



International Plant
Sentinel Network

Valná hromada UBZ International Plant Sentinel Network Projekt EUPHRESKO 26.1.2017, Praha

ÚKZÚZ

Ústřední kontrolní a zkušební ústav zemědělský



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ÚKZÚZ

- je zřízen Ministerstvem zemědělství ČR jako specializovaný orgán státní správy
- je organizační složkou státu
- je správním úřadem
- **NPPO České republiky**

Provádí:

správní řízení a vykonává jiné správní činnosti
odborné a zkušební úkony

kontrolní a dozorové činnosti v oblasti

- odrůdového zkušebnictví
- krmiv, agrochemie, půdy a výživy rostlin
- osiv a sadby pěstovaných rostlin, trvalých kultur (vinohradnictví a chmelařství),
- **ochrany proti škodlivým organismům a v oblasti přípravků na ochranu rostlin**



International Plant Sentinel Network –

projekt pro včasné varování před šířením škodlivých organismů a způsobenými škodami

Cílem je:

- vytvoření sít spolupracujících botanických zahrad, arboret a NPPO
- vytvořit systém včasného odhalení potenciálních hrozeb dopadů zavlečení ŠO do nepůvodních regionů



International Plant Sentinel Network jako systém včasného varování před možností šíření škodlivých organismů

EUPHRESKO Research Products (2013 – xx):

Mezinárodní síť a spolupráce

- Vytvořit síť vědeckých institucí (osob), které budou ochotni spolupracovat.
- Bilaterální a multilaterální spolupráce a výměna informací.
- Vytvořit databázi BZ a webové stránky k projektu, vytvoření a sdílení databáze k monitoringu.

Rozvoj a sdílení informací

- Usnadnit přístup zahrad k diagnostice a rozšířit spektrum zdrojů pro diag. pracoviště.
- Podpora rozvoje kapacit a poskytnutí školicích materiálů BZ.
- Vývoj metod průzkumů v monitoringu ŠO v BZ.

Zajištění spolupráce do budoucnosti

- Zajištění funkčnosti projektu do budoucna v rámci navázané spolupráce.





- 2013 – 2015
- nastavení globální sítě botanických zahrad
- obsahuje botanické zahrady z kooperujících zemí
- podobné projekty – Nový Zéland, severní Amerika

Zaměřil se:

- vytvoření formuláře pro prohlídky rostlin
- školení inspektorů a personálu botanických zahrad, laboratoří
- postery, publikace, příspěvky na konferencích a seminářích

