



Asia-Pacific Forest Invasive Species Network

Training Workshop

DEVELOPING SKILLS IN FOREST PROTECTION: AN INTEGRATED APPROACH

23 – 27 October 2018

Beijing, China

Background

Worldwide, forests and forest plantations are facing new and increasing threats from pests and diseases. Apart from economic losses, these threats also pose negative consequences to the environment and native habitats. In efforts to address these problems, several training workshops have been held under the umbrella of the Asia Pacific Forest Invasive Species Network (APFISN), for example, the APFISN Training Workshop on Forest Invasive Pests, held in Haikou, Hainan, China in 2016. Other training workshops on insect pests and invasive weeds have also been conducted by other agencies but so far none have focused on forest tree diseases.

Over the last two decades, numerous diseases such as Ceratocystis wilt and Guava rust have emerged as major disease threats to forests and forest plantations in the Asia-Pacific region, with the former being a particularly serious and widely occurring problem. In the Asia-Pacific region, the capacity and ability to recognise these and other tree diseases and pathogens quickly and accurately are limited not only by a lack of personnel but also personnel with suitable training in forest protection, particularly forest pathology. Several universities in the region offer training in forestry and among those that do, most only offer general plant protection courses which are inadequate to tackle the existing and emerging pest and disease problems. In addition, laboratory and hands-on practical training is often inadequate or sometimes not provided at all. Effective management and control of any disease depends on prompt and accurate diagnosis and identification of the pest or pathogen but this is only possible provided adequately trained personnel are available or in place.

This training workshop, to be held in Beijing, China from October 23-27, 2018 in conjunction with the China National Forest Protection Congress, aims to provide hands-on training on properly identifying disease based on signs and symptoms, causal agents, and best management practices for disease control. It is targeted at recent graduates, entry-level and mid-level practitioners who are involved in forestry management, forest health monitoring, and management of forest diseases and their control.

The co-hosts will be the Asia-Pacific Forest Invasive Species Network (APFISN), International Society of Zoological Sciences (ISZS) and Sino-France Joint Laboratory for Forest Invasive Species in Eurasia, and Beijing Forestry University. The supporting partners are to be the USDA, Forest Service, the State Forestry and Grassland Administration of China, and the Institute of Zoology, Chinese Academy of Science.

Training will be provided by Dr. Bruce Moltzan, Dr. Wang Yonglin and Dr. Lee Su See, covering both temperate and tropical tree diseases. Other researchers who will be in Beijing during the National Forest Protection Congress or related meetings may be invited to deliver lectures on special topics, such as the relationship between insects and some tree diseases.

Objectives

The main objectives of this training workshop are to equip participants with the skills to:

1. Understand the concept of the **Disease Triangle, Koch's Postulates**, and **what constitutes disease**.
2. Recognise and identify the main **causes of plant disease**, basic biology, disease **distribution** and **spread**. Identify common fungi based on morphology and DNA bar-coding.
3. **Detect and diagnose disease** using various methods of sampling, culturing, specimen preservation and collection.
4. Determine suitable **methods of disease management and control** with emphasis on integrated pest management (IPM).

Participants

This training course is targeted at recent forestry graduates and practitioners who plan to/will be involved in aspects of forest health and management, monitoring, silviculture, tree breeding, pest and disease management and control. The target number of trainees is 30 participants, the number of participants from Asia-Pacific Forestry Commission member countries outside China depending on the available budget.

Working Language

The working language for the symposium and training course is English.

Location

The training will be held at the Forest Pathology Laboratory and in the grounds of Beijing Forestry University (BFU), Beijing, China. During the training, visits will be made to Beijing Forestry University museum to view the large collection of plant disease samples, and the nearby Fragrant Hills for disease survey, sample collection, and on-site discussion and design of disease management and control methods.

Outcomes

Participants will be exposed to the principles of forest pathology, including an overview of basic plant pathology, disease survey and sampling methods, recognition of signs and symptoms caused by fungal pathogens, disease diagnosis, laboratory techniques such as culturing, making slides, usage of microscopes, and principles of disease management and control, including integrated pest management (IPM). Apart from the hands-on training, participants will also be provided with basic resources, reference material, weblinks, contacts, and other tools so that they can apply what they have learned at the workshop back in their home countries.

Nominations for Training Course Participants

Although introductory, participants should have an understanding of pathology so they are at least familiar with general terms and biology of pathogens. Participant's work should also be directly related to forest diseases. Participants must submit a nomination form (below) to be considered for this training.

