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2015

NATIONAL PEANUT BOARD/SOUTHEAST PEANUT  
RESEARCH INITIATIVE  
FINAL REPORT FOR WORK  
DONE UNDER RESEARCH AGREEMENT

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**Final Report**

INSTITUTION: University of Georgia

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PROJECT TITLE: Examination of the impact of peanut maturity on emergence, vigor, and subsequent life history traits

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RES. AGR. NO.: PROJECT LEADER: Grey

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EXPIRATION DATE: December 31, 2015 NPB CONTACT: Bob Parker/Maria Mehok  
NPB Control NO.:

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**Laymans summary:**

In 2015 an experiment was conducted to harvest peanut at 125, 132, and 141 days after planting representing very early, early and optimum harvest timing, corresponding to 2100, 2300 and 2500 growing degree days (GDD). Pods were collected for other experiments and testing, but we evaluated seed germination and vigor. The consideration being that immature seed may have the ability to germinate, they are not quite as well formed as mature seeds. These plants can then have limited growth and development in subsequent seasons. Testing of 2015 seed by maturity class, yellow to black, indicated that less mature seed did have lower germination and vigor under low temperatures. When subjected to cool temperatures there was a reduction in germination as GDD increased even at optimal digging times. These data indicate that pinpointing the optimum time to dig peanut for seed is very difficult when based solely on GDD.

**Final Report:**

The determination of vigor using the thermal gradient table showed consistent treatment differences by maturity classes for peanut harvested at 125, 132, or 141 days after planting. Peanut seeds ability to germinate is determined early during formation. When subsampled across four temperatures (60, 66, 75 and 84 F), GDD accumulation had an effect on cumulative germination with respect to maturity class. Data indicated that germination was similar for mature and immature seeds at different harvest timings but cooler temperatures caused variability. There can be inconsistency with differences in maturity for germination and vigor and this is to be expected as peanut is an indeterminate plant. By conducting this research, it is clear that much greater emphasis must be placed on identifying other means of establishing optimum peanut harvest timing for seed vigor other than GDDs alone.