The Effect of Cultivar, Maturity, and Curing Conditions on Seed and Milling Quality.

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Several of the recent releases of runner peanut cultivars from the public breeding programs for production in the southeastern U.S. have had larger seed size distributions than some of the previously used cultivars. The objectives of this study were to determine the effects of: cultivar, maturity and curing conditions on the milling and seed quality of some of the large seeded runner type peanuts. Four runner cultivars were used in the study. The large-seeded runner cultivars used in the study were ‘Georgia 06G’ and ‘Florida 07’. The two conventionally-sized runner cultivars were, ‘Georgia Green’ and ‘Georgia Greener’. A hull scrape maturity sample was secured at digging. All peanuts were planted 05 May 2010 and dug on seven different harvest dates beginning 118 days after planting (23 Sep 2010). After partially curing in the windrow, peanuts were cured using two different drying treatments to either 11 or 10% moisture content. Peanuts were dried using air heated 8C above ambient, but no higher than 35 C or 22 C above ambient but no higher than 41 C. Samples were cleaned and shelled. Three subsamples consisting of a composite of jumbo, medium, and No. 1-sized kernels from each cultivar x harvest x drying temperature x cutoff moisture sample were used to determine germination percentage and a vigor index. Sixty-seed samples were planted on 19 May 2011 and plant stand counts were taken at 7, 14, 21, and 28 days after planting. After 28 days, all plants were removed from the soil, washed, then the dry matter weight/plant was determined. Cutoff moisture had no significant effect on either seed germination or the vigor index. Cultivar, maturity index (total of black + brown pods) had significant effects on vigor index, while germination was affected only by cultivar. When averaged over all harvest dates, Georgia 06G, Georgia Green, and Georgia Greener had germination percentages of 96%. Florida 07 averaged 95% germination. The germination percentage for all cultivars was above 95% for the first 5 harvests then fell to less than 88% for the last harvest on 02 Nov 2010. The average vigor index at harvest 1 was 819, reached a maximum of 889 on the second harvest and gradually decreased to 794 on the sixth harvest and sharply decreased to 577 on the last harvest. While drying temperature had no significant effect on germination or vigor index, the Georgia 06G and Georgia Greener that were cured at the higher temperature had significantly lower vigor index (806 and 791, respectively) compared to the vigor index for the Florida 07 (872) and Georgia Green (908) that were cured at the higher temperature.