NOTICE OF RELEASE OF C221-91, C224-91, C300-91, and C306-91 GERMPLASM LINES OF COTTON C.G. Cook USDA, ARS, Wesalco, TX L.N. Namken Texas Agric. Exp. Stn., Weslaco, TX A.W. Scott, Jr. Rio Farms, Monte Alto, TX A.F. Robinson USDA, ARS College Station, TX

The Agricultural Research Service, United States Department of Agriculture, Texas Agricultural Experiment Station, and Rio Farms, Inc., announces the release of C221-91, C224-91, C300-91, and C306-91 germplasm lines of cotton. C224-91, C300-91, and C300-91 are tolerant to reniform nematode infection and C300-91 and C306-91 possess excellent resistance to bacterial blight. C224-91 has also shown good field tolerance to the southern root-knot nematode. C221-1-91 is being released because of its superior performance and adaptability to growing conditions of the Lower Rio Grande Valley and Coastal Bend areas of Texas and southern Tamaulipas, Mexico.

The parentage of C300-91 is 'Tamcot HQ95/'S295', followed by a subsequent backcross to Tamcot HQ95. C306-91 is from the cross CABCHUS-1-1-86/S295, followed by a subsequent backcross to CABCHUS-1-1-86. CABCHUS-1-1-86 is a Multiple Adversity Resistance breeding line and S295 is a cultivar developed in Chad which is resistant to both the US and African bacterial blight isolates. Individual plant selections were made in the F_2 , F_3 , and F_4 generations. The parentage of C221-91 and C224-91 is a glabrous plant selected from within a population of Tamcot HQ95/'Deltapine 20', followed by individual plant selections in the F_2 and F_3 generations.

Agronomic traits of C224-91, C300-91, and C306-91 were compared to La. RN 1032, a reniform and root-knot nematode resistant germplasm line and Stoneville 453 from 1992 through 1994 in reniform nematode-infested and fumigated experimental field plots. In the reniform nematode-infested plots, the three germplasm lines had significantly greater yields (>40 percent) than Stoneville 453 and La. RN 1032 (Table 1). Yield reductions caused by reniform nematodes for the three germplasm lines were less than 50 percent of that observed for Stoneville 453. Compared with Stoneville 453 across both treatments, fiber length, strength, and micronaire of C224-91 and C300-91 are generally similar. C306-91 had a shorter and weaker fiber.

In tests conducted in the southern region of Tamaulipas, Mexico from 1992-1994, when compared to Deltapine 50, average first harvest and total lint yields were 26 and 15 percent greater for C221-91, 36 and 19 percent greater for C300-91, and 9 and 2 percent greater for C306-91 (Table 2). Compared to Deltapine 50, fiber of C221-91 was shorter and less coarse, fiber of C300-91 was stronger, shorter, and less coarse, and fiber of C306-91 was shorter.

In replicated yield tests conducted in the Lower Rio Grande Valley and Coastal Bend areas of Texas from 1992-1994, lint yields of C300-91, C224-91, and C306-91, were 11, 8, and 5 percent greater than Deltapine 50 (data not shown). In various tests conducted at Weslaco, Texas from 1993-1994, lint yield of C221-91 averaged 18 percent greater than Deltapine 50. With the exception C306-91, the germplasm lines generally are earlier in maturity than Deltapine 50. First harvest yields at 120-130 days after planting for C221-91, C224-19, and C300-91 range from 10-50 percent greater than Deltapine 50. Fiber strength and length are generally equal to or greater than Deltapine 50, while micronaire value of Deltapine 50 averages 10 percent higher.

Genetic material of this release is deposited in the National Plant Germplasm System where it will be available for research purposes, including variety/cultivar development and commercialization. Small quantities of seed may be obtained upon written request from C. G. Cook, USDA-ARS, Subtropical Agricultural Research Laboratory, 2413 East Highway 83, Weslaco, TX 78596.

Table 1. Lint yield and fiber properties of three germplasm lines in reniform nematode-infested (RN) and fumigated (TL) soils, averaged across 1992-1994.

	Lint yield						
Genotype	RN	TL	Strength	Length	Mic.		
	lb/acre		g/tex	inches	units		
C224-91	593	722	28.0	1.11	4.0		
C300-91	610	744	29.4	1.10	4.0		
C306-91	569	703	26.8	1.06	4.3		
La. RN 1032	396	514	29.2	1.13	3.5		
Stoneville 453	352	623	28.1	1.11	4.1		
LSD (0.05)	109	126	0.9	0.02	0.2		

Table 2. Lint yield and fiber properties of three germplasm lines insouthern Tamaulipas, Mexico, averaged across 1992-1994.

Genotype	1st harv	. Total	Strength	Length	Mic.		
	% of DI	% of DPL 50		g/tex inches units			
C221-91	126	115	25.5	1.09	4.4		
C224-91	125	121					
C300-91	136	119	29.1	1.12	4.6		
C306-91	109	102	27.7	1.04	4.9		
Deltapine 50	100	100	28.1	1.11	4.1		
LSD (0.05)			1.5	0.03	0.2		

C224-91 compared to DPL 50 in 1994 only.

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