

International Plant Sentinel Network

Presentation to TC26 2014

With thanks to Ellie Barham





International Plant Sentinel Network

The IPSN aims to provide an early warning system to recognise new and emerging pest risks

IPSN and Plant Sentinels

The main aim is to identify ‘unknowns’

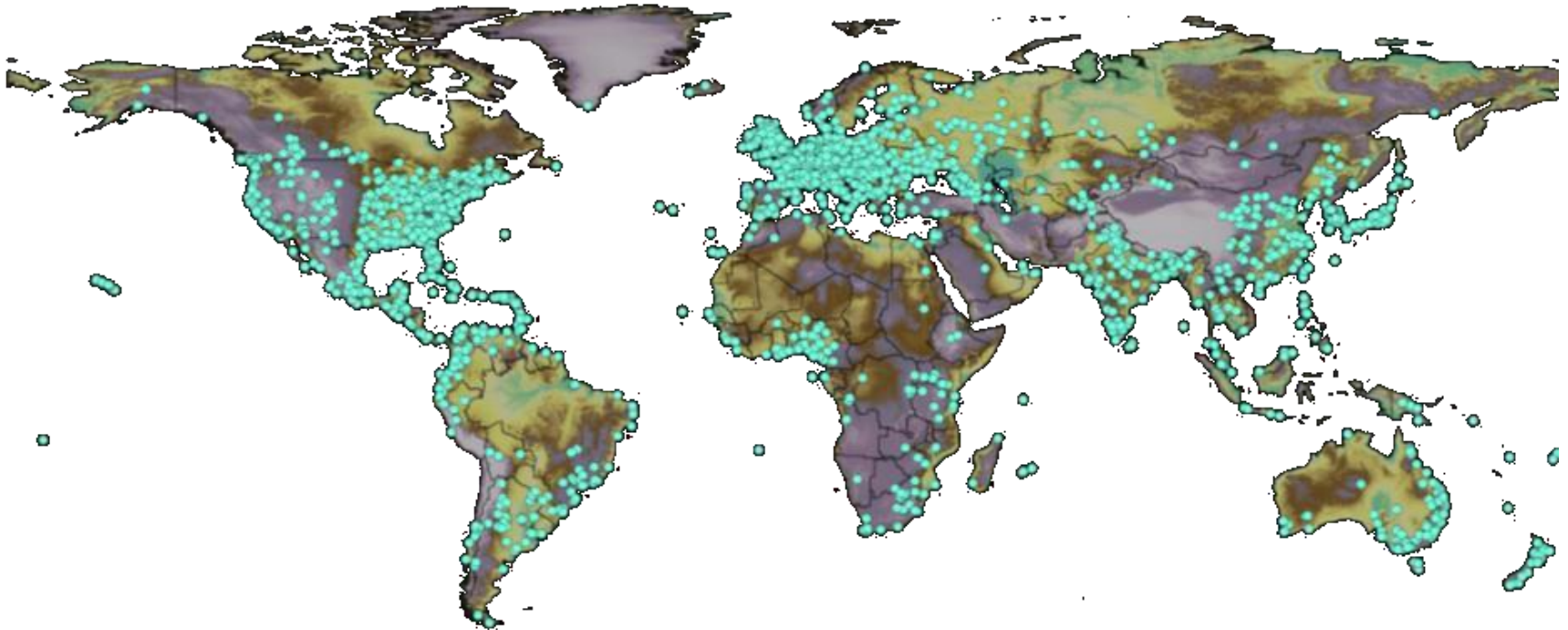
Other research opportunities to inform Plant Health include:

- Increase understanding about ‘knowns’ (e.g. dispersal mechanisms, lifecycles etc.)
- Identify new pest-host associations
- Identify potential biocontrols
- Early warning system for countries
- Aid in integrated management tools



Advantages of Botanic Gardens and BGCI

- Over 3,000 botanic gardens
- 30-40% of known plants
- Presence of non-native species



Raising Capacity and Capability

- Training materials
- Methodologies for monitoring and surveying of alien plant pests and diseases
- Creating standardised approaches
- Seeking best practice
- Diagnostic tools



Yorkshire Arboretum, Castle
Howard, UK

Progress to date

- Information gathering
- Communication and Recruitment
- Small scale sentinel research projects
- Website development
- Creation of a standard surveying protocol

IPSN Plant Health Checker – Step 1

Name of Botanic Garden / Arboretum: _____
 Country: _____
 Address: _____
 IPNS contact: _____

Survey details
 Survey carried out by: _____
 Date of survey: _____
 Best description of season: _____
 Main reason for surveying this particular individual: _____