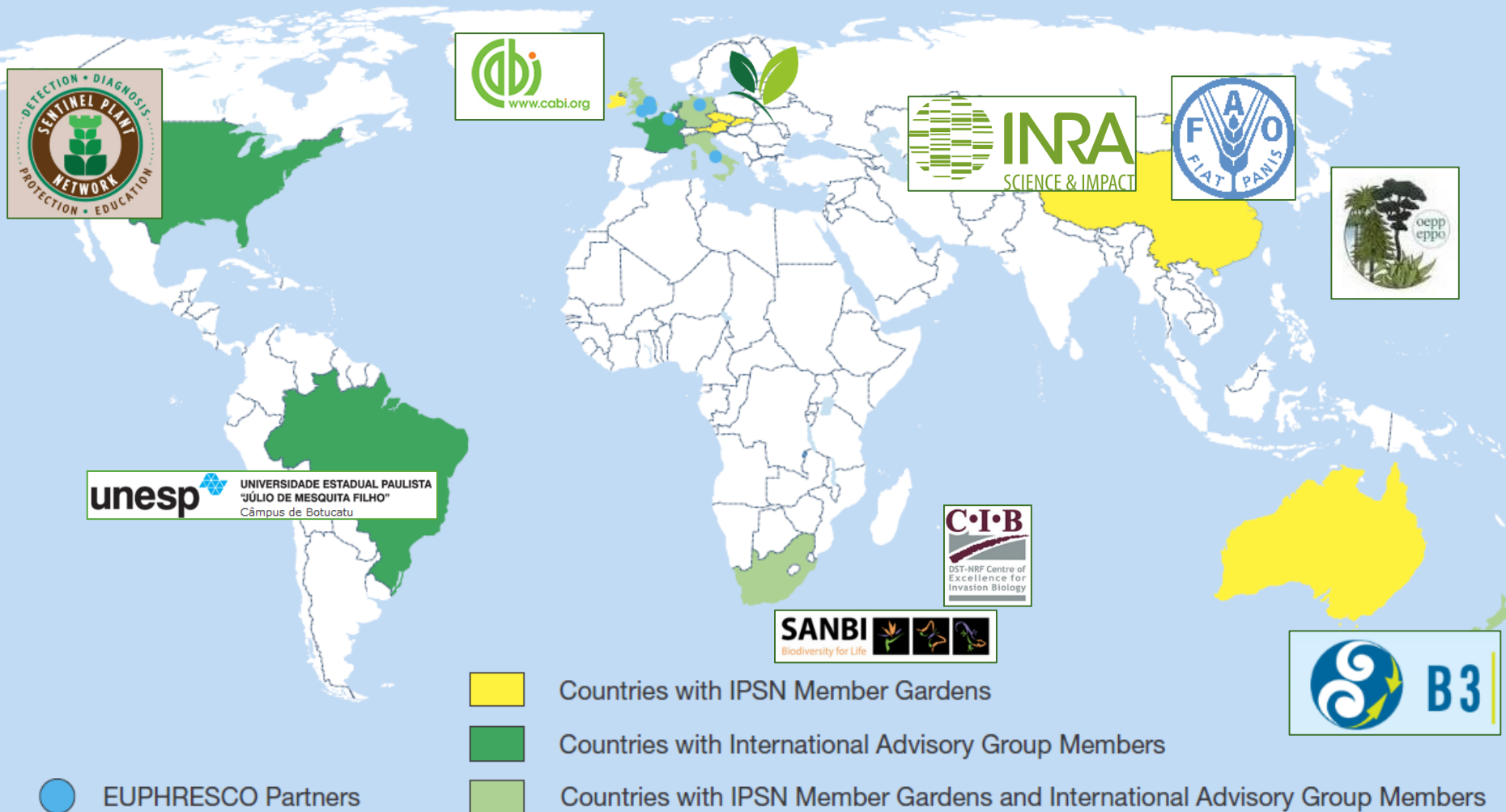
IPSN I

IPSN II

BGCI – převzala vedení projektu EUPHRESCO pro druhý běh (2016 – 2018)

- zvýšení povědomí a angažovanost BZ ve fytosanitárních otázkách
- rozvinout schopnosti a kapacity v BZ pro podporu dovozu
- vytvoření databáze využitím připravených formulářů
- požadované cíle pro BZ a NPPO – rozvoj sbírek, atraktivita pro návštěvníky, využitelnost pro PRA, predikce pro prevenci hrozeb, zvýšit povědomí v otázkách fytokarantény a biosecurity

