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Subject: Peanut Breeding

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Title: Early Generation Screening for the High O/L Trait in Segregating F₂ Peanut Populations

Personnel: **Michael R. Baring**, Soil and Crop Sciences Dept. 2474 TAMU, College Station, TX. 77843-2474. Ph# 979-845-4273 m-baring@tamu.edu
M.D. Burow, Soil and Crop Sciences Dept., Texas Agricultural Experiment Station, 1102 East FM 1294, Lubbock TX. 79403. Ph# 806-746-6101. mburow@tamu.edu
C.E. Simpson, Soil and Crop Sciences Dept., Texas Agricultural Experiment Station, Stephenville, TX. 76401. Ph# 254-968-4144 c-simpson@tamu.edu

Final Report:

Summary

This project was granted an extension as harvest ran late into the Fall of 2009 and we were unable to get samples prepared and sent to J.L. Leek and Associates for analysis before December 31, 2009. The price for the analysis increased from 1\$/individual seed to 1.66\$/individual seed in 2009, so we analyzed fewer seeds for the same price. The majority of our runner crosses were high oleic X high oleic, so there was no need to analyze individual seeds from these crosses. However, we have made many crosses between the low oleic, Virginia-type, NC-7 cultivar and some of our elite large seeded runner materials in an attempt to develop a high oleic, multiple disease resistant, Virginia-type peanut for the growers.

We analyzed approximately 2,800 individual segregating F₂ and F₃ generation seeds from the following crosses; NC-7 X Tamrun OL01, Tamrun OL01 X NC-7, NC-7 X Tamrun OL07, Tamrun OL07 X NC-7, NC-7 X Tx055327 (a high oleic, Sclerotinia resistant, large seeded breeding line), and Tx055327 X NC-7. Averaging across all of the seeds analyzed, approximately 28% were in the high oleic category, 28% were in the mid-oleic category meaning that they were either immature or still segregating for O/L values, and 44% were in the low oleic category. Over 700 high oleic seeds from this analysis are being grown out for selection and increase in 2010. They will be selected for agronomic traits associated with large seeded Virginia-types as well as for Sclerotinia resistance.