

David Hallauer
District Extension Agent, Crops & Soils

Crown Pathogens in Corn

It's still early in the corn growing season, but at some point – even through the end of the season - we might look at a stand and ask: why am I missing plants or why are some plants yellowing? Even worse: why didn't this farm yield like we hoped or what caused this lodging? With the myriad of factors that *could* lead to any of these issues, it can be difficult to pinpoint just one. Complicating things is the amount about crown rots we just don't understand.

One of the reasons we pay such close attention to soil temperature, utilize seed treatments and make sure we're planting in good conditions is because of diseases like crown rots. Caused by pathogens including Fusarium, Rhizoctonia, Pythium, or others, these diseases can affect corn plants early in the season with symptoms only noticed until much later. Seed treatments can do an excellent job of combatting them, but when conditions are right for a specific disease to develop (temperature/moisture/seed treatment/etc...), problems can arise.

Unfortunately, our understanding of crown rot pathogens is mixed at best. Early in the season, plants may be stunted, wilted, or have yellowed lower leaves. When plants are evaluated, they may exhibit brown/black root discoloration or dark brown crown tissue. These symptoms, however, can also be indicative of nutrient deficiencies or herbicide injury. Careful field evaluations are in order when stand issues arise.

One challenge with these pathogens is that they can infect plants early, but not show symptoms until later. So, while it's difficult to know the exact interaction of soil moisture or temperature or other variable that *might* predispose a plant to infection and disease development, we *do* know stress conditions tend to favor disease manifestation – whenever it may occur.

We're going to take growing conditions we get and manage the best we can, but that management *should* include early season scouting to ensure stand losses aren't an issue. It also means keeping in mind that later season issues might have started much earlier than we thought.

If early season stand issues do arise and you want to rule out pathogens, the KSU Plant Disease Diagnostic Lab can help. They can test to help determine if plant pathogens are a part of the issue, or if other factors need to be given greater evaluation. Contact any of our Meadowlark Extension District Offices if you want to learn more about their services and associated fees.