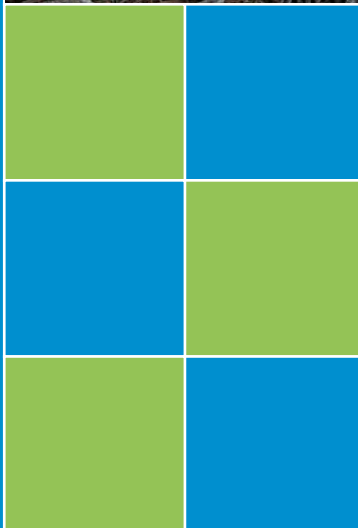




European  
Commission



DG Health and  
Food Safety

# Pine Wood Nematode Surveys in the EU

## ANNUAL REPORT 2016

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**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY  
Health and Food audits and analysis  
**Director**

**PINE WOOD NEMATODE SURVEYS IN THE EUROPEAN UNION**  
**ANNUAL REPORT 2016**

### *Executive summary*

*This report summarises the survey activities carried out in the European Union and Switzerland in order to determine if there is any evidence of the presence of Bursaphelenchus xylophilus, the pine wood nematode (PWN) in areas in which it is not known to occur.*

*Commission Implementing Decision 2012/535/EU of 26 September 2012 on emergency measures to prevent the spread within the Union of Bursaphelenchus xylophilus (the Decision) requires that Member States conduct annual surveys for PWN in areas in which it is not known to occur and in demarcated areas for the eradication or containment of PWN outbreaks. In addition, the Decision requires that Member States perform checks on susceptible material originating from demarcated areas and moving within the EU in order to verify compliance with requirements to prevent the spread of PWN.*

*In 2016, specific surveys were performed in all EU Member States and Switzerland in territories where PWN was not known to occur. These surveys were performed in forests with susceptible plants and/or in risk areas defined according to the identified pathways for PWN. In addition, surveys were also carried out in nurseries and wood processing industries in a number of Member States. In 2016, a total of 12,500 samples from plants and wood and 8,500 samples of vectors were collected across the EU territory and all tested negative for the presence of PWN. Based on these surveys, there was no evidence of the presence of PWN in territories outside the demarcated areas.*

*Intensive surveys were also carried out in the demarcated areas established to eradicate or contain PWN outbreaks. A total of 12,360 samples from susceptible plants and wood, and 4,300 samples of vectors were collected in the buffer zones of these demarcated areas and were analysed for the presence of PWN. Only in the demarcated area of As Neves (Galicia), infestation was found. One single infested tree was detected which triggered an adaptation of the Galician control measures implemented to eradicate PWN.*

*In addition to these surveys, Member States performed 9,000 checks confirming the absence of PWN in susceptible material moved from demarcated areas within the EU. Non-compliances were reported in relation to 5% of these checks, mainly due to the absence of or incorrect marking of wood packaging material.*

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## GLOSSARY

Abbreviation/term	Explanation/definition
BZ	The buffer zone (BZ) is the part of the demarcated area which surrounds the infested zone, as defined in Article 5(2) of Commission Implementing Decision 2012/535/EU.
DA	The demarcated area (DA) comprises both the infested and the buffer zone, as defined in Article 5 of Commission Implementing Decision 2015/535/EU.
<a href="#">ISPM No15</a>	International Standard on Phytosanitary Measures No 15, Regulation of wood packaging material in international trade, Food and Agriculture Organisation, Rome, April 2009
IZ	The Infested Zone (IZ) is the part of the demarcated area in which PWN was found to be present as defined in Article 5(2) of the Commission Implementing Decision 2012/535/EU.
MS	Member State of the European Union and Switzerland
PWN	Pine wood nematode, <i>Bursaphelenchus xylophilus</i> (Steiner et Buhrer) Nickle et al.
Susceptible material	Susceptible plants, wood and bark as defined in Article 1 of Commission Implementing Decision 2012/535/EU.
Susceptible plants	Plants (other than fruit and seeds) of <i>Abies</i> Mill., <i>Cedrus</i> Trew, <i>Larix</i> Mill., <i>Picea</i> A. Dietr., <i>Pinus</i> L., <i>Pseudotsuga</i> Carr. and <i>Tsuga</i> Carr. as defined by Article 1(a) of Commission Implementing Decision 2015/535/EU.
The Decision	Commission Implementing Decision 2012/535 of 26 September 2012 on emergency measures to prevent the spread within the Union of <i>Bursaphelenchus xylophilus</i> (Steiner et Buhrer) Nickle et al. (the pine wood nematode).
Vector	The insect vector of the pine wood nematode belonging to the genus <i>Monochamus</i> Megerle in Dejean, 1821, as defined in Article 1(e) of the Commission Implementing Decision 2012/535/EU. In continental Portugal and the Spanish territories along the border with Portugal, <i>Monochamus galloprovincialis</i> is the vector for the PWN.

