

## SUMMARY / IMPACT REPORT TO NATIONAL PEANUT BOARD - 2008 South Carolina Project - Jay W. Chapin, Principle Investigator

### Disease Screen:

Over the past three years (2006-08) in cooperation with plant breeders at NCSU, Univ. of Florida, Univ. of Georgia, and Va. Tech. we have measured host plant resistance to spotted wilt disease, white mold, late leaf spot, and leaf hopper injury in experimental virginia type lines.

Data from this project has contributed significantly toward the release of two resistant lines: Bailey and N03091T (to be released as "Sugg").

Equally important, we have documented high levels of disease susceptibility in many experimental lines, discouraging their release.

### Grower Impact:

**\$10 less fungicide on only 20,000 ac in S. C. = \$200,000/yr.**

**Tomato Spotted Wilt.** Six lines or cultivars had significantly less spotted wilt stunting than the NC-V 11 standard: N03081T, GA-03L, N05042F, N03091T, N05008, and N03088T. Four lines or cultivars had significantly more spotted wilt stunting than the standard: VT003193, N05024J, N04002FSmT, and Phillips.

**Late Leaf Spot:** None of the tested lines had significantly less late leaf spot defoliation than the NC-V 11 standard. However, five lines or cultivars had significantly more late leaf spot defoliation than the standard: Gregory, VT023002, VT003194, VT024077, and Phillips.

**Stem Rot.** Nineteen lines or cultivars (N03081T, Georgia-03L, N05042F, N03090T, N03091T, N03005J, N03089T, N03088T, FLMR12, FLMR9, N04071CT, N02009, N05056, FLMR7, FLMR15, FLMR14, GA012535, N04074CT, and N04042FSmT) had significantly less

**Yield.** Sixteen lines or cultivars (Georgia-03L, N03081T, N03090T, N03089T, N03088T, N02009, N03091T, N05042F, N03005J, FLMR12, FLMR15, FLMR7, GA012535, FLMR9, FLMR14, and N05056) had significantly higher yield than the NC-V 11 standard; four (N04042FSmT, N04074CT, VT003185, and Florida Fancy) had significantly lower yield than the standard. GA012535 was recently released as cultivar Georgia-08V by the Univ. of Georgia.

In addition to a predisposition to leafhopper injury, N03081T, its sister lines (N03088T, N03089T, and N03090T), and N03091T produced a very large canopy with a poorly defined main stem at maturity. This characteristic would make it more difficult for growers to stay on the row during digging; however this potential problem is mitigated by increasing grower use of GPS guidance systems for planting and digging.

### Variety Challenge:

**Runners: Ga. O6-G, Ga. Greener, TifGuard were top performers in crop value.**

**Virginias: Champs and NC-V11 still best risk / reward for S. C.**

**Bailey (N03081T) had the highest crop value even under a maximum protection fungicide program. N03091T (to be released as "Sugg") is yield competitive with current large pod virginia types (e.g. Gregory, Phillips) with a superior disease package (but resistance not quite as good as Bailey).**

**Grower Impact:**

**200 lb advantage on only 20,000 ac @ 450/ton = \$900,000/yr.**

**Uniform Peanut Performance Test:**

**Ga052524 was the highest yielding runner type and N03081T (Bailey) was the highest yielding virginia type at the S. C. site (Blackville) for this regional test of advanced experimental lines. UPPT report available for detailed results.**

**Peanut Variety Quality Evaluation Test:**

**Thirty-seven experimental Virginia type lines were evaluated for quality characteristics and agronomic performance in this three-state (NC, VA, SC) test. The S. C. site was located at Florence. PVQE report available for detailed results.**