

DELTAPINE DP 2379, DP 5111, DP 5305, DP5557
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Abstract

Deltapine Seed Company, a separate operating division of Delta and Pine Land Company, is introducing four new conventional varieties each primarily adapted to a specific geography. The genetic backgrounds of these varieties point to the use of a diverse germplasm base. DP 2379 is a very high yielding stripper variety adapted to the stripper cotton growing areas of Texas, Oklahoma and New Mexico. DP 5111 is a very early picker variety, adapted to the northern cotton growing areas of the Midsouth and Southeast. DP 5305 is a high yielding variety, with very high gin turnout, adapted to the Atlantic Coast cotton growing states. DP 5557 is a mid to full season variety adapted to Arizona, north and central Texas and the southern growing areas of Louisiana, Mississippi and Alabama.

DP 2379, high yielding stripper variety

DP 2379 was developed by the Deltapine Seed High Plains Cotton Research program in Lubbock, TX and was derived from the cross DC 81 x Deltapine Acala 90. DP 2379 is a very high yielding, stormproof variety and is adapted to the stripper cotton growing areas of Texas, New Mexico and Oklahoma.

Fiber characteristics are very good with gin turnout better than the other stripper varieties. Stormproofness is excellent and maturity is medium early, similar to Tejas.

DP 2379 has had outstanding and consistently high yields in replicated small plot tests, including Texas A&M tests, from 1993-1997 (Table 1). Across 28 tests, DP 2379 outyielded HS 26 by 15%. In comparable tests, DP 2379 has significantly outyielded PM 330, PM 280 and Tejas by 8%, 14% and 9%, respectively.

Data available from two farmer strip trials grown on the Texas High Plains in 1997 confirmed prior small plot tests indicating the strong yield advantage of DP 2379 (Table 2). Gin turnouts of DP 2379 were high and micronaires were in the premium range.

Introduction of a Roundup Ready backcross selection of DP 2379 is planned for 1999.

DP 5111, very early picker variety

DP 5111 was developed by the Deltapine Seed Midsouth Cotton Research program in Scott, MS and was derived from the cross Deltapine 50 x Pee Dee 3. DP 5111 is a very early variety adapted to the northern cotton growing areas of the Midsouth and Southeast. DP 5111 has a pubescent leaf. Excellent early season vigor, combined with very early maturity, is characteristic of this variety.

In 1997, in farmer strip trials across Tennessee, Missouri, North Arkansas, North Carolina and Virginia, DP 5111 outperformed ST 474, SG 125 and Deltapine 51 by 35, 69 and 83 lb/a, respectively (Table 3). This resulted in a gross lint value per acre advantage of \$24, \$22 and \$33, respectively, based on grade and a base price of \$0.70/lb. The performance advantage was consistent across the regions. Early season vigor, as indicated by vigor rating, was substantially better than any comparative varieties in these tests. Table 4 illustrates the substantially earlier maturity of DP 5111 as indicated by percentage of open bolls in variety tests conducted by North Carolina State University.

Introductions of Roundup Ready and Bollgard backcross selections of DP 5111 are expected in the year 2000.

DP 5305, high yielding Southeast variety

DP 5305 was developed by the Deltapine Seed Atlantic Coast Research program in Hartsville, SC and is derived from the cross Pee Dee 3 x Ering 92 (a Chinese cultivar). DP 5305 is a mid season variety adapted to the Southeast U.S. DP 5305 has a moderately pubescent leaf and is distinguished by having very high gin turnout and outstanding lint yield potential.

In 1997, in farmer strip trials across North Carolina, South Carolina and Georgia, DP 5305 outperformed ST 474 by 2% in lint yield and 5% in gross value (Table 5). DP 5305 had longer, stronger and finer fiber characteristics, resulting in a \$0.02/lb advantage over ST 474. In replicated small plot tests in 1995 and 1996 in the Southeast, DP 5305 indicated a lint yield advantage of 4% and 8% over ST 474 and SG 501, respectively (Table 6).

Introductions of Roundup Ready and Bollgard backcross selections of DP 5305 are expected in the year 2000.

DP 5557, mid to full season picker variety

DP 5557 was developed by the Deltapine Seed Western Division Cotton Research program in Casa Grande, AZ and was derived from a cross between DP 5415 and a proprietary breeding line. DP 5557 is a mid to full season, smoothleaf variety, designed to replace DP 5415. DP 5557 is similar in maturity and agronomic traits to DP 5415.

However, DP 5557 has larger seed, better seedling vigor, a slightly looser boll and a lint yield advantage over DP 5415.

In 11 comparisons from replicated strip trials in full season growing areas, DP 5557 outperformed DP 5415 by 5%, both in lint yield and gross lint value (Table 7). Results from replicated small plot tests from prior years indicate similar advantages of DP 5557.