## 1. INTRODUCTION

*Bursaphelenchus xylophilus*, the pine wood nematode (PWN), is a quarantine harmful organism in the European Union (EU) where its spread would cause significant damage to the pine forests and have serious economic impacts on EU export trade of coniferous wood. Following the first detection of PWN in the EU in 1999, the European Commission has adopted specific emergency control measures. These require all Member States to carry out annually surveys for the presence of PWN in territories where it is not known to occur.

This document provides an overview of the surveys carried out in 2016 by the EU Member States and Switzerland (MS)<sup>1</sup> and their results. It is based on survey plans and results reported by MS.

## 2. EU LEGISLATION AND GUIDELINES RELATED TO PWN SURVEYS

### 2.1. EU legislation

Requirements for annual PWN surveys are laid down in Commission Implementing Decision 2012/535/EU of 26 September 2012 on emergency measures to prevent the spread within the Union of *Bursaphelenchus xylophilus* (Steiner et Buhrer) Nickle et al. (the pine wood nematode) as amended (hereafter referred to as "the Decision")<sup>2</sup>.

Article 2 of the Decision requires that MS conduct annual surveys for PWN in areas in which PWN is not known to occur, to determine whether there is any evidence of the presence of PWN in their territory. Those surveys should consist of the collection and laboratory testing of samples of susceptible plants, susceptible wood and bark, and vectors.

Article 6 and point 6 of Annex I, and Article 7 and point 2 of Annex II to the Decision specify annual surveys to be carried out in demarcated areas established for the eradication or containment of PWN respectively.

Article 11(2) requires that MS carry out random checks on susceptible plants and susceptible wood and bark moved from demarcated areas situated outside their territory into areas in their territory other than demarcated areas.

Article 3 of the Decision requires that laboratory testing for the presence of PWN in samples taken in the context of the above mentioned activities are carried out according to the diagnostic protocol for PWN provided in the European Plant Protection Organisation standard PM7/4(2).

### 2.2. Guidelines

The "EU Pinewood nematode *Bursaphelenchus xylophilus* survey protocol" was established in 2009 by the Commission in consultation with MS, to provide guidance on how to carry out a detection survey to determine whether PWN is present in a MS.

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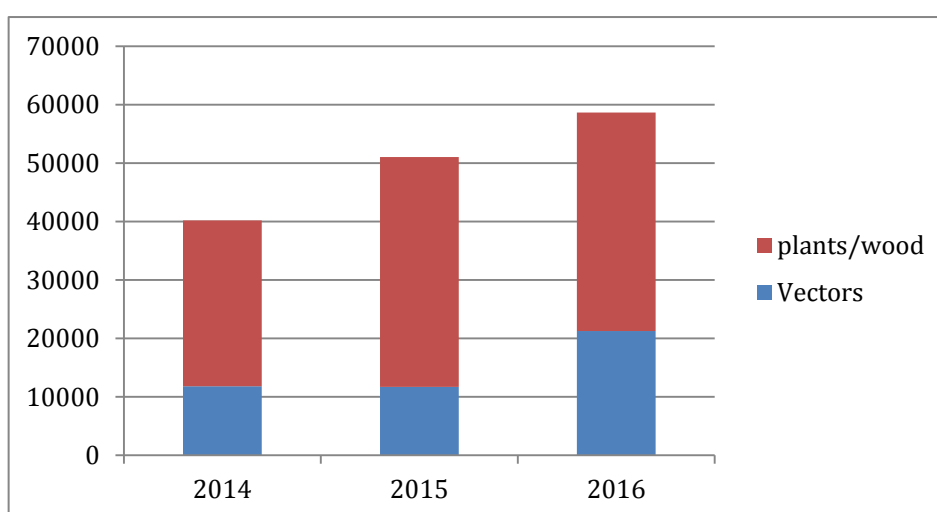
<sup>1</sup> Switzerland applies certain elements of the EU plant health regime and therefore carries out PWN surveys.

