Name: Lindsey Hoffman

Email Address: lh481@scarletmail.rutgers.edu

Affiliation: Rutgers University

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Abstract Title: Quantification of Yield Losses Associated with Anthracnose Infection of Switchgrass

Abstract (250 words or less): Anthracnose (caused by Colletotrichum navitas) has been identified as a destructive plant pathogen that may negatively impact the cultivation of switchgrass (Panicum virgatum L.) for cellulosic ethanol production. Information is lacking, however, on the amount of aboveground biomass that will be lost due to anthracnose infection. Therefore, the objective of this study was to determine the influence of anthracnose on the quantity of biomass harvested at the end of the growing season. Seeded plots (5.5 x 1.8 m) were established with 16 switchgrass cultivars in 2013 at the Rutgers Plant Biology and Pathology Research and Extension Farm in Freehold, NJ. Treatments consisted of spraying half of each plot (2.75 m) with fungicides in order to control anthracnose. Measurements included visually rating infection (1-10 scale, 1 = 100% anthracnose and 10 = 0% or no anthracnose) along with determining biomass yield at the end of the growing season. Significant differences in susceptibility to anthracnose were detected among the cultivars evaluated. Preliminary data suggests that fungicides may reduce anthracnose severity of susceptible cultivars with little effect on plants exhibiting increased resistance to infection. Overall, the cultivar Forestburg was most susceptible to anthracnose and had the greatest loss in biomass compared to all other cultivars in the study. Altogether, this research indicates that the primary method for mitigating yield losses will be to breed cultivars with improved resistance to anthracnose infection.