

IDENTIFICATION AND CONTROL OF PATHOGENS IN THE PROPAGATION ENVIRONMENT

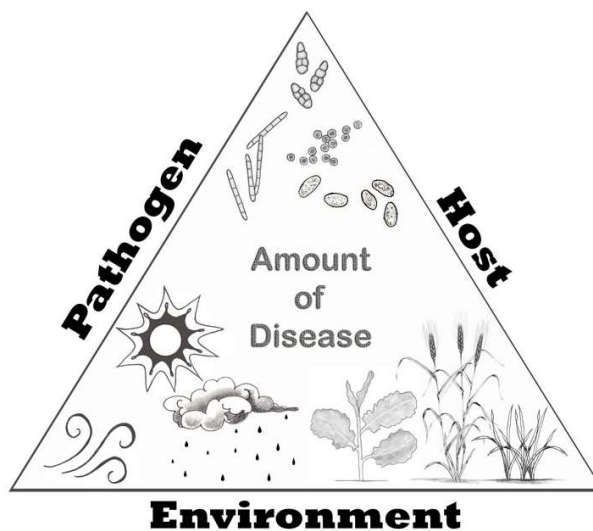
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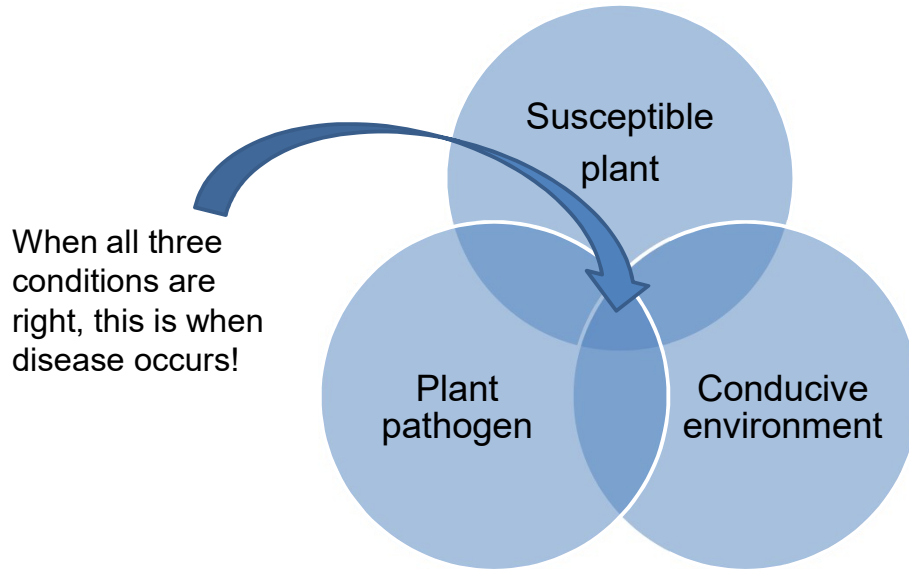
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Disease Triangle



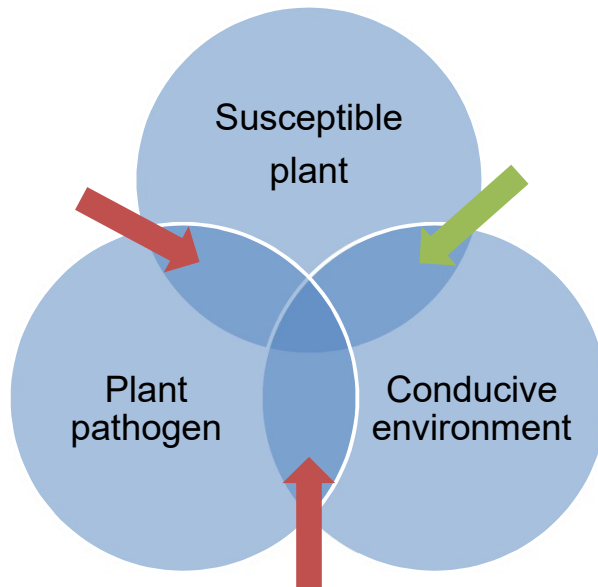
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Components required for disease:



