Conditions Ripe for Phytophthora in Soybean

We've had several calls this season from growers looking to test their crop for damage from herbicide drift or accidental application of the wrong chemical. The damage occurred fairly quickly and often to large areas or entire fields, leading many to believe a herbicide is the cause. However, that may not always be the case. Stem rot, root rot, or disorders involving Phytophthora can, from a distance, present symptoms similar to herbicide damage.

The very hot, very wet June in parts of the Midwest has created excellent conditions for soybean root and stem rot diseases. In one of the above cases, it appears a field was very quickly impacted by Phytophthora Root and Stem Rot. This disease thrives in warm, wet conditions, especially in fields with poor drainage or compaction issues.

Soybean plants can be impacted by Phytophthora throughout the entire growing season, not just at the seedling stage. Whole young plants may appear wilted, or leaves may turn yellow, wilt, and die in older plants but remain attached. Roots can develop brown lesions and start to rot. The signature symptom of Phytophthora is a chocolate-brown coloring to the stem that may start below the soil line and extend up to the lower parts of the plant. Plants can be infected at a young age, but not show the symptoms until conditions are ripe. Once this occurs, damage can occur rapidly.

Dark brown stem coloring caused by Phytophthora. Image credit Michigan State University.

Unfortunately, the best options to fight this disease are all performed at or before planting. Strategies for the management of Phytophthora diseases should be holistic to maximize efficacy, sustainability, and stewardship. For example, the use of resistant varieties, fungicide seed treatments, tillage or any other field modification to improve drainage all used in combination will be beneficial to reduce and prevent disease incidence in the short and long term. Proper soil fertility and plant nutrition is crucial to help keep your crop healthy to fight off the infection. Phytophthora is always present in soil, but the severity of damage from year to year depends on the variety's susceptibility and the environmental conditions.

To learn more about Phytophthora and other root and stem diseases, check out your state's IPM website for disease diagnosis tips. You can also contact a local CCA or agronomist to assist you in determining if the damage is due to disease or herbicide damage. If testing is needed to confirm the cause after an initial diagnosis, contact your nearest Waypoint location and speak with one of our agronomists for more help.