Meeting organizers will cover selected participant's air travel (direct round-trip economy class), registration and visa fees, hotel accommodation and meals, during the meeting in Beijing, China from 23–27 October, 2018.

Completed nomination forms are **DUE** at the APFSIN Beijing Secretariat before **May 11, 2018**. Completed forms and inquiries should be sent to Mr Chunxu Han, the APFSIN Secretariat –Beijing: iszs2@ioz.ac.cn.

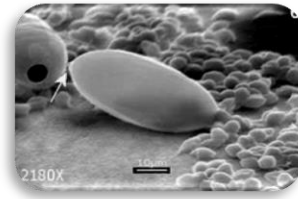
Contact

Contact: Mr Chunxu Han (iszs2@ioz.ac.cn), APFSIN Beijing Office or ISZS Secretariat. Address: Room C-506, Institute of Zoology, Chinese Academy of Sciences, 1 Beichen West Road, Chaoyang District, Beijing 100101, China; Tel: +86-010-6480-7295; Fax: +86-010-6480-7295; Email: iszs2@ioz.ac.cn; Website: www.globalzoology.org.

DRAFT AGENDA

Day 1

- Opening Remarks
- Overview of major pathogens in the region
- Historical Perspectives
- Abiotic and Biotic Diseases
- Forest Pathology Concepts
- Disease Triangle
- SIGNS/SYMPTOMS
- Fungi, Bacteria, Nematodes, Virus, Phytoplasmas
- Afternoon walk about in BFU campus – illustrating morning discussions



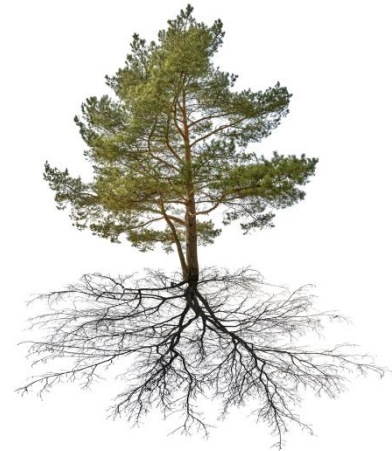
Day 2

- Disease Cycles, Epidemiology
- Nutritional Strategies (saprophytes, facultative parasites, facultative saprobes, obligate parasites)
- INTEGRATED PEST MANAGEMENT
- Foliar Diseases
- Branch Diseases
- Stem Diseases
- Root Diseases
- Insect-vectored diseases



Day 3

- Field DAY/Collection trip – urban/plantation/forest
- Sampling and survey methods
- Laboratory Procedures
- Processing Samples
- Microscopy
- Isolation and Culture



Day 4

- Molecular diagnostics
- Survey & Monitoring
- Establishing Plots
- Data Capture
- Effective Reporting

Day 5

- Phytosanitary Standards & Quarantine
- Wrap-up Disease Collections (5 to 10 diseases?)
- Networks to find answers
- RESOURCES/LINKS
- Graduate/Closing



Asia-Pacific Forest Invasive Species Network

Nomination Form – DUE May 11, 2018

Training Workshop

DEVELOPING SKILLS IN FOREST PROTECTION: AN INTEGRATED APPROACH

23 – 27 October 2018

Beijing, China

FIRST NAME:

FAMILY NAME:

MAILING ADDRESS

Street:

City:

Country:

Country/Postal Code:

E-mail:

TELEPHONE NUMBER

Country Code:

Area/City Code:

Number:

EXPERIENCE

Dates (from to present):

-

Current Job Title, Current Position:

Institution:

- Please describe your current roles and responsibilities in forestry and forest protection (no more than five sentences):

EDUCATION

Month/Year of Completion -

Degree Title, School -

- Describe your highest level of schooling and relevant course work in forestry and pathogen diagnosis (no more than five sentences):

PLANT/FOREST PATHOLOGY SKILLS

- If available, please provide a list of your skills and strengths in plant/forest pathology, e.g. identification, monitoring, management, etc.
 -
 -
 -

WHAT SKILLS DO YOU WISH TO LEARN FROM THIS TRAINING WORKSHOP

(1 paragraph of not more than 250 words)

HOW DO YOU PLAN TO APPLY WHAT YOU HAVE LEARNED AT THIS WORKSHOP WHEN YOU RETURN TO YOUR INSTITUTION

(1 paragraph of not more than 250 words)

REFEREE/REFERENCE

First Name:

Family Name:

Institution:

Job Title:

Telephone Number

Country Code:

Area/City Code:

Number:

E-mail: