

## Are You Eating My Crops? 9: Late wilt of corn

Late wilt of corn (*Magnaportheopsis maydis*) is one of seven plant pathogens listed as a 'Select Agent' by the CDC because it has the potential to pose a serious threat to plant health. We are almost at the end of our 12-month series called 'Are you eating my crops?' Individual pests chosen for this series have not yet been reported in Texas, but are on the 'Watch List' due to their high level of pest importance or risk due to host availability. During this series, we have covered several different crop pests, and what they look like.

*Magnaportheopsis maydis* is a soil- and seed-borne fungus that causes vascular wilt disease of corn just before maturity. The pathogen penetrates the root of its host and moves upward, blocking water transport and causing the host to wilt. During early stages of infection, root tips of corn are stained red, and 2-4 mm necrotic lesions appear on the roots. Aboveground plants do not generally exhibit symptoms until rapid wilting of infected plants occurs, progressing from bottom to top parts of the plant. Eventually, leaves lose color, developing a scorched appearance and the stalk becomes reddish brown. Advanced stages of infection leave the plants lower portions of the stalk dry, shrunken, and hollow. It can infect and colonize kernels, resulting in poor development, and rot of seeds and seedlings. Secondary infection by other organisms frequently can occur and progresses into stalk rot, which appears soft and wet, and is often accompanied by a sweet smell. Young plants are the most susceptible. The host typically becomes resistant to infection about 50 days after planting.

States in the southern and southeastern regions, as well as states that produce large amounts of corn, have the most suitable climate for *M. maydis* development and are particularly vulnerable. States with the highest risk of establishment of *M. maydis* are Arkansas, Illinois, Indiana, Mississippi, Missouri, Tennessee, and Texas. The most likely pathway of entry for late wilt of corn is through transport of infected *Zea mays* host seeds. This pathogen is known to survive in seeds for ten months or longer. Corn is the primary host. The pathogen can infect other plant species, but economic damage is only reported in corn.

*Magnaportheopsis maydis* may not be distinguishable from stress factors such as lack of water or nutrients or other fungal pathogens that cause stalk rot on corn in the U.S., including *Fusarium graminearum*, *Macrophomina phaseolina*,

and *Stenocarpella maydis*. Molecular identification is required for final confirmation of this pathogen.

If you have question or concerns regarding the headliners, OR you believe you have identified a late wilt of corn infestation, contact [invasives@shsu.edu](mailto:invasives@shsu.edu) for further instructions.



Late wilt diseased field symptoms. Drying out ascends upwards in the plant including leaf yellowing and dehydration, and color alteration of the lower stem and internode. Credit: Degani and Cernica, 2014 .jpg



*Magnaportheopsis maydis* infection on corn. Credit: Penn State Department of Plant Pathology and Environmental Microbiology.