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

National Plant Protection Organization, the Netherlands

Quick scan number: QS.nem.2019.04

	Quick scan date: January 2020	
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? *Add picture of organism/damage if available and publication allowed*.	***Litylenchus crenatae*** Kanzaki, Ichihara, Ekino & Masuya, 2019 Order: Tylenchida Thorne, 1949 Infraorder: Anguinata Siddiqi, 2000 Superfamily: Anguinoidae Nicoll, 1935 (1926) Family: Anguinidae Nicoll, 1935 (1926) Subfamily: Anguininae Nicoll, 1935 (1926) Genus: *Litylenchus* Zhao, Davies, Alexander & Riley, 2011
2	What prompted this quick scan? *Organism detected in produce for import, export, in cultivation, nature, mentioned in publications, e.g. EPPO alert list, etc.*	This recently described plant-parasitic nematode induces typical leaf galls on the leaves of several broad-leaved tree species in Japan. It was recently added to the EPPO alert list (EPPO, 2019), as this nematode shows symptoms comparable to "Beech leaf disease" or BLD in the USA & Canada (EPPO, 2018). In the USA, BLD symptoms have been observed on native beech trees but also on European beech (*Fagus sylvatica*). However, there is so far no proven causal relationship of this new nematode to BLD. It is unknown if this nematode is present in Europe and/or if BLD is present in Europe.
3	What is the current area of distribution?	Japan (Hokkaido & Honshu island).

4	What are the host plants?	*Fagus crenata* Blume = Type host. Leaf gall symptoms have also been observed on (without nematode ID check): *Fagus sylvatica* L. *Fagus sylvatica* f. *purpurea* (Aiton) C.K. Schneid. *Alnus hirsuta* Turcz. *Alnus maximowiczii* Call. *Ostrya japonica* Sarg.
5	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? *Yes/no + plant species on which damage has been reported + short description of symptoms.* *Please indicate also when the organism is otherwise harmful (e.g. predator, human/veterinary pathogen vector, etc.).*	The recently published species description does not report any damage to broad-leaved tree species in Japan, except for the presence of induced leaf galls. Nematodes have been isolated from mesophyll tissue from symptomatic leaves of *Fagus crenata* between late spring and early autumn. BLD symptoms have been observed since 2012 in the USA and later in Canada. Dying of young trees with BLD symptoms has been observed. Also the BLD symptoms spread relatively fast in American forests.
6	Assess the probability of establishment in the Netherlands (NL) (i.e. the suitability of the environment for establishment). a. In greenhouses (low, medium, high) b. Outdoors (low, medium, high) c. Otherwise (e.g. storage facilities, human environment)	A: not applicable. B: unknown. Leaf gall symptoms has been observed in Japan also on European beech (*Fagus sylvatica*). BLD symptoms have also been observed in the USA on European beech. C: not applicable.
7	Assess the probability of establishment in the EU (i.e. the suitability of the environment for establishment).	See 6b.
8	What are the possible pathways that can contribute	Until now, *L. crenatae* has only been confirmed to be present within leaf tissues (mesophyll) of

	to spread of the organism after introduction? How rapid is the organism expected to spread (by natural dispersal and human activity)?	infected *F. crenata* in Japan. If this nematode is the main cause of BLD, plants for planting and cut foliage could be potential pathways for long distance transport. However, how the nematode spreads among forest trees is currently unknown. In particular, it is not known whether the nematode can survive in other plant parts or in the soil during winter after beech leaves have fallen (EPPO, 2019). It is unknown how fast *Litylenchus crenatae* is able to spread. BLD is known to spread fast (EPPO, 2018).
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?	*Fagus* spp. are widely planted in the EPPO region for forestry and amenity purposes. In particular, *F. sylvatica* is an important deciduous forest tree in Western and Central Europe (e.g. used for wood production). Many aspects remain to be clarified, in particular, it is still unclear whether *L. crenatae* is the sole causal agent of BLD or if the disease is associated with a complex of pathogens (e.g. fungi, bacteria, viruses or phytoplasmas). If *L. crenatae* is the main causal agent of BLD, its biology and epidemiology also need to be further studied to better assess its potential risk (EPPO, 2019).
10	Has the organism been detected on/in a product other than plants for planting (e.g. cut flowers, fruit, vegetables)? *If "no", go to question 12*	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)? *Only to be answered in case of an interception or a find.*	no
12	Additional remarks	Currently, the probability of entry of the nematode species seems low because of existing legislation. Deciduous trees and shrubs, intended for planting, other than seeds and plants in tissue culture may only be imported from most third countries including Japan, USA and Canada if they are dormant and free from leaves (Commission implementing regulation (EU) 2019/2072, Annex VII, point 11). In addition, import of plants for planting, other than seeds, in vitro material and naturally or artificially dwarfed woody plants for planting, originating from all third countries and belonging to the genus Fagus is currently prohibited (Commission implementing regulation (EU) 2018/2019, Annex

		I, point 1).
13	References	Kanzaki, N., Ichihara, Y., Aikawa, T., Ekino, T. & H. Masuya (2019). *Litylenchus crenatae* n. sp. (Tylenchomorpha: Anguinidae), a leaf gall nematode parasitising *Fagus crenata* Blume. *Nematology* 21: 5-22. EPPO (2018). Beech leaf disease: a disease of unknown aetiology emerging in North America. *EPPO Reporting Service* 9: 178. EPPO (2019). Beech leaf disease and its potential causal agent (*Litylenchus crenatae*): addition to the EPPO Alert List. *EPPO Reporting Service* 4: 83.
14	**Conclusions**	This Quicksan was triggered by the description of a new nematode species, *Litylenchus crenatae*, that has been suggested as causal agent (or one of the causal agents) of a relatively new disease of *Fagus* (beach) in North America: beach leaf disease (BLD). If the nematode species is involved in BLD it is considered a serious threat for *Fagus* spp. in the EU. BLD nor the nematode is known to be present in the EU.
15	**Follow-up measures**	The species will be considered for inclusion in the official survey program 2020.