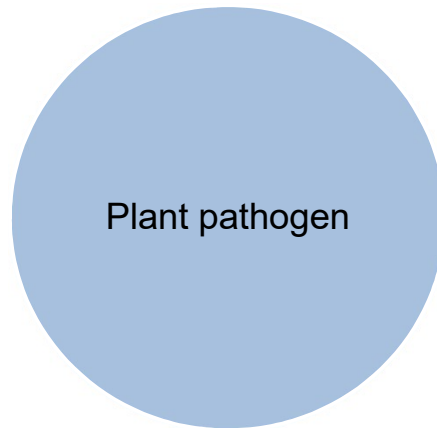
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Two areas where we can interfere to prevent disease:



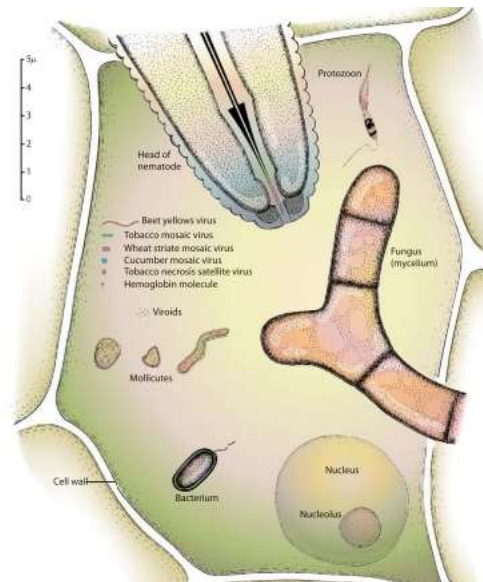
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But first, we need to understand pathogen biology



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Relative size of various plant pathogens



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Two ways a pathogen can manifest:

- Symptom

- Changes in the plant's appearance as a result of the pathogen
- Deviations from the plant's normal appearance

- Sign

- Structures of the pathogen visible on the plant
- Physically seeing the pathogen

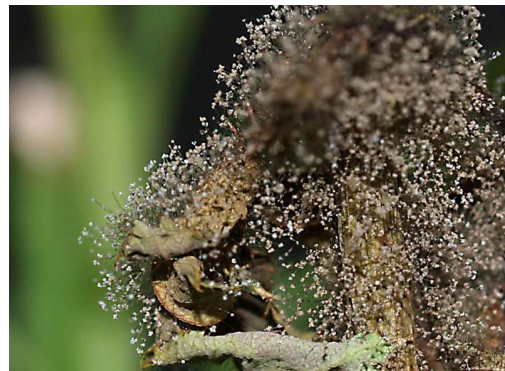
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Two ways a pathogen can manifest:

Symptom



Sign



Botrytis leaf blight

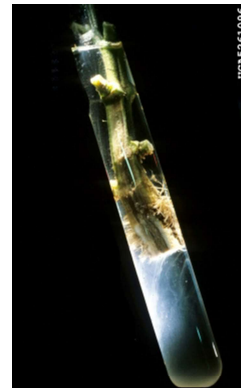
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Two ways a pathogen can manifest:

Symptom



Sign

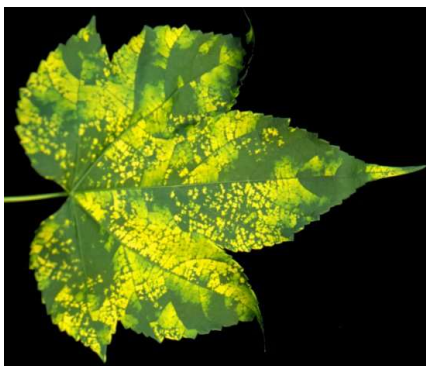


Bacterial Wilt

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Two ways a pathogen can manifest:

