

Screening for Resistance to *Sclerotinia minor* (Jaggers).

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The Texas A&M AgriLife Research peanut breeding program has been developing breeding lines and screening for *S. minor* resistance for almost 30 years. Since 1986 a 12-acre area with high levels of the soilborne fungus have been used as a screening nursery at the Texas A&M AgriLife Research and Extension Center at Stephenville, Texas. All breeding lines in the program are screened in one row, 3.1m replicated plots for multiple years. Plots are rated on a 0-10 scale, where 0 is no disease and 10 is all plants dead. Plots are planted late in the planting season to ensure that plants are still actively growing when average soil temperatures reach 28° C (82° F), optimum for *S. minor* growth. *Sclerotinia minor* isolates were obtained by culturing sclerotia collected from soil in diseased peanut fields at the Texas A&M AgriLife Research and Extension Center at Stephenville on potato-dextrose agar (PDA). Cultured plates were incubated at 28° C (82° F) for 14 days. Four petri dishes with colony diameters of 4 cm or greater were used to inoculate approximately 6800 g (15 lbs.) of autoclaved whole oats. The inoculated oats were then incubated at 28° C (82° F) for approximately 14 days. Once sufficient fungal growth was observed the inoculated oats were then spread out and dried for 7 days and ground to allow for application. All plots are inoculated with approximately 35g of *S. minor* inoculant and subsequently irrigated as needed in the evening to increase relative humidity and promote fungal growth.

All trials include at least 2 checks. The Langley variety released in 1987 is highly susceptible to *S. minor* and serves as the susceptible check. The breeding line Tx901639-3 is a sister line of the resistant variety Tamrun 98 and serves as the resistant check. The 2018 season saw an extended late season rainy period resulting in severe *Sclerotinia* infestation. Ideally, rating would have been conducted at 2-week intervals 14 days after inoculation, but due to the wet conditions this was not possible. Plots were rated on 10/7/2017 and 11/6/2018. Average infection for Langley plots during the early rating were 3.02 per plot and .34 per plot for the Tx901639-3, the resistant check. No statistical differences were found in the early rating. The late rating averaged 8.3 for the susceptible check and 4.8 for Tx901639-3. Statistically significant difference was found in this set of ratings and will be presented.