

segregation of the mutant characters and the aneuploid lines in the F₁, F₂ and testcross for 1982 and 1983 are given in Table 2.

Table 1. Genetic tests for association of marker genes with monosomes and telosomes. - = not associated.

Mono- or Telo-some	Genetic Marker Genes					
	cu	gl ₁	v ₂	v ₄	Lc _y Lc _z	P ₁ P ₂
Mono 3		-				
Mono 9					-	-
Mono 12		-		-		
Telo 20 L	-		-			
Telo 20 S			-			

Table 2. Tests for association of mono and telos with market genes. 1982 & 1983.

	V ₁	V ₁ ⁰	V ₂	V ₂ ⁰	V ₄	V ₄ ⁰	V ₉	V ₉	Pg ₂	Pg ₀	Gl ₁	gl ₁	Cu	cu	Crp	+	P ₁ P ₂	P ₁ p ₂	p ₁ P ₂	Lc _y Lc _z	lc	lc	Y ₁	y ₁	
H3F ₁ 2n-1																									
2n	9	0	18	0	18	0			18	0															
H3			49	9	29	9			35	15															
F ₂ 2n			52	17	40	8			41	21	75	20													
2n-1	3	0					2n-1-1-1-1:1		0	4	0				4	0	1	0	0	3	0				
H9F ₁ 2n	75	0							29	0	74	0			15	0	29	0	0	27	0				
H9															110	90	19	3	9	40	59	24	8		
F ₂ 2n															117	94	35	5	12	24	14	37	15		
H9															64	77									
Tc 2n															42	50									
2n-1			6	0	4	0			3	0															
H12F ₁ 2n			10	0	12	0			13	0															
H12			12	0	66	15			17	11	71	9													
F ₂ 2n			7	3	127	35			38	17	72	0 ¹													
T20S Telo	1	8	4	0	2	0	4	0	2	0	11	0	11	0											
F ₁ 2n	31	0	16	0	14	0	16	0	18	0	32	0	32	0											
Telo			15	5	51	18	68	30	23	28															
F ₂ 2n			7	4	92	34	70	19	39	21															
T20L Telo	16	0	3	0	7	0	7	0	6	0	16	0	16	0											
F ₁ 2n	23	0	16	0	12	0	13	0	13	0	23	0	23	25											
Telo	55	24	13	9	108	31	21	6	97	37	73	11	52	30											
F ₂ 2n	104	39	7	1	103	33	29	16	79	42	101	42	113												

¹F₁ was not heterozygous for gl₁. telo 16L indep A₂

GENETIC ANALYSIS OF A NECROTIC-LEAF-SPOT MUTANT OF DELCOTT 277R

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In 1981, we reported on a genetic study of a necrotic-leaf-spot mutant that was found segregating in the Delcote 277R line. Delcote 277R is an Upland cotton with the cytoplasm and the restorer gene(s) of G. harknessii that was developed by the late

Dr. Vesta Meyers. Following the selection of a pure breeding line for necrotic spots through self-pollination, necrotic spot plants were crossed as females to TMI, the standard normal, and the F₁'s were then testcrossed as females to necrotic spot and TMI and self-pollinated to obtain an F₂ population. The results of these segregating populations were reported in 1981, and showed that the necrotic leaf spot mutant behaved as a single recessive gene.

Following these tests, it dawned on us that since two different cytoplasms are involved, it is imperative that the reciprocal cross of TMI as female to necrotic spot should be analyzed also for segregation of the necrotic spot mutant. TMI is the normal standard for genetic analysis. The results of the reciprocal cross are given in Table 1.

Analyses of the data in Table 1 revealed that if the reciprocal cross in which TMI is the female in the F₁, this places the necrotic-spot factor(s) in the Upland cytoplasm, the mutant character now segregates as duplicate factors, i.e., two independent genes determine the presence or absence of necrotic-leaf spot.

Tests are underway to isolate the monomeric genotypes for further analysis.

Table 1. Genetic analysis of necrotic-leaf spot of Delcote 277R

	Normal	Necrotic- spot	Total	Chi-square
F ₁ (TMI + necrotic) x necrotic	48	17	65	3:1,
TMI x F ₁ (TMI x necrotic)	48	0	48	P .9 - .7
F ₁ (TMI x necrotic) S	53	6	59	15:1, P .3 - .2

CADUCOUS BRACT COTTONS

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All commercial cultivars of cotton have persistent bracts. It is the bracts, which dry up before the bolls open, that are shattered in the harvesting operation and picked with the seed cotton. Upon ginning, they become the hard to remove trash that is mixed with the lint and baled to become a component of the cotton dust, which causes the illness called byssinosis or "brown-lungs."