Mezinárodní síť a spolupráce

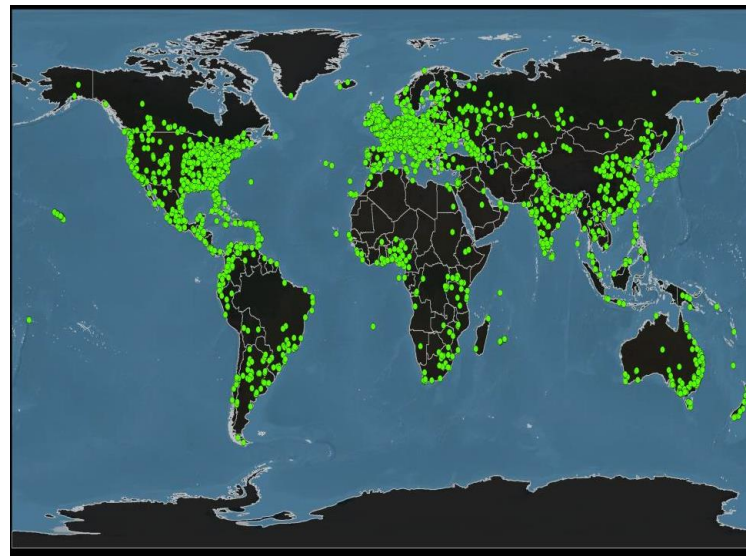




International Plant Sentinel Network

IPSN Member Gardens

- Auckland Botanic Gardens, New Zealand
- Beijing (southern) Botanical Garden, China
- Botanischer Garten der Universität Potsdam, Germany
- Charles University Botanic Garden (Botanická zahrada University Karlovy), Prague
- Christchurch Botanic Gardens, New Zealand
- Core Facility Botanical Garden, Vienna, Austria
- Department of planting design and maintenance, Slovakia
- Dunedin Botanic Gardens, New Zealand
- The Eden Project, UK
- Helsinki University Botanic Garden, Finland
- John F Kennedy Arboretum, Ireland
- Marwell Zoo, UK
- Melbourne Royal Botanic Gardens, Australia
- Mlyňany Arboretum SAS, Slovakia
- Museo Orto Botanico di Roma, Italy
- National Botanical Garden of Georgia, Georgia
- National Botanic Gardens, Glasnevin, Ireland
- Orto Botanico dell'Univerita della Tuscia, Italy
- Royal Botanic Gardens Edinburgh, UK
- Royal Botanic Gardens Kew, UK
- Royal Botanic Gardens Sydney, Australia
- Royal Horticultural Society's Garden Wisley, UK
- Shanghai Botanical Gardens, China
- Shanghai Chenshan Botanical Garden, China
- Shenzhen Fairy Lakes Botanical Gardens, China
- South China Botanical Garden, China
- Stellenbosch University Botanical Gardens, South Africa
- Wellington Botanic Gardens, New Zealand
- The Yorkshire Arboretum, UK
- Xiamen Botanical Garden, China



Mezinárodní síť a spolupráce

ěda
nam – Najdu tam, co n... Seznam – Najdu tam, co n... Vnější karanténa - Vývoz -...



International Plant Sentinel Network

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CHOOSE LANGUAGE

English

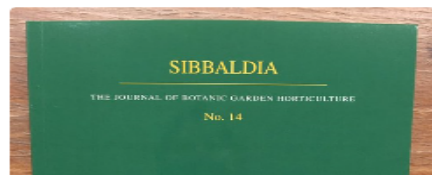
Tweets by @IPSN_BGCI

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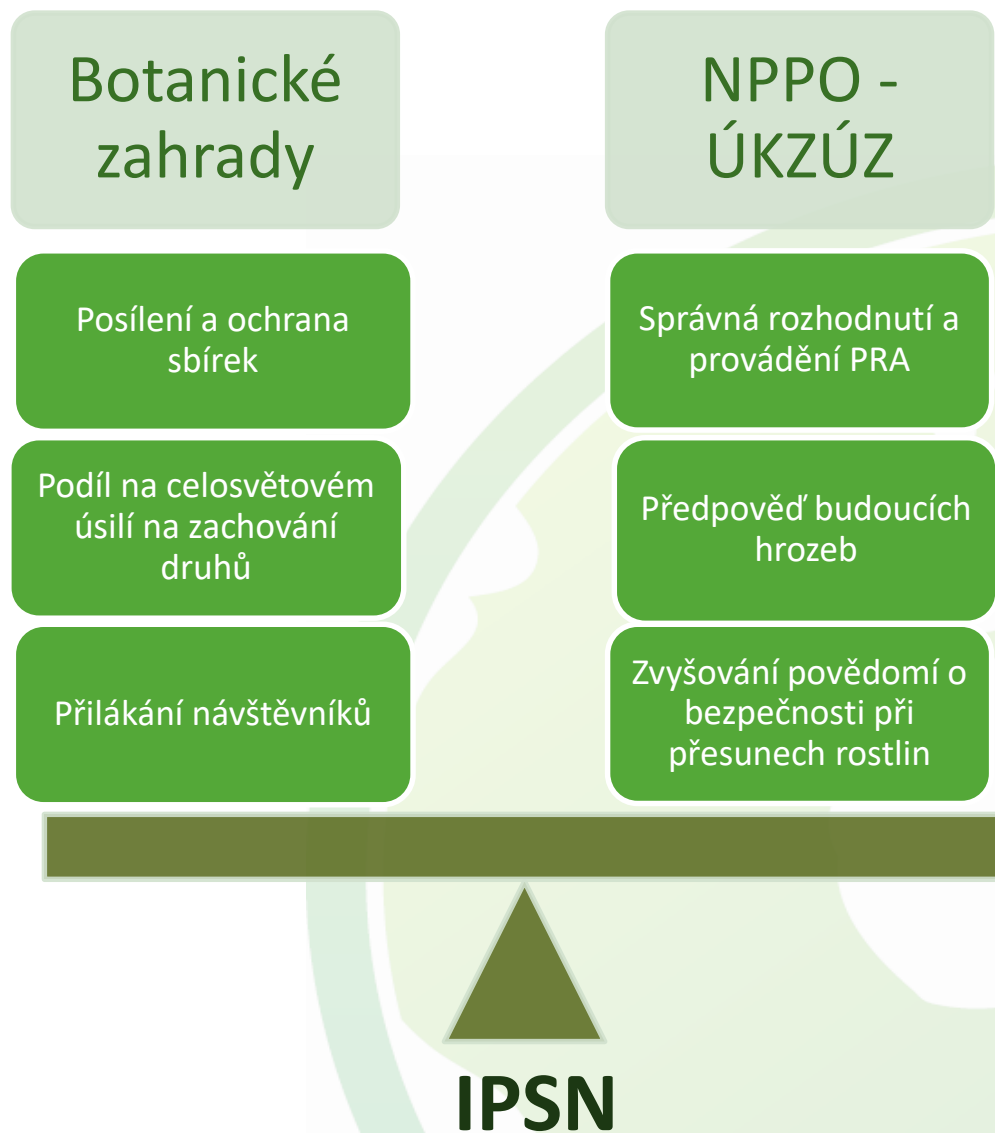


