

Development of an Array of KASP Markers for Screening Peanut for Hybridity and for Varietal Identification.

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A rapid screen for distinguishing true hybrids from inadvertent selfs, and for identification of peanut varieties is needed for use by peanut breeders. SSR markers have been developed for validating hybrids, but the small difference between bands and limited number of markers has made this difficult on rapid agarose gels. As many SNPs have been developed, we have converted a limited number of SNP markers from the Arachis Axiom Array chip and Rad-Seq data to KASP markers. From a total of 72 of these SNPs plus SNPs for FAD2A, FAD2B, and resistance to Ma-1, we developed a set of 24 KASP markers. These were tested initially against 24 tetraploid peanut accessions including varieties and related breeding lines, and it was found possible to distinguish all accessions from each other; some varieties by 6 to 10 markers, closely-related sister lines by at least 2 markers. Testing against common peanut varieties, sister breeding lines, and parents of crosses is underway to determine the utility of this marker set. It is hoped that this will provide a rapid method for validating hybrids and identifying varieties.