

## Release of a Virginia-type Peanut Cultivar, 'N.C. 20', for the Virginia-Carolinas Production Region

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N.C. 20 was developed using a combination of pedigree selection and modified pedigree selection (single-seed descent) among, and within families descended from a three-way cross. The initial cross was made between the breeding line N01015T and a sister breeding line to Gregory (N0000980l). The resulting F7 derived line (X02083 [F2-01-S-01-S-05: F7]) was then crossed to the variety 'Sugg'. Yield of N.C. 20 is similar to those of existing Virginia-type cultivars including Bailey II, Bailey, Emery and Sullivan. In the NCSU Advanced Testing Program for yield, consisting of 18 trials across six years at three locations, N.C. 20 exceeded yields of Bailey, Bailey II, Sullivan and Wynne and was similar to the yields of Emery. N.C. 20 had bright jumbo and fancy pods. In the regional performance trials (Peanut Variety and Quality Evaluations) conducted from 2017 through 2020, N.C. 20 had a greater yield than all currently available Virginia-type varieties and a similar crop value to Bailey and Bailey II. During the regional performance testing, it was determined that N.C. 20 has a slightly later maturity date than Bailey and Bailey II; however, this did not affect the oleic acid content, with an average of 81.5% and an oleic-to-linoleic acid ratio of 21.2. N.C. 20 is considered moderately resistant or tolerant to the most common diseases in the Virginia-Carolina peanut production area: early leaf spot caused by *Passalora arachidicola*, late leaf spot caused by *Nothopassalora personata*, Sclerotinia blight caused by *Sclerotinia minor*, and tomato spotted wilt caused by Tomato spotted wilt tospovirus. In addition, N.C. 20 provides greater yields under heavy leaf spot pressure when compared to currently available Virginia-type peanut varieties. The roasted peanut and sweetness attributes of N.C. 20 were similar to Bailey and compared well with the runner-type flavor standards Georgia Green and Georgia-06G. N.C. 20 has high-oleic oil chemistry. The high-oleic trait produces an array of changes in the fatty acid composition of peanut oil compared with normal-oleic cultivars, most notably the elevation of oleic acid and the reduction of linoleic and palmitic acid content. Compared to normal oleic cultivars like Bailey, N.C. 20 exhibits the extended shelf life associated with high-oleic lines like Bailey II, Emery, Sullivan and Wynne.