<sup>2</sup> [Link to Decision on EUR-LEX](#)

The EPPO standard PM 9/1(5) related to "*Bursaphelenchus xylophilus* and its vectors: procedure for official control" provides guidance on the surveillance for PWN and sampling collection in territories where PWN is not known to occur, with different strategies depending on whether wilt symptoms can be expected or not.

### 3. SURVEY RESULTS

In 2016, all MS reported that they had carried out surveys for the presence of PWN. The survey strategy and method implemented was developed by each MS, based mainly on the identified pathways, expected occurrence of pine wilt symptoms and presence of the vector on their territory. In total, in 2016, some 59,000 samples of wood and vectors were collected across the EU territory and analysed for the presence of PWN, which is significantly more than was done in the previous two years.



**Figure 1- Number of samples of wood and vectors collected and analysed in 2014-2016**

The following two sections describe separately the surveys and their results in areas outside and within demarcated areas. The latter are located in Portugal and Spain.

#### 3.1. Surveys in the EU territory outside the demarcated areas

##### Survey sites

Survey sites are selected by each MS. In 2016, surveys in the EU territory were performed by all MS in the context of general forest surveillance and/or in risk areas. The latter generally included areas with susceptible plants affected by fire or storm as well as areas surrounding points of entry, transport routes, storage places and/or processing industries where susceptible material at risk is handled. In Spain, whose territory surrounds the demarcated area of continental Portugal, the Spanish territory is surveyed based on a grid, the size of which varies depending on the proximity to the Portuguese border (from 2x2 km in the 20 km strip along the border to 8x8km in areas located more than 100 km from the Portuguese border).

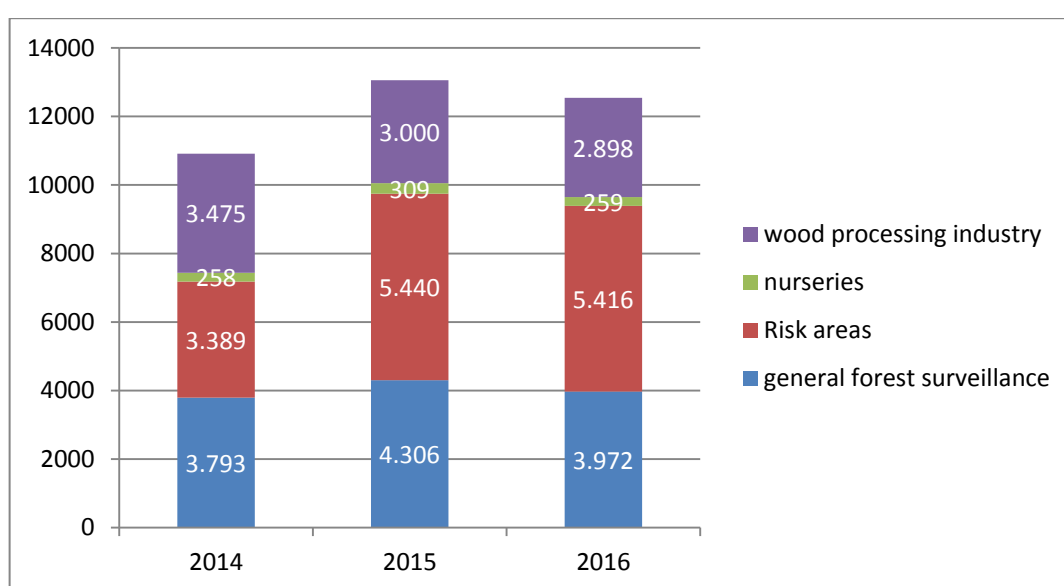
In addition, in a number of MS, surveys were also carried out at nurseries and wood processing industries.



