (1988). <i>Nematoden van Nederland</i>. KNNV, Utrecht, The Netherlands. 408 pp.</p> <p>Castillo, P., Vovlas, N., Gómez-Barcina, A. &amp; F. Lamberti (1993). The plant parasitic nematode <i>Rotylenchus</i> (a monograph). <i>Nematologia Mediterranea</i> 21 (supplement). 200 pp.</p> <p>Castillo, P. &amp; N. Vovlas (2005). <i>Bionomics and identification of the genus Rotylenchus (Nematoda: Hoplolaimidae)</i>. Nematology monographs and perspectives no. 3, Brill Leiden, The Netherlands. 377 pp.</p> <p>Siddiqi, M.R. (1974). <i>Rotylenchus buxophilus</i>. C.I.H. Descriptions of plant-parasitic nematodes, set 4, no. 55.</p> <p>Sturhan, D. (2014). Plant-parasitic nematodes in Germany-an annotated checklist. <i>Soil Organisms</i> 86 (3) 177-198.</p>
14	<b>Conclusions</b>	The nematode species <i>Rotylenchus buxophilus</i> is particularly known as a plant parasite on English boxwood. It causes growth reduction and root lesions on English boxwood. It is present in Europe.
15	<b>Follow-up measures</b>	Communication