Any disease requires three things to flourish: a viable host, suitable environmental conditions, and the presence of a pathogen. When we attempt to manage a disease, we must manage one of these three factors in order to be successful.

Step 1: Identify the disease by answering a few questions:
- What has the weather been like?
- Where does it occur?
- What does it look like?

**Common Seedling Diseases:**

**PYTHIUM ROOT ROT (PYTHIUM SPP.)** A common disease throughout the Corn Belt, Pythium, like Phytopthora, is a “water mold” that survives in the soil, but it requires saturation in order to release disease-causing spores. It affects both corn and soybeans with similar symptoms, but is a concern mostly for soybeans.

- **WEATHER:** Cool-wet conditions common early in the planting season.
- **WHERE:** This disease tends to be worse in low-lying areas of fields that are poorly drained, so areas where water had previously been standing should be a scouting priority.
- **WHAT:** Rotting roots and water-soaked lesions that become brown rot.

**RHIZOCTONIA ROOT ROT (RHIZOCTONIA SOLANI)** This disease is caused by a fungus that survives on plant residue. Rhizoctonia is a wide-spread fungus that is present in many fields across the U.S. The presence of this fungus does not always cause yield loss, but the disease can compound existing stress from injury or nematode feeding. It affects both corn and soybeans.

- **WEATHER:** Warm and wet.
- **WHERE:** Contrary to most of the other fungal pathogens, Rhizoctonia prefers well-drained soil conditions such as hillsides.
- **WHAT:** Symptoms include reddish-brown, sunken lesions forming on hypocotyls of young seedlings. A dry canker then forms, girdling the seedling and causing it to collapse.
Step 2: Disease Management

Cultural methods: The majority of all seedling diseases affect plants when they are already undergoing stress, commonly from low soil temperatures and compacted poorly-drained soils. These diseases survive in the soil for long periods of time.

- Planting into soils that are warm and well-drained is ideal, but not always possible. In a no-till situation, this could mean waiting an extra day or two to avoid overly wet or cool conditions. Conventional tillage could also be a solution if the soil conditions allow for such an operation.
- Disease management should start in the fall immediately after harvest. Many of the species of pathogens that cause these diseases survive on crop residue. A good residue management plan is crucial for decreasing exposure to seedling diseases.

Seed Treatments: Seed treatments provide chemical control of pathogens in the soil. Escalate® yield enhancement system provides protection from each seedling disease described here. For a full list of diseases and insects controlled, visit BecksHybrids.com/Products/Seed-Treatments.

Genetic Methods: Host resistance is a big part of fighting seedling diseases. Most of Beck’s seed lineup has resistance (either partial or race-specific resistance options) to help fight against many of the pathogens discussed above. If you’ve noted seedling diseases as a problem in the past, check Beck’s product guide, meet with your dealer, or call a seed advisor for advice on the best seed selection for your fields to combat the issues at hand.

Additional Resources:
2. 2017 Beck’s Agronomy Update from Chad Kalaher: https://youtu.be/I0rXZd32xVw