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2008

**Subject: Peanut Breeding**

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**Title: Early Generation Screening for the High O/L Trait in Segregating F<sub>2</sub> Peanut Populations**

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**Final Report:**

*Summary*  
The peanut breeding and testing program was awarded \$10,000 in 2008 to screen early generation materials for the high O/L trait. Crosses made between low oleic and high oleic parents produce F<sub>2</sub> progeny which are segregating for the high O/L trait. We screened approximately 6,860 F<sub>2</sub> progeny from various crosses. Some of these crosses were initiated to develop a high oleic, Sclerotinia resistant, Virginia-type peanut. The parents for these crosses included NC-7 (a low oleic Virginia-type), Tx055327 and Tamrun OL01 (high oleic, large seeded runner-types with resistance to Sclerotinia), and Tamrun OL07 (high oleic, large seeded runner-type with multiple disease resistance).

The other progeny that were screened resulted from crosses initiated to develop a high oleic, multiple disease resistant, runner-type peanut with resistance to leafspot. The resulting progeny dealt with crosses between our low oleic, leafspot resistant parents (Tx964117 and Tx964120), and our elite breeding lines that contain the high oleic chemistry and carry multiple disease resistance.

Out of the total number of progeny tested, 929 had O/L ratios above 10:1, 794 had O/L ratios between 2:1 and 10:1, and the remaining 5,137 were below a 2:1 oleic to linoleic fatty acid ratio. The seeds will be kept separate and the progeny with both the high and the mid O/L ratios will be planted in both our leafspot and Sclerotinia screening nurseries in 2009 for selection purposes.

This screening saved the project valuable nursery space, time and effort by being able to throw out over 5,000 individual progeny which were low oleic. These progeny would have taken up approximately 10,000 row feet of nursery space.