



# **Diagnostics Part 1**

Speaker: Al Lane  
Tuesday, March 23<sup>rd</sup>  
Presented by PTS & PCA




Diagnosing ornamental plant disease problems is often a very difficult process as there are dozens of reasons a plant is under stress and showing signs of deteriorating health.

Some of the most simple and common causes are often overlooked.



# Overview

Today we will discuss how to accurately diagnose ornamental disease problems on Long Island\*. Identifying disease problems are much more difficult to diagnose than insect problems. There are so many extenuating factors that can promulgate a plant disease, making the accurate diagnosis extremely difficult. Mis-diagnosing costs the applicator time, unnecessary pesticide costs, re-treatments and most of all a lost client. Today and next week we will conduct an in-depth discussion on the steps to take to accurately diagnose and correct the problems. When proficiency is accomplished, 85% of problems can be solved quickly on the job site.





**48" SOIL PROBE**

**24" SOIL SAMPLER**

**SMALL SPADE**

**25-30X HAND LENS**

**LED FLASHLIGHT**

**HAND PRUNER**

**KNIFE & RAZOR**

**WIRELESS  
MICROSCOPE CAMERA  
(200X)**

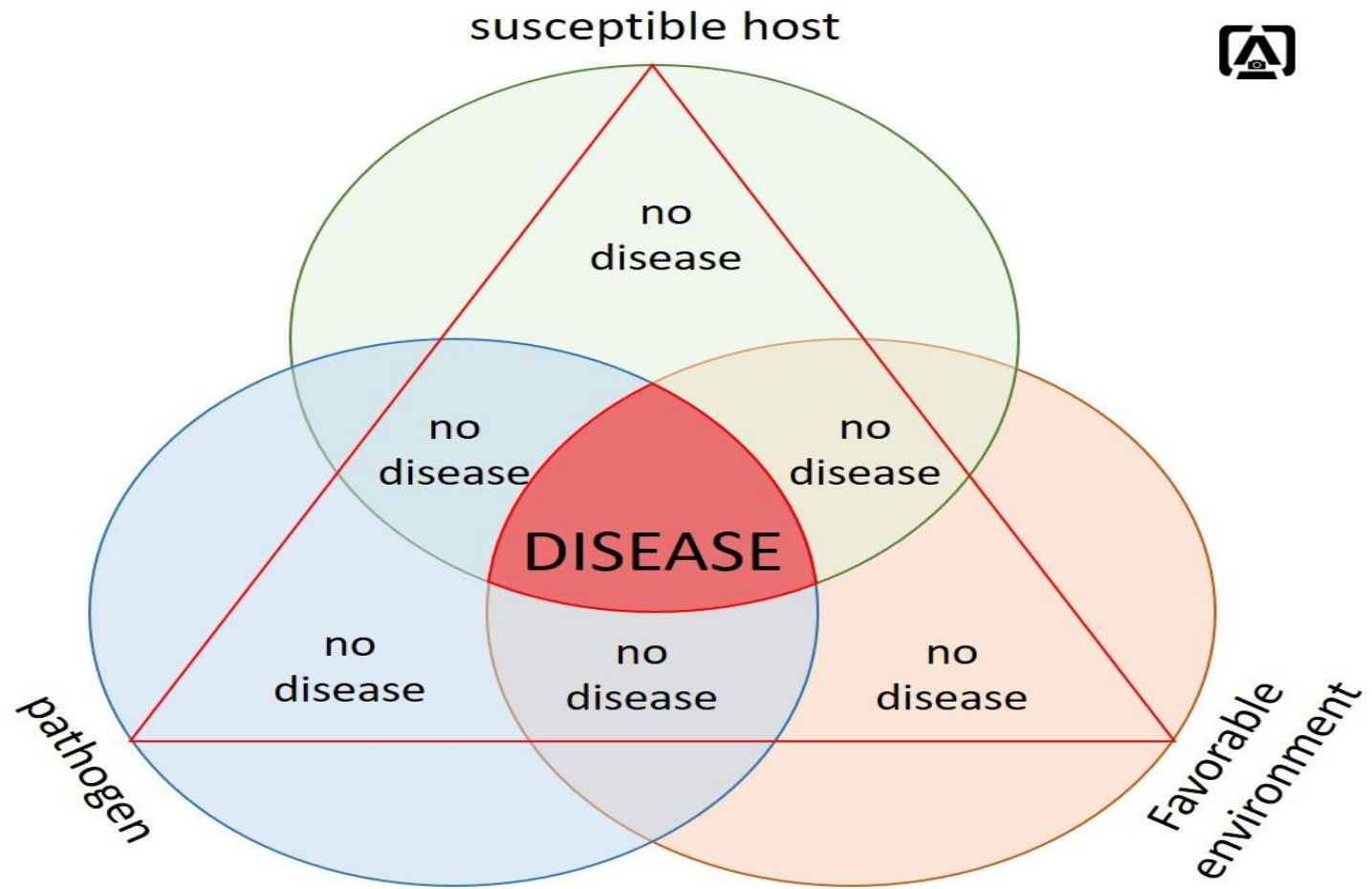
**Having the necessary diagnostic tools will help you diagnose problems on site!**

