Comparison of FAD2 KASP Markers and Near Infrared Spectrometer for Selection of the High Oleic Oil Trait in Peanut

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Seeds of breeding line accessions grown in Texas in 2020 and 2021 were tested for the high oleic trait using a Thermo Scientific Nicolet iS10 near infrared (NIR) spectrometer (Thermo Fisher Scientific, Waltham, MA) and FAD2 KASP markers. The objective of our study is to identify if there is an association between the testing results obtained from the NIR spectrometer and FAD2 KASP marker methods. Seed chips were extracted for DNA that was then quantified using the Quantifluor dsDNA System (Promega, Inc, Madison WI) kit on a Tecan Infinite F200 plate fluorometer. Genotyping for the *Ma-1* locus was performed using KASP markers developed by Chopra *et al.* for the *FAD2A* and *FAD2B* alleles. PCR reactions were run on a Roche LightCycler 480 II, and breeding lines were grouped using the LightCycler software. High oleic checks (OLin and Schubert) were scored as high oleic lines (YY). Low oleic checks (Tamspan90 and 55-437) were scored as low oleic lines (XX). Breeding lines were scored as belonging to one of these groups or intermediate (mid oleic (XY)). High oleic, mid oleic, and low oleic breeding lines for oleic acid were observed. These lines were evaluated by the above methods to determine the concordance of the two of them.