Introductions of Roundup Ready and Bollgard backcross selections of DP 5557 are expected in the year 2000.

References

Bowman, D. 1997. North Carolina Official Cotton Variety Trials. North Carolina State University. (not published).

Gannaway, J. 1996. Cotton performance tests in the Texas High Plains and Trans Pecos areas of Texas. Texas Agricultural Experiment Station, Lubbock, Tx. (not published).

Smith, C.W. 1997. Preliminary results of the cotton cultivar tests in central and south Texas. Texas A&M University, College Station, Tx. (not published).

Table 1. Lint yield advantage of DP 2379 over all tests, 1993-97.

Variety	DP 2379 Advantage	Paired T test P-value	No. of tests
PM 330	8%	0.007	20
DP 2156	9%	<0.001	27
Tejas	9%	0.001	20
PM 2200RR	12%	0.001	9
PM 2326RR	13%	0.005	9
PM 280	14%	<0.001	18
HS 26	15%	<0.001	28
HS 200	16%	<0.001	17

Table 2. Farmer strip trials grown on the Texas High Plains, 1997.

Variety	Lint Yield		Value	Turnout	Staple	Strength	Mic
	lb/a	% HS26	\$/a	%	32nds	g/tex	
1997 Brownfield, Tx (3 replicates)							
DP 2379	787	128	559	23.9	34	29.7	4.3
PM 2200RR	670	109	484	24.1	34	30.1	3.8
PM 330	660	107	461	22.0	33	30.3	4.0
TEJAS	647	105	455	23.0	33	29.8	4.0
UTE	637	104	453	21.3	35	29.9	3.4
HS 26	615	100	444	21.6	34	31.0	4.1
PM 2326RR	620	101	443	23.8	34	30.2	4.0
DP 2156	603	98	415	23.2	33	26.9	4.0
PM 280	555	90	403	21.9	36	32.3	3.6
HS 200	544	88	395	21.7	35	31.5	3.5
APACHE	403	66	283	20.0	33	30.9	3.6
1997 Wolfforth, Tx							
DP 2379	524	107	374	30.8	34	30.0	4.0
HS 200	496	101	357	28.8	37	30.7	3.5
HS 26	489	100	329	29.4	34	30.4	3.8
DP 2156	438	90	302	29.3	33	27.1	3.8

Table 3. DP 5111 vs. ST 474, SG 125 and Deltapine 51 in farmer strip trials grown in North Arkansas, Missouri, Tennessee, North Carolina and Virginia in 1997.

	Yield lb/a	Value \$/a	Turnout %	Staple 32nds	Strength g/tex	Mic	Vigor Rating*
DP 5111	991	\$663	35.6	35	30.3	4.8	1.9
ST 474	956	\$639	38.1	35	28.8	4.6	3.2
No. Tests	26		26	24	24	24	10
Advantage	35	\$24					
DP 5111	1000	\$666	35.6	35	30.2	4.8	1.9
SG 125	931	\$644	36.8	36	28.1	4.4	3.4
No. Tests	24		24	22	22	22	10
Advantage	69	\$22					
DP 5111	996	\$667	36.5	35	29.8	4.8	1.9
Deltapine 51	913	\$633	36.0	36	27.7	4.4	3.0
No. Tests	26		26	26	26	26	10
Advantage	83	\$33					

* Vigor rating (early season): 1 = outstanding, 5 = very poor

Table 4. 1997 North Carolina State Variety Tests (Early Maturity).

Variety	% Bolls opened
DP 5111	80
DP 5409	61
SG 501	58
SG 125	56
Deltapine 51	55
ST 474	50

Table 5. DP 5305 vs. ST 474 in 27 farmer strip trials in North Carolina, South Carolina and Georgia in 1997.

	Yield lb/a	Value \$/a	Price \$/lb	Turnout %	Staple 32nds	Strength g/tex	Mic
DP 5305	906	618	0.68	40.7	35	29.2	4.6
ST 474	887	589	0.66	41.3	34	27.8	4.8
Advantage	19	\$29					

Table 6. DP 5305 performance in replicated small plot tests in 1995-96.

	Yield lb/a	Yield % 474	Turnout %	Staple in	Strength g/tex	Mic
DP 5305	1348	104%	43.3	1.13	30.4	4.7
ST 474	1291	100%	43.0	1.11	28.9	4.9
SG 501	1238	96%	41.3	1.15	31.5	4.7

Table 7. DP 5557 vs. DP 5415 in 11 farmer strip trials grown in Arizona, North Texas, Oklahoma and Scott, Mississippi in 1997.

	Yield lb/a	Value \$/a	Price \$/lb	Turnout %	Staple 32nds	Strength g/tex	Mic
DP 5557	1261	\$895	0.71	34.4	36	29.3	4.7
DP 5415	1196	\$851	0.71	34.5	36	29.3	4.6
Advantage	65	\$44					