### Surveys of susceptible plants/wood at selected sites

In most of the MS, surveys in the forest and risk areas consisted of the inspection of susceptible plants for the presence of pine wilt symptoms and the collection of wood samples was generally targeted at those plants. However in Spain, asymptomatic plants were also sampled when there were no symptomatic plants on the surveyed grid plots. In other MS where pine wilt symptoms are not expected to occur, sites were surveyed for the presence of susceptible material with signs of vectors' activity and wood samples taken from this material.

In 2016, some 9,400 samples taken from susceptible plants and wood were collected in forests and risk areas. Of these, more than 20 % were taken in the 20 km strip along the border with Portugal. In addition, 2,900 wood samples were collected in wood processing industries and 250 from susceptible plants in nurseries. Figure 2 shows the evolution in number of samples in the different types of sites surveyed in the period 2014-2016.



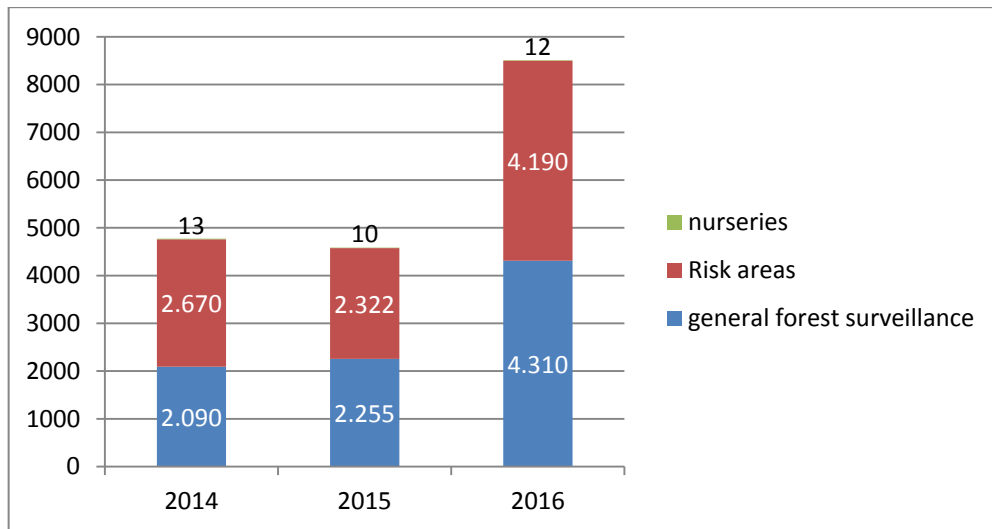
**Figure 2- Number of wood samples collected and analysed in 2014-2016**

The 12,500 samples collected from plants and wood in 2016 were analysed and found free from PWN.

### Survey of the vector at selected sites

In 2016, surveys of the vector were also conducted in all MS except two, essentially based on the use of traps in selected sites. MS reported a total of 2,800 traps placed and managed in 2016, which is 40% more than the traps used annually in the two previous years. Of the 2,800 traps used in 2016, 1,000 were placed across the Spanish territory outside demarcated areas.

Five MS (Cyprus, Ireland, Hungary, Luxemburg and Malta) reported that no vectors had been trapped in 2016. In the other MS that performed surveys of the vector, 92,000 vectors were trapped. In most MS, all vectors trapped were analysed for the presence of PWN. A total of 8,500 samples of one or more vectors were analysed for the presence of the PWN, which is twice as much as the annual number in the previous two years (see figure 3).



**Figure 3- Number of samples of vectors collected analysed in 2014-2016**

The 8,500 samples of vectors analysed in 2016 were found to be free from PWN.

### 3.2. Surveys in the demarcated areas

In 2016, there were five demarcated areas in the EU territory located in map 1:

- Two in Portugal (one in continental Portugal and one in the island of Madeira) where containment measures are implemented;
- Three of a limited size in Spain, located in three Autonomous Communities bordering Portugal, where eradication measures are implemented.



**Map 1- Demarcated areas for the containment/eradication of PWN outbreaks in the EU**

The following sections present the surveys carried out in 2016 in the buffer zones of these demarcated areas. This does not concern the demarcated area of Madeira Island, where the surrounding sea constitutes the buffer zone.