You can find a complete list of IPSN member gardens [here](#)

The increasing globalisation of trade in plants and plant material, together with the impacts of climate change, has led to an increase in the introduction and spread of new and damaging plant pests and pathogens. Past examples of the devastating impact these organisms can have on plant populations (prime examples are [Dutch elm disease](#) on UK elm trees and the [emerald ash borer](#) on U.S. ash populations) illustrate the significant threat these alien pests and pathogens pose to global plant health.

The International Plant Sentinel Network (IPSN) is being developed to facilitate collaboration amongst institutes around the world, with a focus on linking botanic gardens and arboreta, National Plant Protection Organisations (NPPOs) and plant health scientists. The aim will be for these

Motivace a požadované výsledky



Rozvoj a sdílení informací

- fytoosanitární kontroly
- diagnostika
- informační postery
- semináře
- EPPO konference
- setkání
- publikace
- COST Action WG

The image displays three posters from the 'International Field Network Plant Health Checker' series, illustrating a systematic approach to plant health diagnosis.

Poster 1: Plant Health Checker - Step 1
This poster focuses on the initial assessment. It includes sections for 'General description of environment' (location, management, etc.), 'Plant details' (name, family, etc.), and 'Plant health' (symptoms, signs). It features a tree diagram with numbered points (1-5) indicating areas of interest for observation.

Poster 2: Plant Health Checker - Step 2
This poster details the 'General description of environment' and 'Plant details'. It includes a section for 'Plant health' with a detailed tree diagram showing specific areas of interest (1-5) and a section for 'Plant health' with a detailed tree diagram showing specific areas of interest (1-5).

Poster 3: Plant Health Checker - Step 3
This poster focuses on the 'General description of environment' and 'Plant details'. It includes a section for 'Plant health' with a detailed tree diagram showing specific areas of interest (1-5) and a section for 'Plant health' with a detailed tree diagram showing specific areas of interest (1-5).

Rozvoj a sdílení informací

7. General Pest Observations

Frass - fine powdery material or perforated wood found in clump, often produced by wood boring insects or the excrement of insect larvae

Bore holes - small holes found on the trunk and branches, which are the exit holes of wood boring insects

Insect mines - tunnels forming patterns made by leaf mining insects

4. Needles - bands

This may not be obvious at first, but looking closely at discoloured needles may reveal banding (as opposite)

Light green / yellow banding

Brown / red bands

Single bands

Multiple bands

All banding included on this page are examples of *Dothistroma* needle blight damage

International Plant Sentinel Network
EMERGING PEST AND DISEASE THREATS TO TREES IN THE UK
European Ash

Emerald ash borer (EAB) *Agrilus planipennis*

Adults are 7.5-13.5mm long and bright metallic green (image 1).
Larvae are white and grub-like, with a dark head (image 2).
Larvae feeding on the hardwood can result in tree death.
Millions of eggs in North America have died since its introduction, it has now reached the Atlantic coast.

Ash dieback *Hymenoscypha fraxineae*

A fungus which kills the leaves and stems of ash trees (including seedlings).
Causes necrosis, leaf loss, crown dieback and even tree death in mature trees.
Widespread in the EU, first identified in Poland in 1992.

Black timber bark beetle *Xylodermus germanus*

Adult beetles (both sexes) are approximately 5mm long, up to 2.5mm long and black in colour.
The beetle attacks a range of deciduous and coniferous species causing the wood to become white (bleached) and eventually leading to tree death.
A recent EPPO survey has shown the species is widespread in the EU.

REPORT ANY SUSPECTED SIGHTINGS TO: DATE:

International Plant Sentinel Network
EMERGING PEST AND DISEASE THREATS TO TREES IN THE UK

Goldspotted oak borer *Agrilus aurantipus*

Adults are 10-15mm long and bright metallic green (image 1).
Larvae are white and grub-like, with a dark head (image 2).
Larvae feed on the hardwood of oak trees, causing significant damage.
The borer is spread through infested wood and since 2002 has caused widespread tree losses in California and has not yet arrived in Europe but is on the EPPO alert list.

