

## **Development and Characterization of Interspecific Peanut Hybrids for the Enhancement of Genetic Diversity within Cultivated Peanut and Deposition into Germplasm Banks.**

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Cultivated peanut, *Arachis hypogaea*, is known to have gone through a genetic bottleneck event between 8,000 – 10,000 years ago. Spontaneous chromosome doubling of an interspecific cross between 2 distinct wild species, *A. duranensis* and *A. ipaensis*, is believed to have constituted this bottleneck. There are over 80 wild species belonging to the section *Arachis* and nearly all are diploid. These wild species contain many valuable resistance traits and tolerances that should be utilized. There is also potential of other value-added traits such as drought tolerance, increased yield, and oil content, flavor, etc. Due to the diploid nature of most wild peanuts, introgressing these traits into cultivated peanut is both difficult and time consuming. A strategy has been in place for some time to create interspecific crosses of the wild species and doubling their chromosomes, thus creating a new fertile allotetraploid, but this has been done in a random manner. Here we present a strategy for a structured production new allotetraploids, based on the phylogenetic placement of the diploid parents, thus covering as much as possible the genetic diversity of the section *Arachis*. These allotetraploids are being genetically, phenotypically, and cytogenetically characterized and deposited in public genebanks. It will be of great benefit to peanut breeders to have at their disposal a variety of these new fertile allotetraploid peanuts representing much of the Section *Arachis* genetic diversity to use in their programs.