Mid-Atlantic States Mycological Conference (MASMC)
University of Tennessee – Knoxville
12-14 April 2019

ABSTRACTS – Posters

Identity and disease cycle of a smut fungus on wiregrass in a longleaf pine-grassland ecosystem in the southeastern USA

Abeer Alqurashi [1], Julia Kerrigan[1], Kyryll Savchenko[2], Joan Walker[3]
[1]Department of Plant and Environmental Sciences, Clemson University,[2]Biological Sciences, Butler University, [3]USDA Forest Service, Southern Research Station, Clemson, SC

A smut fungus that hinders wiregrass restoration efforts in longleaf pine-grassland ecosystems is being investigated. These ecosystems are unique to the southeastern USA; they are characterized by an open canopy of primarily longleaf pine (*Pinus palustris*) and a dense ground layer of herbaceous species. Wiregrasses, *Aristida stricta* and *A. beyrichiana*, are perennial bunchgrasses and the dominant grass found in longleaf pine forests. Once the predominant forest type in the southeast, longleaf pine forests have been reduced to a fraction of area they once covered due to land use changes and fire suppression. Seeds of *Aristida* species are required for regeneration efforts, but seed production has been affected adversely by a smut fungus. Smut fungi can be damaging pathogens of grasses and typically infect inflorescences of host plants, replacing the seeds with teliospores. Our objectives are to identify the smut species from *A. beyrichiana* and *A. stricta*, and to investigate the disease cycle. Based on microscopic examinations and comparisons of DNA sequences of the ITS, LSU, and GAPDH regions, it is a previously undescribed species of *Langdonia. Langdonia* is a monophyletic genus found on *Aristida* species, and the genus description will be amended to accommodate this new species. Investigations are underway to study infection and colonization of the host by this smut pathogen. Understanding this host-pathogen system will help management efforts to increase the availability of *Aristida* seeds.