Symptom

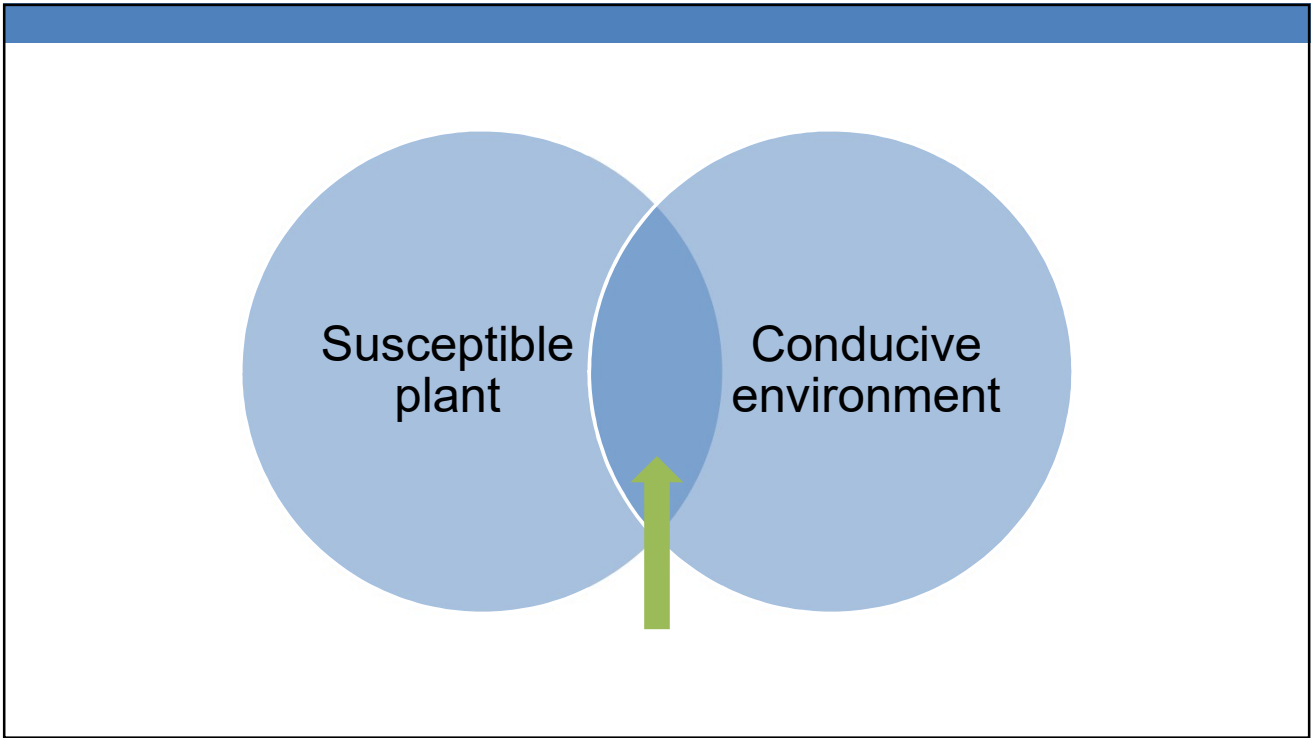


Sign



Abutilon Mosaic Virus

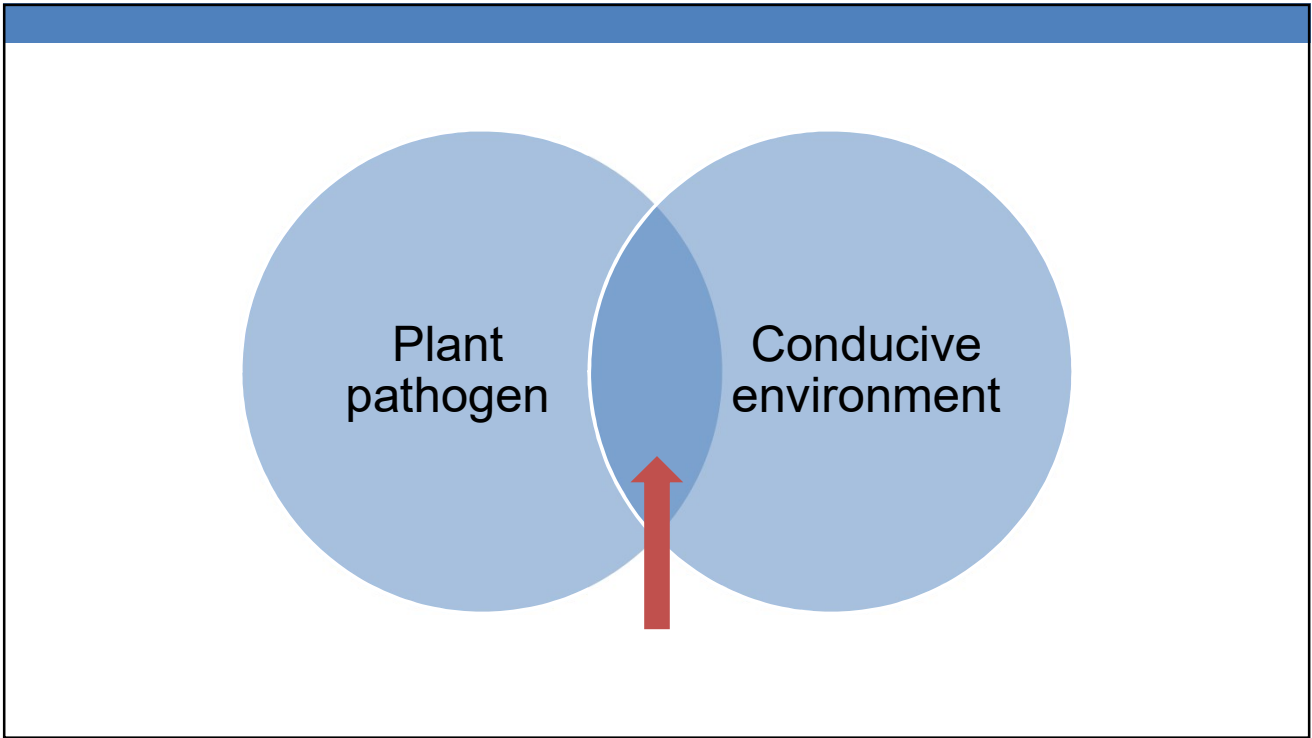
