Basic Plant Pathology Training
Diagnostic theory and practice

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Requirements to do diagnostics
• Organized, logical approach
• Able to ask the “right” questions
• Access to reference materials
• Knowledge of local soil and weather characteristics
• Common sense and a “detective” enthusiasm

Steps in diagnosing plant diseases
1. Identify the plant
2. Define the problem
3. Develop list of potential disease candidates
4. Refine diagnosis
5. Getting additional help

1. Identifying the plant
• Ask person who submitted sample
• Ask your County agent
• Ask a fellow Master Gardener
• Consult literature (books, internet, photos)
• Get at least to the genus
2. Define the problem

- Is there a problem?
- What is the nature of the problem?
  - Insect
  - Fungi
  - Bacteria
  - Etc...

2. Define the problem (Information gathering)

1. History of planting and site
2. Check for patterns
   i. Individual plants
   ii. Whole plantings
   iii. Surrounding plant community
3. Identify affected plant parts

3. Develop suspect list

- What could cause the symptoms that were noted?
  - Example: marginal leaf scorching could be caused by drought, root damage, bacteria (Xylella sp.), root rotting fungi...
3. Coming up with suspects

- BIOTIC
  - Symptoms is usually scattered
  - Symptoms develops gradually over time (on individual and whole plantings)
  - Sign of pathogen is observable
- ABIOTIC
  - Symptoms are uniformed
  - Generally appear all at one time
  - Does not appear to spread
  - Affects more than 1 type of plant in immediate area

4. Refine diagnosis

- Asking the right questions!!!
- Match up the symptoms and the potential suspects
  - Example: scorching = were conditions dry and hot the past several weeks? Was there lack of irrigation?...
- Match up environmental conditions and pathogen growth requirements
  - Example: black spot on roses = were there sufficient moisture for the spores to germinate and infect?
- Match up notes taken and notes from literature

5. Getting additional help

- Looking for confirmation of diagnosis
  - Sending sample to the Texas Plant Disease Diagnostic Lab
  - Getting opinions from area experts
- Always provide as much pertinent information as possible