

# Field Connections

## Cold Wet Soils Continue To Pose Potential Problems For Soybeans

Be sure to include an inoculant on your soybean seed when planting. Inoculants are normally a good idea and may present more benefit than usual this year.

Saturated soils create anaerobic conditions where there is no oxygen for the rhizobia to continue living. This reduction in rhizobia count in the soil creates the greater need for inoculating your soybeans.

The weather has stayed cool this season and, consequently, soil temperatures have not warmed up much. Soybean diseases are still a threat to newly planted soybean seed and seedlings. See the details below for conditions that are favorable for disease development.

### Pythium

#### Conditions

Pythium overwinters on infected crop residue and infection often occurs when soybeans are subjected to cool (less than 60°F) and wet conditions.

#### Diagnosis

Seeds and seedlings often develop slimy rot or watery lesions, and seedlings may wilt or damp-off after emergence. Hypocotyls may be swollen, and newly infected



Photo courtesy of X. B. Yang, IA State Univ.

stem tissue often develops translucent or “watery” lesions that later turn soft and brown.

### Rhizoctonia

#### Conditions

Look for this pathogen in fields with light-textured soils and a pH of 6.6 or greater. A patch of infected plants in a roughly 10 foot wide circle would be worth a closer look.

#### Diagnosis

Lesions on hypocotyls and stems are firm, and brick red to brown in color. Plants that survive to maturity may lodge because lesions weakened the stems. Foliar blight may occur in warmer climates.



Photo courtesy of Crop-watch, Univ. of NE

### Fusarium root rot

#### Conditions

Soils with temperatures below 57°F that remain wet should be monitored for fusarium infection.

#### Diagnosis

Scout fields with slow emergence and weak, stunted, or wilted soybean seedlings. Keep an eye out for yellow cotyledons and pink spores at the base of stems in older plants. Leaves, for some infected plants, turn yellow and drop prematurely in mid-season.



Photo courtesy of Berlin Nelson, Dept. Plant Pathology, NDSU

### Phytophthora Root Rot (PRR)

#### Conditions

Phytophthora survives on infected crop residue and spreads in wet soils with moderate temperatures. This fungus may cause infection throughout the season.

#### Diagnosis

Possible seedling symptoms include wilting and death of above ground growth, discolored roots, and swollen hypocotyl. Symptoms in older plants often include rotted small roots and the characteristic brown stem discoloration from soil line upward. Leaves on dead plants are still attached.



Photo courtesy of Berlin Nelson, Dept. Plant Pathology, NDSU

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