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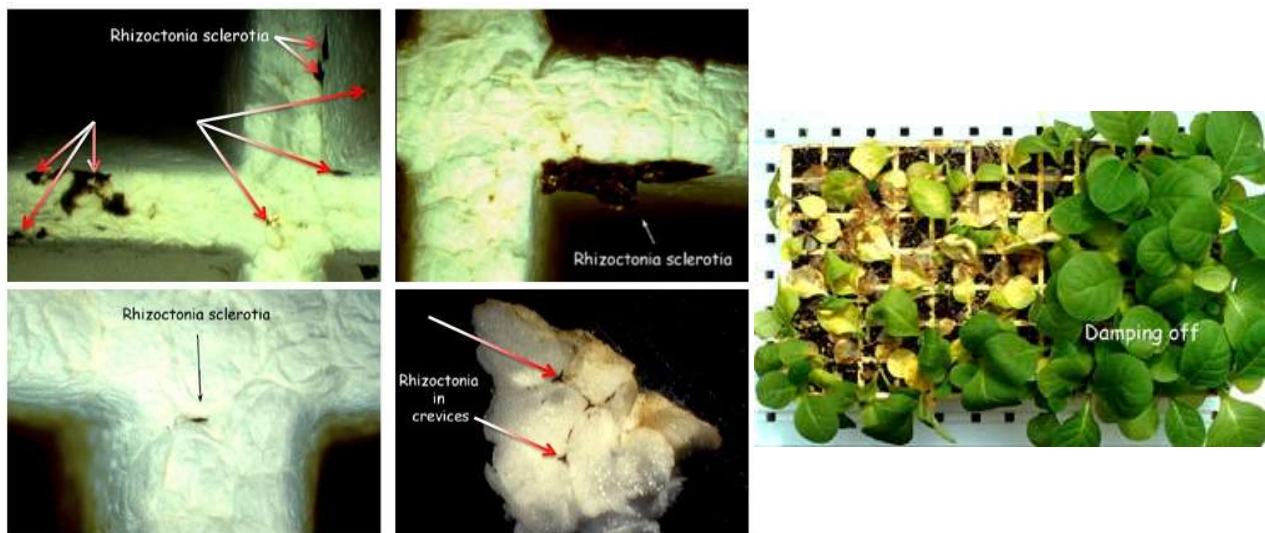
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Ensure adequate drainage



