

## ***Arachis stenosperma*, New Sources of Nematode, Rust and Leaf Spot Resistance Incorporated Into Peanut Elite Lines**

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Root-Knot Nematode causes substantial yield losses, reduces pod and grain quality, affects plant growth and increases production cost; Late Leaf Spot is one of the most damaging diseases of peanut worldwide; and Rust is a devastating fast-developing disease especially in hot, humid tropical growing conditions. Wild diploid species of peanut harbor very strong sources of resistance to these pests and diseases. Over the last few years, we have explored the utilization of the wild species *Arachis stenosperma* as a source of resistance for the peanut crop. First a peanut-compatible allotetraploid was developed from *A. stenosperma* (A genome) and *A. batizocoi* (B genome *sensu lato*). Then we backcrossed for three generations with elite peanut lines, using DNA markers to maintain two loci controlling nematode resistance, and selected genome regions that harbor clusters of disease resistance genes. The resulting population of about 300 plants was genetically profiled. Depending on lineage, plants harbored between 2 and 20% genetic contribution from the wild species. Assays showed that the population harbors resistance, not only to nematode, but also late leaf spot and rust, even in lineages with a low contribution from the wild species. The segregating progeny, that have cultivated peanut growth habit, pod type and seed size, are now being used to genetically identify the wild genome regions that confer the resistances. These new sources of resistance have great potential to be incorporated into new peanut varieties, reducing the need for plant protection products and increasing yield.