Oak wilt *Ceratocystis fagacearum*

Infected oak leaves have a distinct irregular necrotic leaf margin, which leads to leaf loss, and in extreme cases tree death (image 3).
Fungus attacks the tree through root grafts or sap feeding beetles, which act as a vector.
Red oaks are particularly susceptible to the fungus.
The fungus is already widespread across many states within the USA including Minnesota.

Red oak borer *Enhalodes rufus*

Adults (both sexes) are 10-15mm long, covered in very fine hairs and have a reddish-brown color (image 4).
The female has a long ovipositor, in the first year the female may just penetrate the bark, in the second year the female burrows into the hardwood, creating a tunnel.
During the summer, the female and her eggs are on the ground and often cause tree death.
The borer is on the EPPO alert list.

REPORT ANY SUSPECTED SIGHTINGS TO: DATE:

Mitigating Risk for Different Types of Plant Material			
Wood, timber, bark samples - Can carry nematodes, insects (boring beetles) and diseases - Wood with bark attached is considered particularly high risk - Check; under international law (ISPM 15) woody packaging should be marked to show it has been treated appropriately	Non-certified seed - May carry insects externally and pathogens internally - Inspect both seedlings and (later) young plants - Source carefully	Dried artefacts - Low risk to live plants but can cause problems for herbaria, libraries and galleries - Appropriately treat; e.g. fumigation, heat treatment or rapid freezing	Certified seed - International Seed Testing Association (ISTA) regulated - Unlikely to be pest free but will have very low levels of fungal and bacterial infections - Careful planting; away from susceptible/unhealthy specimens
Plants - Pose a significant threat from any source; the wild, commercial, other organisations, in country or further afield - Inspect carefully on arrival - Quarantine for at least 6 weeks	Soil and growing media - Carry nematodes, flatworms, insects and microorganisms such as fungi bacteria - Quarantine with any associated plant material for at least 6 weeks	Tissue cultures - Usually considered low risk, but depends on source - May carry latent infections and viruses which are very hard to detect - Source carefully	Dried flowers - Low risk to live plants but can cause problems for herbaria, libraries and galleries - Inspect on arrival - Source carefully
Large specimen plants - Herbaria, roots, stems and branches are hard to inspect properly - Plants in soil and with large root balls are particularly high risk - Crucial to source carefully and inspect where material originated - Should a rigorous risk assessment should be carried out - Quarantine for at least 6 weeks	Wild-sourced seed - May carry insects externally and pathogens internally - Thoroughly inspect both seedlings and (later) young plants - Where suitable, soak in a surface sterilant such as dilute hydrogen peroxide	Reproductive material or storage organs - E.g. bulbs, fruits, etc. - Common pathway for non-native and quarantine pests and diseases - Thoroughly inspect on arrival - Source carefully	Cut flowers - Dependent on type, source and cultural conditions e.g. tropical flowers such as <i>Phalaenopsis</i> have been found to be infested with <i>Thrips palmi</i> - Inspect on arrival - Source carefully
Type of material - General information - Potential mitigation actions			
High risk (red) to Low risk (green)			

Semináře a workshopy



Huntington Library, Art Collections and Botanical Gardens, U.S.



Shenzhen Fairy Lake Botanical Garden (CAS), China



Royal Botanic Gardens Kew,
UK





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Dosavadní zkušenosti a projekty:

- FERA**
- workshopy (Čína, Mexiko), spolupráce s USA a N. Zélandem
 - spolupráce při testování dotazníků s IPSN I v arboretu Yorkshire
 - v rámci projektu zjištěn nový druh dvoukřídlého hmyzu *Agapanthus gall* midge původem z JAR
- AGPA**
- botanické zahrady přispívají do společné databáze, využívají e-mailové alety a veřejné publikování
 - výhody včasné detekce
- BGCI**
- cíl zachování biodiversity, 3341 zahrad
 - databáze bot. Zahrad a pěstovaných rostlin
- JKI**
- projekt nástražných rostlin, 8 druhů z dostupných osiv – příprava metodiky
- BZ Meise (BE)** – 7 BZ propojeno s NPPO



ÚKZÚZ – aktivity v ČR

- organizace seminářů – zavlékání ŠO do Evropy, rizika při zavlečení
- v rámci IPSN vybudování sítě kontaktů (BZ, ÚKZÚZ)
- nabídka diagnostiky
- vytipování rostlin pro průběžné sledování výskytu ŠO
- informační listovky





International Plant Sentinel Network

Jak se přihlásit k projektu:

Designate a contact person who will interact with the network coordinator and ultimately help to coordinate IPSN activities

- Read and agree to the IPSN's [Member Garden Formal Agreement](#)
- Send an email to the IPSN coordinator