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Use sterilized containers and potting media



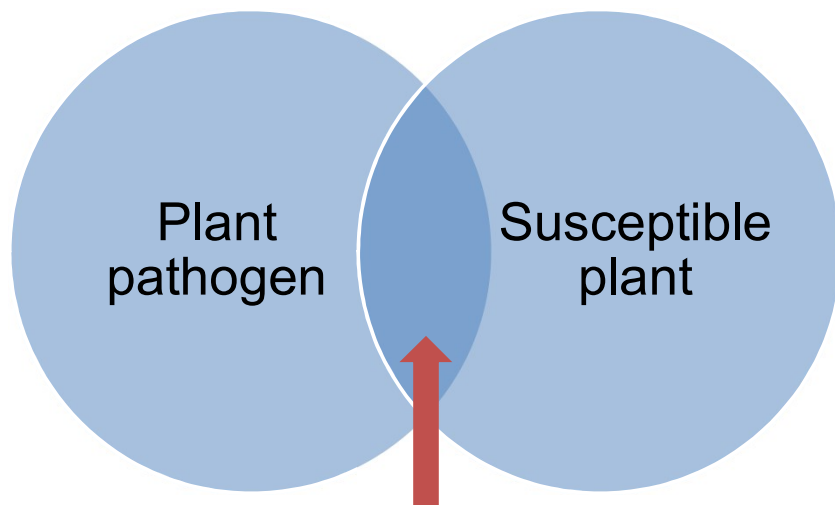
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Decontaminate recycled irrigation water



Foliar nematodes on fern

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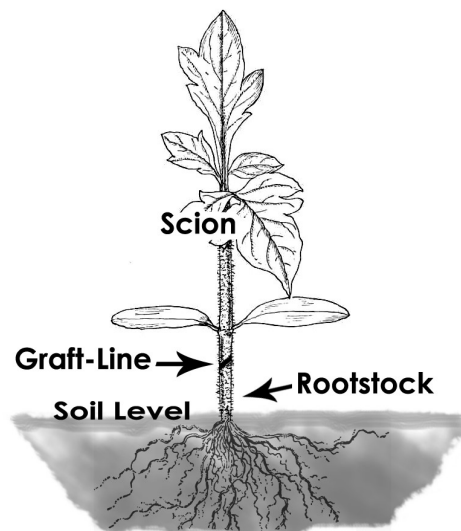
Use resistant cultivars when possible



Botrytis leaf spot on Hosta

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Grafting for resistance to soilborne diseases



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Preventative contact fungicides and plant activators



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What to look for:



Fungal pathogens

- Circular spots
- Necrosis within the lesion
- "Shot hole"
- Dry, papery feel

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What to look for:

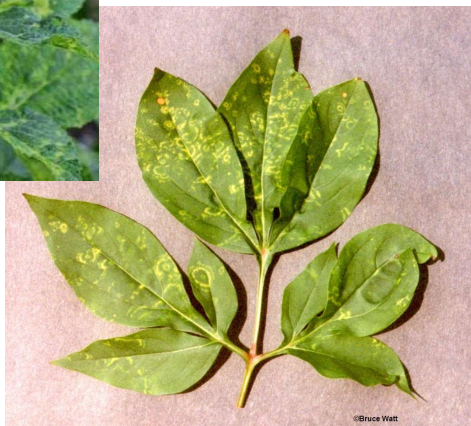


Bacterial pathogens

- Angular spots
- Yellow halo
- Slimy feel
 - As a result of polysaccharides

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What to look for:



Viral pathogens

- Mosaic and mottle
- Leaf curl
- Ringspots

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What to look for:



Soilborne pathogens

- Above ground:
 - Wilting
 - Stunting
 - Yellowing
- Below ground:
 - Roots appear soft and brown rather than firm and white

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Other potential plant problems to consider



- Disorders
 - Caused by abiotic issues
 - Ex: nutrient deficiencies
 - Appear in uniform pattern
- Insect feeding damage
 - Appears in waves
- What does “normal” look like for this plant?

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In conclusion, plants get sick too!

- If you have further questions or would like help identifying a plant disease, please contact:

- Local extension agent
- UF/IFAS Plant Diagnostic Center

