

Categorization of forest quarantine pests for Slovenia

BACKGROUND

Slovenia's forests cover more than 1,2 million hectares, making up 58% of the country's total land area. The spread of harmful non-native organisms has become a significant global issue, largely driven by increasing international trade and mobility. Additionally, climate change and extreme weather events are negatively affecting ecosystem stability, creating more favorable conditions for invasive species that can damage biodiversity, harm the economy, and indirectly threaten the health of our forests.

As a result, it is necessary to effectively plan national surveys to determine quarantine species presence, risk activities and areas for the possibility of introduction or spread across the territory of Slovenia. For the efficient and uniform implementation of inspections in the EU, the European Food Safety Agency has developed the RiPEST program (risk-based pest survey tool), which enables the implementation of statistically reliable risk-based surveys, however specific input data is required, which is currently still not known or available in Slovenia. As a part of a CRP project "Quarantine species in Slovenian forests" necessary data will be gathered to improve the established survey system. It is important to understand which quarantine species can become a threat to local ecosystems and to develop an established country specific list of these species. So that in case of their occurrence, appropriate phytosanitary measures can be implemented. This poster shows how a specific list of species was prepared and provides insight into further works of the project. Further aim is to select a model organism from this list and perform a climate study, pest risk assessment, test trap effectiveness and more in order to improve the use of RiPEST and the efficiency of national surveys.

LIST OF SPECIES

INITIAL SELECTION OF SPECIES is based on the list of organisms provided in the legislation:

Commission Implementing Regulation 2019/2072 (version 26. 1. 2025)

- ANNEX II (List of Union quarantine pests and their respective codes assigned by EPPO)
 - Part A : Pests not known to occur in the Union territory
 - Part B: Pests known to occur in the Union territory

- ✓ Section 2 (Fungi and oomycetes)
- ✓ Section 3 (Insects and mites)

Starting number of species : 281
 • Fungi and oomycetes: 38
 • Insects and mites: 243

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ESTABLISHMENT OF THE QUARANTINE SPECIES

- Is the pest able to establish in the Slovenian forests?
- Are there available hosts?
- Is the host also present in the urban environment?

- **71 native tree species** (61 broadleaf and 10 coniferous)
- **4 most common non-native tree species:** *Robinia pseudoacacia*, *Pinus strobus*, *Pseudotsuga menziesii*, *Quercus rubra*
- **Most common tree species in urban areas**

Number of species: 41
 • Fungi and oomycetes: 10
 • Insects and mites: 31

Table 1: percentage of urban tree species (genus) in seven biggest municipalities in the country and one arboretum

Genus	Percentage (%)
Acer	37
Tilia	13
Picea	10
Betula	9
Prunus	6
Platanus	6
Aesculus	5
Carpinus	5
Pinus	4
Fraxinus	4

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IMPACT OF THE SPECIES ON FOREST PLANT HEALTH

- Would the introduction of the pest have an economic or environmental impact on native tree species?
- Is the organism already considered an important pest of a native forest tree species?

Categories of impact of quarantine species

- **1 – no or very low recorded impact** (Exclusion of organisms that, although they have forest trees among their hosts, are primarily pests of agricultural species.)
- **2 – moderate or high impact**

Number of species with a moderate or high impact on forest plant health: 27
 • Fungi and oomycetes: 8
 • Insects and mites: 19

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QUARANTINE SPECIES DISTRIBUTION

- Where is the pest already present?
- How far away is it from Slovenia?

Categories of presence of quarantine species

- **1 – Present in a neighboring country of Slovenia (Italy, Austria, Hungary, Croatia)**
- **2 – Present in Europe**
- **3 – Present in a country bordering Europe**
- **4 – Present elsewhere in the world**

Number of species present in Europe and in the border countries: 11
 • Fungi and oomycetes: 4
 • Insects and mites: 7

Global trade

- **Imports of relevant goods into Slovenia (EUROSTAT; 2014-2023)**
EU trade since 1988 by HS2-4-6 and CN8

- **Interceptions (TRACES; 2021-2025)**
- Using data from shipments that have been rejected due to occurrence of quarantine species in combination with relevant CN code.

Table 2: CN codes and country combinations that showed the highest importance for imports into Slovenia.

CN code	EPPO Host commodities	Country
0602, 0604	plants for planting, cut flowers and branches	China, Japan
4403	non-squared wood	USA
4415	packaging material	Ukraine

Final selection of important forest quarantine species for Slovenia

Table 3: List of species that have available hosts in native forest tree species and a moderate or high impact on forest plant health

EPPO code	Species	Kingdom	Quarantine species distribution	Hosts	Country of import with CN CODE (0602,0604)	Country of import with CN CODE (4403)	Country of import with CN CODE (4415)
PHYTRA	<i>Phytophthora ramorum</i>	Fungi	1 – Neighboring country to Slovenia	Deciduous tree species	Japan		
1SCOLS	<i>Scolytinae spp. (non-european)</i>	Insects	1 – Neighboring country to Slovenia	Deciduous and conifer tree species	Japan and China	USA	
ANOLCN	<i>Anoplophora chinensis</i>	Insects	1 – Neighboring country to Slovenia	Deciduous tree species	Japan and China		
ANOLGL	<i>Anoplophora glabripennis</i>	Insects	1 – Neighboring country to Slovenia	Deciduous tree species	Japan and China	USA	
FUSAEW	<i>Fusarium euwallaceae</i>	Fungi	2 – Europe	Deciduous tree species	Japan and China	USA	
GIBBCI	<i>Fusarium circinatum</i>	Fungi	2 – Europe	<i>Pinus</i> spp.	Japan		
AGRLPL	<i>Agrilus planipennis</i>	Insects	2 – Europe	<i>Fraxinus</i> spp.	Japan and China	USA	Ukraine
XYLBFO	<i>Euwallacea fornicatus sensu lato</i>	Insects	2 – Europe	Deciduous tree species	Japan and China	USA	
PHELSU	<i>Coniferporia sulphurascens</i>	Fungi	3 – Country bordering Europe	Conifer tree species	Japan and China	USA	
DENSDSI	<i>Dendrolimus sibiricus</i>	Insects	3 – Country bordering Europe	Conifer tree species	China		
POLGPR	<i>Polygraphus proximus</i>	Insects	3 – Country bordering Europe	Conifer tree species	Japan and China		

CONCLUSIONS

- ✓ Based on host availability, impacts of quarantine species on plant health and their distribution along with global trade a list of 11 species has been created. From this list species will be selected as a model organism in order to improve the national surveys.
- ✓ Categorization of quarantine species is so far mostly done on a European scale, but it is important to have a regularly updated country specific list for an effective early detection and understanding of potential dangers of non-native pests.
- ✓ The final selection of the highest-ranked forest quarantine species for Slovenia aligns with the EU priority list, including four species (*Anoplophora chinensis*, *Anoplophora glabripennis*, *Agrilus planipennis*, *Dendrolimus sibiricus*).

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