Plant details
 Species (Cultivar): _____
 Accession number: _____
 GPS: _____
 Country/region species is native to: _____
 Age/amount of time plant has been present in gardens: _____
 General Comments: _____

General description (please tick)
 Generally healthy ☐ Some damage ☐
 Dying ☐ Dead ☐
 Any recent changes in health or overall look: _____

General description of environment
 Any management issues (e.g. irrigation, soil pH, sun bleaching) or any recent use of pesticides/fungicides/herbicides: _____
 Description of environment (focusing on recent changes and individuals in close proximity): _____

For each section of the plant give it a rating dependent on how healthy it appears:
☐ Red (R) = In very poor health and an imminent concern to the plant's health
☐ Amber (A) = Not currently a concern but could develop; should be checked frequently to monitor progress
☐ Green (G) = As would be expected on a 'healthy' plant
☐ Black (X) = Absent/not applicable
 Where an amber or red rating is given, ensure you give description of why you've given it this rating in the comments

1.) Crown
 R A G X
 Comments: _____

2.) Flowers / Fruit (circle)
 R A G X
 Comments: _____

3.) New growth
 R A G X
 Comments: _____

4.) Leaves
 R A G X
 Comments: _____

5.) Trunk & branches
 R A G X
 Comments: _____

6.) Roots (if exposed), base and groundcover
 R A G X
 Comments: _____

IPSN Plant Health Checker – Step 2

Accession number: _____

This section should be completed if escalation is specified by STEP 1. It should be carried out by an appropriately trained staff member who has the relevant knowledge concerning the plant's history/pest and pathogen identification skills. Tick all signs/symptoms that are at abnormal levels or are unexpected for the individual, and are thus cause for concern (e.g. are out of the ordinary/new to the plant). Give a description and an indication of severity/abundance in the general comments, plus note anything else of importance or interest.

1. Crown
 Thin / sparse ☐ Yellow leaves ☐ Dead wood ☐ General Comments: _____

2. Blossom/Flowers
 Dead ☐ Malformed ☐ Swollen ☐ General Comments: _____

3. New Growth (Shoots and Buds)
 Dead ☐ Wilted ☐ Dieback ☐ Malformed ☐ General Comments: _____

4. Leaves
 Dead ☐ Smaller than expected (stunted) ☐ Sticky ☐ Rust ☐ Mosaic ☐ Mottled ☐ Galls ☐ Mildew ☐ General Comments: _____

5. Trunk & Branches
 Canker or lesion (note below) ☐ Bark flaking / comes off easily ☐ Wet ☐ Dry ☐ Gummy / sticky ☐ Trunk bleeding ('weeping patches') ☐ Approx. height of bleed from ground (m) _____
 Approx. number of bleeds over trunk _____
 Vertical bleeds (in line up the trunk) ☐ Horizontal bleeds (around the trunk) ☐ General Comments: _____

6. Base, Roots & Groundcover
 Bootlaces/black strands (1-2mm wide) ☐ Fungal mycelium (white strands) ☐ Mushrooms / toadstools on plant ☐ Signs of damage by mammals ☐ Decay / rotting (circle below) ☐ Wet ☐ Dry ☐ General Comments: _____

7. General pest damage
 Insect galleries under loose bark ☐ Insect eggs ☐ Chewing damage ☐ Insect webbing ☐ Insect mines ☐ Frass ☐ Bore holes (note below) ☐ <5mm ☐ 5-10mm ☐ >15mm ☐ General Comments: _____

8. Pest sightings
 Certainty of ID? ☐ Is it damaging? ☐ Photo: _____

9. General Observations and Additional Notes

What do you think is wrong with this plant?
 (After an indication of how sure you are of this diagnosis)
 1.) Is a re-survey required? ☐ 2.) If yes, in what timeframe (include a suggested date) _____ 3.) Should this be escalated to an appropriate staff member to carry out STEP 2 ☐ Name of person escalated to: _____ Date: _____

What do you think is wrong with this plant?
 (After an indication of how sure you are of this diagnosis)
 1.) Is a re-survey required? ☐ 2.) If yes, in what timeframe (include a suggested date) _____ 3.) Should this be escalated to the appropriate National Plant Protection Organisation? ☐ 4.) Person escalated to (if applicable): _____ 5.) Date escalated: _____

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The Plant Health Checker

Recruitment

www.plantsentinel.org



Dept. Plant Protection,
FCA/UNESP - Campus de
Botucatu



Future

- Continuation of work; communication, recruitment, capacity building, development of materials etc.
- Creation of additional resources
- Development of reporting system
- Identification and promotion of potential research opportunities



Thank you
www.plantsentinel.org

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