Marker Analysis of Breeding Lines for High Oleic Oil and Nematode Resistance

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Breeding line accessions were grown in replicated trials in Texas in 2019, 2020, and 2021. Seeds of the accessions were screened for high oleic trait using a Thermo Scientific Nicolet iS10 spectrometer (Thermo Fisher Scientific, Waltham, MA). High oleic seed chips were extracted. DNA was quantified using the Quantifluor dsDNA System (Promega, Inc, Madison WI) kit on a Tecan Infinite F200 plate fluorometer. Genotyping for the *Ma-1* locus (Burow *et al.*, 1996) was performed using Kasp markers for the POA_A9:5,944,580 locus (Clevenger *et al.*, 2017). PCR reactions were run on a Roche LightCycler 480 II. Accessions were grouped using the LightCycler software. Susceptible checks (Tamrun OL07 and CC270) were scored as susceptible (XX). Resistant checks (NemaTAM and Tx071304) were scored as resistant (YY). Accessions were scored as belonging to one of these groups. Resistant, susceptible, and segregating breeding lines for root knot nematode were observed, and lines with high oleic and nematode resistance were selected.