Evaluating Florida-07 for Leaf Spot Tolerance.

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Florida-07, a peanut cultivar recently released by the University of Florida, displays classic symptoms of leaf spot susceptibility, having numerous lesions and heavy defoliation. However, it has been observed to produces good yields even with severe symptoms of leaf spot. Therefore, our hypothesis is that Florida-07 possesses tolerance to leaf spot. To test this hypothesis, Florida-07 was compared to a known leaf spot susceptible cultivar, AP-3, and a known resistant, York. Experiments were conducted in Gainesville, FL in 2008 and Marianna, FL in 2008-2009 seasons. For all years and locations, late leaf spot (Cercosporidium personatum (Berk and M. A. Curtis) Deighton) appeared to be the predominant foliar pathogen. The experimental design was a randomized complete block with a split-plot treatment arrangement and three replications. The cultivars were assigned to the sub-plots and fungicide treatment (full-season vs. no spray) was assigned to the main plots. Data collected included area under the disease progress (AUDPC) curve for visual leaf spot rating (Florida 1-10 scale), lesion/leaf percentage, lesion density, and average lesion area. Following harvest, pod yield and seed grade were determined. In regard to visual rating, lesion/leaf percentage, and lesion density, the rate of disease progression (AUDPC) was the same in sprayed and non-sprayed York, sprayed AP-3, and sprayed Florida-07. Disease progression was also observed to be the same in non-sprayed AP-3 and non-sprayed Florida-07, but at a rate significantly faster than the aforementioned cultivar*treatments. Regardless of cultivar*treatment, lesion growth occurred at the same rate. Based on these data, we conclude that Florida-07 and AP-3 possess the same degree of susceptibility to late leaf spot disease. The impact of leaf spot on pod yield of Florida-07 was similar to its impact on pod yield of AP-3 in two out of three tests, but in the third test, leaf spot impacted pod yield of Florida-07 (968 lbs/A loss) less than it did AP-3 (1778 lbs/A loss) (p>t=0.0524). On average, however, yield loss (sprayed minus non-sprayed) of AP-3 (1440 lbs/A) was not different than that of Florida-07 (1026 lbs/A). Therefore, we can also conclude that in some environments, Florida-07 may provide a degree of tolerance to late leaf spot disease that AP-3 does not possess. However, on average, these results suggest that Florida-07 does not possess significant tolerance to leaf spot.