### *3.2.1. Demarcated area of Continental Portugal*

In continental Portugal, the demarcated area covers the whole territory, the buffer zone consisting of a 20 km strip along the border with Spain. This buffer zone comprises more than 2.3 million hectares including 94,000 hectares of pine forest.

In 2016, the annual survey of susceptible plants in the buffer zone consisted of the monitoring of the entire territory based on its division into squares of 1x1 km (100 hectares) with a view to identifying susceptible plants dead, in poor health or affected by fire or storm. Since 2016, the collection of samples to be tested for the presence of PWN has been targeted at these trees. The number of samples taken each year is determined according to a sampling scheme which is able to confirm with 99 % reliability that the level of presence of PWN in those plants is below 0.02 %, as required by the Decision. A method was developed by the competent authority to ensure a good distribution of the samples taken on the buffer zone territory. The survey of the vector was performed using 640 multi-funnel traps baited with pheromones specific to the vector. These were placed at locations considered attractive to the vector.

In 2016, some 7,800 samples from susceptible plants (up to five trees can be conglomerated in one sample) and 400 vectors trapped across the buffer zone were collected and analysed for the presence of PWN. All test results were negative.

### *3.2.2. Demarcated areas in Spain*

The buffer zone consists of a 20 km radius area around the infested point (one single infested tree) in two demarcated areas and a 14 km radius area around the infested zone (a plot of 150 hectares) in the third demarcated area.

In 2016, the annual surveys of susceptible plants in the buffer zones combined a grid-based approach, with the sampling of susceptible plants dead, in poor health or affected by fire or storm or, in their absence at grid points, healthy looking susceptible plants. In addition, susceptible plants dead, in poor health or affected by fire or storm identified in other parts of the buffer zone, were also sampled with a view to confirming with 99 % reliability that the level of presence of PWN in those susceptible plants is below 0,1%, as required by the Decision. In addition, surveys of the vector were performed in all buffer zones, using multi-funnel or cross van traps baited with pheromones specific to the vector. These were placed according to the above mentioned grid and/or at locations considered attractive to the vector.

In 2016, some 4,500 samples were collected on susceptible plants, 60 samples were taken of wood of domestic origin and, 20,400 vectors were trapped in the 950 traps placed during the flight season. All 4,560 samples collected from plants and wood and some 3,900 samples of vectors were analysed for the presence of PWN.

As a result of these intensive surveys, one susceptible plant was found infested in the demarcated area of As Neves (Galicia) which required adapting the eradication measures implemented there. In addition, six wood samples collected in one processing facility in another Autonomous Community, tested positive. The Spanish competent authorities stated that the wood came from a processing facility in the demarcated area of As Neves and that phytosanitary measures were taken at both facilities. All other samples tested negative.

#### **4. CHECKS OF SUSCEPTIBLE MATERIAL MOVING FROM DEMARCATED AREAS WITHIN THE EU**

In 2016, some 9,000 checks were performed by 24 MSs and Switzerland on consignments moved from Portugal and Spain within the EU in order to verify compliance of susceptible material originating in demarcated areas with requirements laid down in the Decision. These checks concerned mainly wood packaging material (96 %) and consignments of wood and bark. Consignments from Portugal represented 90% of these checks; and were mostly performed by Portugal before the consignments left their territory. More than 1,000 samples were taken in this context. All of them tested negative for the presence of PWN.

In these checks, less than 5% of non-compliance was reported. The absence of or incorrect marking of wood packaging material in accordance with the International Standard on Phytosanitary Measures (ISPM) n°15, represented 97 % of the cases of non-compliance. All the samples collected tested negative for the presence of PWN.

#### **5. CONCLUSIONS**

In 2016, specific surveys were performed in all MS, which concluded that there was no evidence of the presence of PWN in territories outside the existing demarcated areas where PWN is or has been known to occur. In addition, intensive surveys were performed in the buffer zones of all demarcated areas. Only in the demarcated area of As Neves (Galicia), infestation was found. One single infested tree was detected which triggered an adaptation of control measures implemented to eradicate PWN. Finally, checks performed by MS confirmed the absence of PWN in susceptible material moved from demarcated areas within the EU. Non-compliances were reported in relation to 5% of these checks, mainly due to the absence of or incorrect marking of wood packaging material.

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