

Host specialization of *Fusarium oxysporum* endophytes from tomato

Abstract:

The fungus *Fusarium oxysporum* can be found in soils worldwide, living on organic material in the soil, colonizing the tissues of healthy plants as an endophyte, or infecting and causing disease on plants. *F. oxysporum* has mainly been studied as a plant pathogen, as it causes disease on many important agricultural crops. However, more research on endophytic *F. oxysporum* is needed to completely understand the biology and pathogenicity of this fungus. This project will look at the host-specificity of endophytes from healthy tomato plants. Populations of endophytes and of soil saprobes in tomato fields will be compared, and I hypothesize that endophytic populations colonizing healthy plants are specialized to that host and are distinct from the diverse populations found in soil. Additionally, the evolutionary relationships between pathogenic populations causing disease on tomato and non-pathogenic populations in tomato fields will be investigated. Overall, this research will contribute to our knowledge about the evolution of pathogenicity and host-specificity in this common and agriculturally important fungus.