

2001 CMDC Early Season

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Early Season Diseases of Field Crops

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Early Season Diseases



Seed Decay

Pre-emergence damping off

Post-emergence damping off

Insect Vektored Diseases



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Factors Favoring Seedling Disease

- Wet conditions at planting
- Cool temperatures
- Soil compaction
- Poorly drained soils
- Conservation tillage
- Some herbicide interactions

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Soybean Seedling Diseases



Pythium



Fusarium



Rhizoctonia



Phytophthora

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Pythium root rot

Hokus Spot

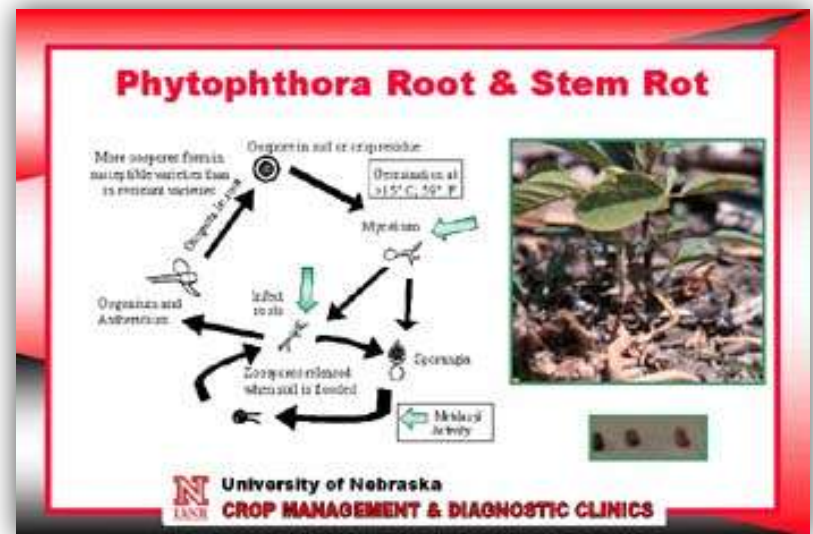
Anthracnose Leaf Blight

Stewart's Wilt: seedling phase

Early Season Corn Diseases

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Phytophthora Root & Stem Rot

More susceptible forms in many field varieties than in resistant varieties

Oospores in soil or reproduction

Oospores at 15°C, 50° F

Mycelium

Organisms and Aspartic acid

Infect to soil

Oospores released when soil is flooded

Microbial activity

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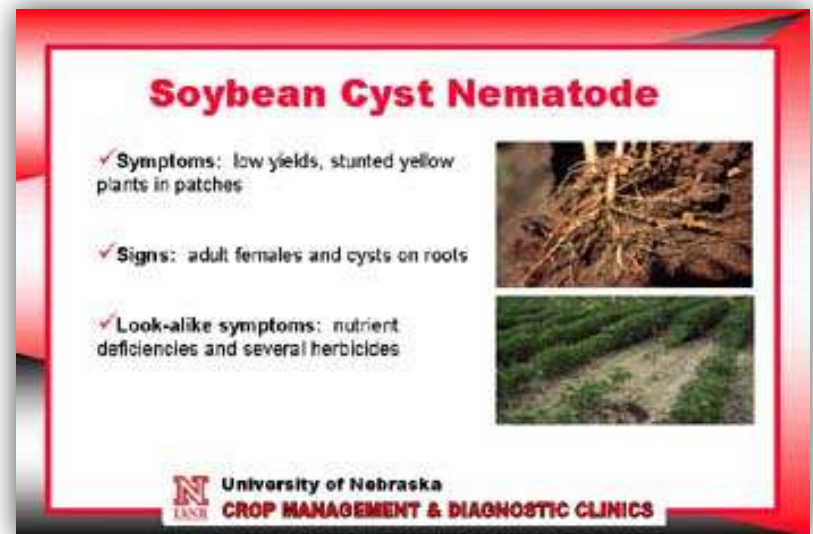


Wrap up

- What is the economic impact of seedling disease?
- Should I treat for seedling problems?
- Resistance: When does it kick in?
- Does tillage have an effect on seedling disease?
- Important Disease Outbreaks / Updates

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Soybean Cyst Nematode

- ✓ Symptoms: low yields, stunted yellow plants in patches
- ✓ Signs: adult females and cysts on roots
- ✓ Look-alike symptoms: nutrient deficiencies and several herbicides

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Bean Pod Mottle Virus

- Most common viral disease in Nebraska soybean fields
- Seed transmitted and sap-transmitted by beetle feeding




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Aggressiveness to Corn and Soybean by *Pythium* isolates from Corn-Soybean Rotation Fields

Pythium Population	Aggressiveness on corn /soybean				
	7	low/low	low/high	high/low	high/high
Soil ^a	17 ^b	38	12	4	29
Soybean ^c	0	18	19	5	58
Corn ^d	0	40	13	3	44

- ^a 24 isolates from soils
- ^b Percentage of isolates
- ^c 105 isolates from soybean plants
- ^d 30 isolates from corn plants


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