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 2004

*Breeding to maximize yield potential by gene transfer  
 Gainschawig wild species*

March 1, 2005

**Subject:** Peanut Breeding

**Title:** Heritability Estimates for High Yield Traits Transferred from Wild Species Hybrids to a Conventional Peanut.

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**Final Report for 2004:**

The crossing program to transfer high yield potential from wild species derived hybrids to conventional peanuts began in the spring greenhouse of 2004. Approximately 275 pollinations were made with positive results on 70% of the attempts. The resulting F<sub>1</sub> populations were planted in the College Station nursery in June of 2004. There were 191 F<sub>1</sub>'s planted in the nursery with the pedigrees listed in the following table.

#F <sub>1</sub> 's	Pedigree	#F <sub>1</sub> 's	Pedigree
5	Tamrun OL 01 X TP301-81	4	01F5404 XTP301-81
4	Tamrun OL 01 X TP301-95	10	01F5404 X TP301-209
10	Tamrun OL 01 X TP301-33	10	01F5404 X TP301-112
12	Tamrun OL 01 X TP301-112	2	TP301-112 X 01F5404
10	Tamrun OL 01 X TP301-81	7	01F5404 X TP301-95
6	TP 301-89 X Tamrun OL 01	16	01F6212 X TP301-112
12	TP301-89 X Tamrun OL 01	4	02F3813 X TP301-95
4	TP301-112 X Tamrun OL 01	3	02F3813 X TP301-112
4	Tamrun OL 01 X TP301-209	1	02F3846 X TP301-112
1	Tamrun OL 02 X TP301-33	1	02F3820 X TP301-89
4	Tamrun OL 02 X TP301-81	2	02F3820 X TP301-95
14	Tamrun OL 02 X TP301-112	3	01F5415 X TP301-95
8	Tamrun OL 02 X TP301-209	2	01F5415 X TP301-209
6	Tamrun OL 02 X TP301-95	6	TP301-89 X 01F5415
6	TP301-112 X Tamrun OL 02	2	01F5415 X TP301-112
7	TP301-112 X 03T4204	3	TP301-89 X 03T4202

The F<sub>1</sub> yields and seeds are being evaluated and a select number of F<sub>2</sub> populations will be grown out for the purpose of estimating the heritability of high yield traits as compared to parent 1, parent 2, and the F<sub>1</sub> progeny. This will give a preliminary idea as to whether or not the study should progress and lines should be carried out to the fifth or sixth generation for a generation means analysis. Crosses will be made in the 2005 spring greenhouse to make duplicate F<sub>1</sub>'s from last years crosses so that the individual F<sub>2</sub> population variances can be measured against both the F<sub>1</sub> and Parental variances.