**Phenotypic, Biochemical, and Genetic Characterization of the U.S. Peanut Core Collection**

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The US peanut core collection is a valuable germplasm resource for the peanut community. The core collection was constructed in 1993 to minimize genetic redundancy, provide a smaller subset for peanut researchers to identify important agronomic traits for genetic improvement of cultivated peanut, and reveal other accessions across the entire germplasm collection that contains a trait of interest. This collection contains the major genetic diversity for each of the 4 peanut market types – Valencia, Spanish, Virginia, and Runner. Few studies have attempted to characterize the lines within the core; therefore, a more complete evaluation and characterization of this collection should be conducted. The aim of this on-going study was to evaluate critically important traits to breeders and growers such as yield, grade, standard peanut descriptors, morphological characterization including subspecies (fastigiata or hypogaea) classification, biochemical parameters such as protein, oil content, and fatty acid composition and carry out genetic profiling (SSR and SNP genotyping). Furthermore, it is necessary to periodically regenerate to ensure an adequate supply of highly viable seeds are available in the USDA collection for distribution especially due to the foreseeable demand on this germplasm in light of the current genomics effort. The entire collection was grown under field conditions in 2013 using an augmented design that integrated replicates of the mini core and commercials standards of each market type. We will report preliminary findings to date and plan to repeat the entire study in 2014.