

Diagnosis of Plant Problems

Lab #1

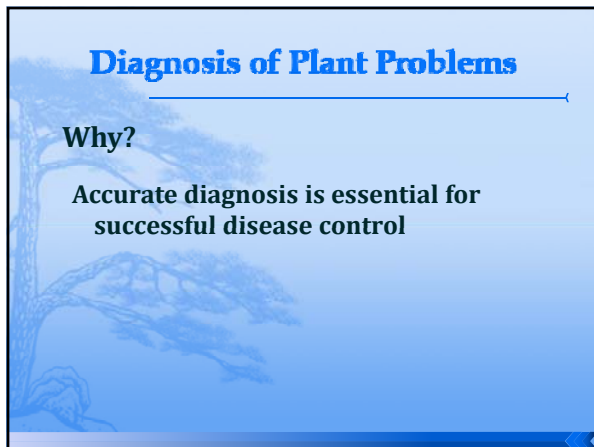
This slide features a blue background with a faint image of a tree on the left side. The title 'Diagnosis of Plant Problems' is in a bold blue font, and 'Lab #1' is in a smaller black font below it.



Diagnosis of Plant Problems

- Steps in Diagnosing Problems
- Symptoms vs. Signs
- Type Disease Concept
- Microscopes & specimen prep

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Diagnosis of Plant Problems

Why?

Accurate diagnosis is essential for successful disease control

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Diagnosis of Plant Problems

1. Identify the plant affected
scientific name & variety
2. Examine the entire area
look for patterns
how did the disease develop?
3. Determine the primary symptoms

Symptoms vs. Signs

Symptom
* A response of the host to the pathogen

Sign
* A part of the pathogen

Lesion
* An area affected by disease

Diagnosis of Plant Problems

4. Look for signs
5. Isolate and identify the pathogen
6. Consult literature
 - checklists
 - diagnostic aids

Common Names of Plant Diseases

Potato late blight	<i>Phytophthora infestans</i>
Celery late blight	<i>Septoria apii</i>
Ring rot of potato	<i>Clavibacter michiganense</i> <i>pv. sepedonicum</i>
Fusarium wilt of tomato	<i>Fusarium oxysporum f.sp. lycopersici</i>
Phytophthora root rot	<i>Phytophthora sp.</i>

Scientific Names of Pathogens

Genus + species (authority 1) auth. 2
Phytophthora infestans (Mont.) deBary

Synonyms

Phytophthora infestans (Mont.) deBary
(syn. *Botrytis infestans* Mont.)

Symptoms of Plant Disease

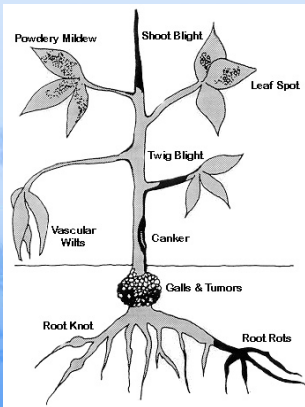
1. Color changes
2. Death of plant tissues
3. Abnormal growth increase
4. Abnormal growth decrease
5. Wilting
6. Defoliation/fruit drop
7. Replacement of plant tissues

Type Disease Concept (Type of Disease)

A group of diseases that have similar symptoms and affect the same plant part

- Similar pathogens
- Environmental conditions
- Disease cycles
- Control measures

Type Diseases



Type Diseases

- | | |
|-----------------|-------------------|
| Downy mildew | Root & foot rots |
| Ergot | Rusts |
| Galls/tumors | Seedling diseases |
| Leaf curls | Smuts |
| Mosaics/Mottles | Vascular wilts |
| Powdery mildew | Yellows |

Microscopes

