

## High and Normal Oleic Runner-Type Peanut Cultivar by Year Effects on Seed Germination and Vigor Response to Temperature

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Experiments conducted from 2013 to 2018 evaluated the cultivar by year effects on breeder seed germination and vigor of five high oleic (HO) and five normal oleic (NO) runner-type peanut (*Arachis hypogaea L.*) cultivars grown under similar production practices. Seed germination and vigor were evaluated using a thermal gradient at temperatures of 12 to 36 C (1.0 C increments) over 7 days, and included growing degree day (GDD) accumulation. Germination across six years of seed testing over all temperatures were phenotypically similar for HO's: Florida-07 (59 to 86%), FloRun 107 (71 to 85%), Georgia-09B (73 to 87%), Georgia-14N (58 to 79%), Georgia-13M (72 to 88%) and NO's: Georgia-06G (65 to 88%), Georgia Greener (65 to 86%), Tifguard (65 to 85%), Georgia-12Y (61 to 83%), and Georgia-07W (60 to 91%). Lorentzian distribution models established the temperature and time (hours) to maximum germination. Analysis indicated the maximum germination across all temperatures: Georgia-14N (HO) 50.5 hr < Georgia Greener (NO) 53.2 hr < Tifguard (NO) 54.4 hr < Georgia-07W (NO) 54.6 hr < Georgia-13M (HO) 56.5 hr < Georgia-06G (NO) 58.9 hr < Georgia-09B (HO) 60.4 hr < Florida-07 (HO) 67.8 hr < FloRun 107 (HO) 69.7 hr < Georgia-12Y (NO) 72.0 hr. Peanut cultivar vigor varied by year with respect to overall GDDs to reach Germ<sub>80</sub> and maximum germination (*b0*). Overall vigor was similar for HO and NO runner-type peanut cultivars. Peanut seed were consistent in germination, Germ<sub>80</sub>, and *b0* among the ten evaluated cultivars over the six years of testing.