Development of an Introgression Pathway for Resistance to *Sclerotium rolfsii* Sacc

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We have previously reported about an introgression program in which we are developing a pathway to introgress genes for resistance to *Sclerotium rolfsii* Sacc. from *Arachis stenosperma* Krapov. and W.C. Gregory into the cultivated peanut. Resistance was reported in HLK 410 (PI 338280) by researchers at NC State University in Raleigh, NC. We attempted several crosses directly between *A. hypogaea* and A-genome *A. stenosperma* but were not successful in developing viable hybrids. Crosses with several different B genome parents were attempted without success but we were successful in crossing *A. linearifolia* Valls, Krapov. and C.E. Simpson (VPoBi 9401) with *A. magna* Krapov. W.C. Gregory and C.E. Simpson (KGSSc- 30093). We had previously crossed *A. stenosperma* and *A. linearifolia* so we took the partially fertile hybrid between the two accessions (410 X 9401 = 53.9% pollen stain), and crossed that hybrid with 30093, producing a highly sterile three-way hybrid which was then chromosome doubled. The amphiploid was then crossed with Tamrun OL11 and the F₁ hybrid produced more than 1000 seeds. These F₂ embryos were space planted in a naturally infested field and at harvest plant selections were made for resistance to *S. rolfsii* disregarding agronomic traits. The selected progeny were grown in plant rows the following year in the infested field. From these plant rows two lines were selected as being somewhat resistant. Progeny from these two lines were backcrossed to Tamrun OL11 and the BC₁F₁ was grown for seed production. A total of 55 BC₁F₂ plants were grown in the greenhouse from December 2013 to May 2014, and the progeny planted as plant rows in the infested field again in summer of 2014. Selections will be made in October of 2014 which will be used for a second backcross to the productive *A. hypogaea* parent.