# TIPS & HINTS TO ACCURATE DIAGNOSING



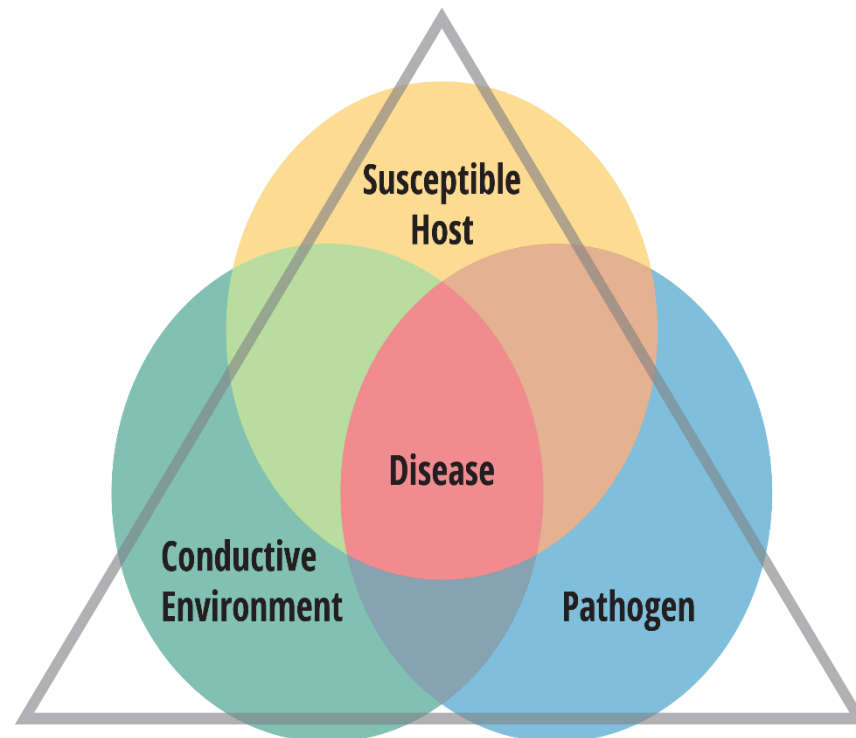
- ✓ Know your plant species \*
- ✓ Know the prevalent insect AND diseases associated with the particular plant
- ✓ Know your plant species preferred climate \*
- ✓ Know your plant species specific growing requirements
- ✓ Question your client on when the problem was first noticed
- ✓ Question your client on any other pesticides that may have been applied previously \*
- ✓ Question your client on their irrigation schedule \*

# Most, if not all, plant diseases occur when a **DISEASE TRIANGLE** occurs



**Plant pathogens may be present year round but will only cause disease when environmental conditions favor infection \***

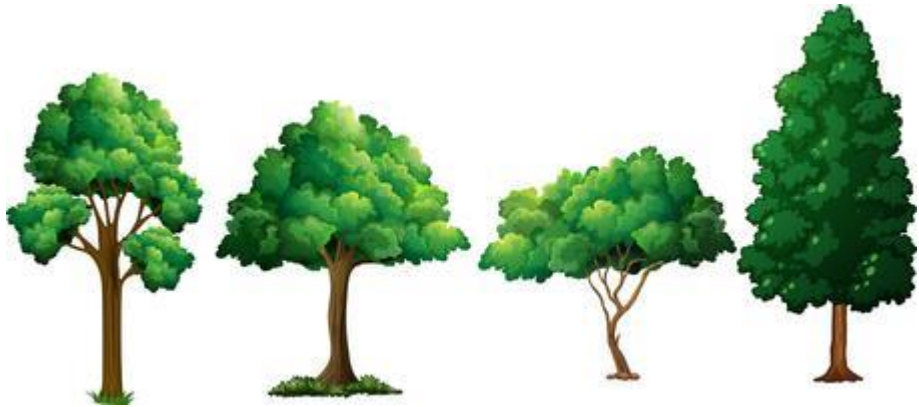
**Plant disease diagnosis follows systematic steps in observing the host, pathogen and existing environmental conditions.**





When inspecting a problem ornamental, look at the ENTIRE plant. Not only the affected foliage.

