Soil Organisms Can Attack Seedlings In Cool, Wet Conditions

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An abundance of soil moisture following the rough '09 growing season, and a winter that simply won't cut off the precipitation, likely mean wet soil come planting time. Add some cool conditions and life can get really interesting. Cold clammy conditions are, of course, not conducive for the germination of seed, but those conditions also mean trouble because the longer seed/seedlings sit in the ground the longer they can be "chewed" on by soil microorganisms. At the head of this soil organism onslaught stands "pythium", a disease that can attack corn and beans from planting to the early vegetative stages.

Pythium is a soil born fungus that survives on crop residue. In beans, infected seed may be "moldy" and fail to germinate. For those seeds that do germinate, the hypocotyl and root may be soft and rotted black. Corn also can be attacked by the pest and may have water soaked black regions that exist on the root system as well. Corn sometimes recovers when a second "tier" of roots emerge from the plant as it matures. However, this early season stress does take a large bite out of yield potential.

Small low lying areas or entire fields may be hit given enough moisture, and rotation does not work because pythium has a broad host range. Taking care to plant under conditions that are conducive to the development of the plant (i.e., not planting too early or into excessively wet or cold soil) can ward off development of the disease. Seed treatments can help, especially if the crop meets the following conditions. First, early planting of either corn or beans, meaning corn planted during the first week of April or beans planted before the first week of May, will likely mean a pay off from seed treatment. Second, a seed treatment will likely pay off if a history of seedling disease or emergence problems exists in that field. Third, a seed treatment will likely pay off in no-till or conservation tilled systems since pythium favors crop residue and the cooling effect of that residue on the soil. (Note: This is not a reason to discard no-till or conservation tillage.) Finally, "gumbo-type" soils or other soils that typically retain vast amounts of soil moisture may see a pay off from the standard seed treatment. Δ