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National Peanut Board - 2013 Final Report

Title: Assessment of the Importance of Rhizoctonia Aerial Blight of Peanut in Arkansas

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Objective 1: Evaluate the pathogenicity of *Rhizoctonia solani* AG1-IA on peanut leaves, petiole, stems and shoots in a field survey and greenhouse bioassay. Weather conditions were favorable for aerial blight development at pegging and pod formation during the 2013 growing season. Aerial blight was identified in two of the eleven fields in this survey, which were in the first year of peanut production thus; inoculum was at least maintained on the previous year's crop of soybean or corn, other host of *R. solani* AG1-IA. In each field only the leaves and petioles were infected (Fig. 1). A wilted peanut shoots (growing tip) was rarely observed on severely infected plants. In a greenhouse bioassay lesion development was observed on leaves and petioles of runner peanut cv. GA 09B and FL 07 with no visible lesion on peanut stems or pegs thus, leaf defoliation is likely the most significant concern related to yield loss. Alternately, *R. solani* AG1-IA readily infected soybean stems, leaves and petioles. At harvest there were no significant pod rot issues and pod load was visually similar to areas where disease pressure was absent. Two to three prophylactic fungicide (tebuconazole and flutolanil) applications during the growing season likely suppressed the development of aerial blight.



Figure 1. Aerial blight caused by *Rhizoctonia solani* AG1-IA.

Objective 2: Survey the distribution of aerial blight of peanut and how irrigation practices and conditions that may impact disease severity. Nine furrow and two pivot irrigated fields were inspected in 2013 for aerial blight. Typical symptoms of aerial blight were identified in one field within each irrigation system. A higher disease incidence (20' x 20' foci) and disease severity (20% of plants) was observed in the furrow irrigated field compared to only four to five plants infected the pivot irrigated field. This increased severity seems to be commonly associated in furrow irrigated irrigation systems, which is ~ 80% of irrigated fields in Arkansas. Disease development increased slightly in the furrow irrigated field in September, but fungicides applied late (tebuconazole) were effective at suppressing disease development. Therefore pod load per plant was similar among diseased and non-diseased areas in

the fields. This objective will continue in 2014 as more fields will be in their second year of peanut production and planted back in fields where aerial blight was first observed in 2012 in Arkansas.