STAND BACK to observe and take in the entire picture to gain details about the pattern.



Probe the soil in the root area out to the drip line for moisture levels, depth and lay of mulch, etc. \*\*



The pattern of infection and the plant part affected  
will be your first clues \*

1. Canker Diseases: stems & branches

- Seridium - Leyland Cypress
- Cytospora - blue & Norway Spruce

2. Leaf and Needle Diseases: leaf spots, blights

- Cercospora Blight - Cryptomeria
- Needlecast - Spruce
- Shot Hole\* - Laurels

3. Wilts, flagging & drooping - Xylem induced

- Phytophthora - Rhododendron, Holly and Azalea
- Powdery Mildew - Crepe Myrtle

ABIOTIC CAUSES: MOISTURE, TEMPERATURE, SOIL pH, NUTRIENT DEFICIENCIES, EXCESS SALT

BIOTIC CAUSES: FUNGI, BACTERIA, VIRUSES

OTHER CONSIDERATIONS:

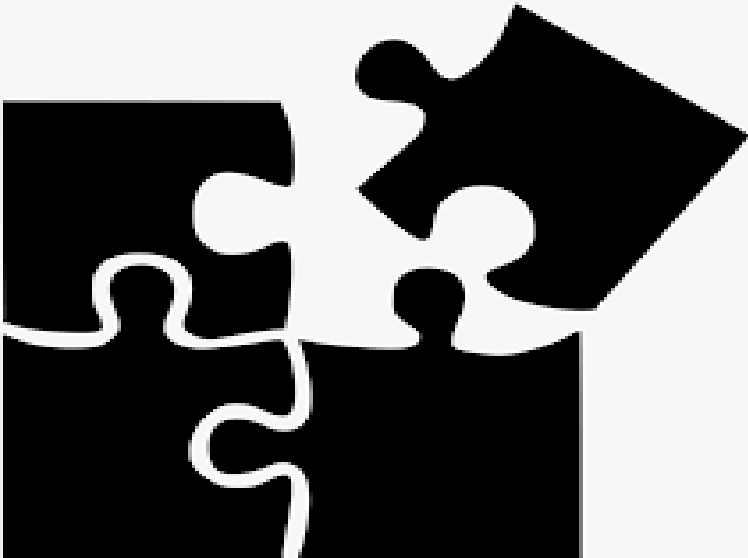
LOCATION AND DIRECTION OF INFESTATION

1. STARTING NEAR TRUNK AND MOVING OUT
2. STARTING AT THE BOTTOM AND MOVING UP
3. STARTING ON BRANCH TIP
4. STARTING AT THE TOP AND MOVING DOWN

Often overlooked



# FACTORS to consider

1. Temperature: excessive cold or excessive hot
2. Moisture, including too much or too little
3. Soil pH
4. Soil Nutrition: micro-nutrients, magnesium & salt levels
5. Mulch, type & quantity
6. Winter Damage
7. Air flow / circulation
8. Difference between fungal & bacterial diseases
9. Insect vectors of diseases
10. Plant Location





## NEXT SESSION: MARCH 30, 2021

- **Visual ID Pictures + Control & Timing**
    - **Arborvitae: Pestalotiopsis Blight**
    - **Blue Spruce: Sirococcus Blight**
      - **Spruce: Needlecast**
      - **Spruce: Cytospora Canker**
    - **Cryptomeria: Cercospora Blight**
      - **Cryptomeria: Phomopsis**
    - **Leyland Cypress: Seiridium canker**
      - **Boxwood: Blight**
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**HAVE ANY QUESTIONS FROM THIS COURSE?**

**EMAIL [HEATHERRASO4@GMAIL.COM](mailto:HEATHERRASO4@GMAIL.COM)**

**AND WE WILL ADDRESS THEM IN THE NEXT SESSION ON  
MARCH 30<sup>TH</sup>.**