

Sound Splits as Influenced by Seed Size for Runner and Virginia Market Type Peanut Graded on a Reciprocating Sheller

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The objective of this study was to examine peanut (*Arachis hypogaea* L.) kernel percent sound splits as a function of sound mature kernel seed size when graded on a reciprocating sheller. Data was compiled from a total of 137 field trials conducted in the Virginia-Carolina region from 2005 to 2020. Runner and Virginia peanut market types were graded according to USDA standards using sheller screens with upper (red) grid sizes of 26/64 x 3/4" and 34/64 x 1", respectively. Grade data per market type was analyzed separately. Among runner market types, percent sound splits increased linearly with increasing seed size at the rate of 1.3% per 100 seed/lb ($P < 0.0001$). While the estimated slope parameter for this relationship among Virginia market types was not significantly different from zero ($P = 0.92$), corresponding extra large kernels linearly increased with seed size at 7.1% per 100 seed/lb ($P < 0.0001$). Runner market types with 600 seed/lb were estimated to have a 50% probability of a 2.9% or greater increase in sound splits compared to runner seed with a count of 830/lb, equivalent to a potential deduction increase of $\geq \$2.40/\text{ton}$. For both Virginia and runner market types, seed weight linearly increased with pod weight at 16.8 and 15.8% ($P < 0.0001$), respectively. Results from these studies may be used as a starting point to suggest runner seed sizes above which larger sheller screen size utilization in line with USDA grading practices may be warranted to reduce mechanical sound splits during grading on a reciprocating sheller.