

#49 NC-08  
2002/2003/2004  
Final

RECEIVED  
NOV 14 2005  
NATIONAL PEANUT BOARD

Date Submitted 10/05

NCARS/NCCES CODE \_\_\_\_\_  
Extension X Research \_\_\_\_\_  
REPORT PERIOD May, 04 - January, 05  
INTERIM \_\_\_\_\_ X FINAL \_\_\_\_\_

**FINAL PROGRESS REPORT to  
National Peanut Board  
North Carolina Peanut Growers Association**

TITLE: Development of Tomato Spotted Wilt Virus Germplasm

LEADERS: S. P. Tallury and H. T. Stalker  
Department of Crop Science

REPORT:

About 33 F<sub>2:3</sub> generation families were planted at Lewiston in the summer of 2004. These were derived from *A. hypogaea* cultivars (Gregory, Perry, NC-V11, NC 12C and VA 98R) x moderately TSWV resistant interspecific hybrid derivatives (derived from TSWV resistant, diploid wild species, *A. cardenasii*).

From the above, 150 single plant selections were made based on TSWV ratings. The TSWV ratings were based on dead and/or diseased plants in plots and were recorded from early July through mid September.

Seeds of the selections were planted in the winter nursery in Puerto Rico in November, 2004.

Single seed descended progenies in the F<sub>4:5</sub> generation (246, 2- 14 seed row plots) from the winter nursery in Puerto Rico (2004/05) were planted in Lewiston in the summer of 2005. TSWV ratings are being recorded for plant selections and generation advancement.

Gregory x *A. diogeni* hexaploid hybrid progenies planted at the Sandhills Research Station, Jackson Springs in the summer of 2004 were harvested and about 800 hybrid pods were obtained.

Hexaploid hybrid plants of Gregory x *A. correntina* (9530), VA 98R x *A. diogeni* and VA 98R x *A. correntina* (9530) were established in the greenhouse and several progenies from these hybrid combinations were also established in the greenhouse.

Seeds and plants established from the hexaploid hybrids were planted at the Sandhills Research Station, Jackson Springs in the summer of 2005. Additionally, vegetative cuttings from the hexaploid hybrids are being rooted to multiply hybrid progenies for field evaluations against TSWV and leafspots in the summer of 2006.

The TSWV resistant *hirsuta* peanut (PI 576636) x autotetraploid of *A. diogeni* hybrids were established in the greenhouse. So far, no pegs were observed on this hybrid.

Selections with high levels of leafspot resistance from other 2004 field experiments were planted in Lewiston in 2005 summer and TSWV ratings are being recorded on these selections to combine leafspot and TSWV resistance.

**SUMMARY OF EXPENDITURES**

The budget activity for the entire period from May, 2004 to April, 2005 was \$ 13,876.25 which was used to pay for part-time student help salary (\$1639.92), for purchase of greenhouse, laboratory and field supplies (\$9819.21), Domestic travel to research stations (\$1686.12) and \$ 731.00 for services (telephone, fax etc).