High Throughput Seed Sorting for Oleic Acid Concentration in Peanut Breeding Populations using QSorter Technology from QualySense.

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The peanut industry requires high-oleic fatty acid seed oil concentration for some products, and normal-oleic fatty acid concentration in others. Peanut breeders therefore, are tasked with developing high-oleic cultivars as well as normal-oleic cultivars. Selection for high-oleic acid concentration, previously carried out using gas chromatography to measure oleic acid concentration, has been improved using near-infrared technology which non-destructively estimates oleic acid concentration. It has also been made easier and cheaper with the development of highly accurate and inexpensive DNA molecular markers. A machine that has recently been developed by QualySense, the QSorter, shows promise in high throughput measurement and sorting of high-oleic seeds from segregating breeding populations, improving throughput and potentially driving prices down further. In this study, we evaluated the utility and accuracy of the machine on F_1 and F_2 populations, and are currently refining sorting thresholds.