Fruiting Patterns and Yield of Upland Cotton

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Increasing pressure from pink bollworms, boll weevils, and elevated water costs have caused more interest in reducing September production costs. Realistic farm budgets consistently show net income losses at average yield levels when all costs are included. Only high yields, reduced costs, or governmental subsidies may reverse the situation if the $50,000 limitation is not a dominant factor.

Four varieties and four experimental lines were compared for earliness, quality, and amount of ground cotton. Both second pick and ground cotton contribute to total yield but both are priced lower than first pick most of the time. Certainly ground cotton at 37 to 45 cents per pound contributes little to profits unless through subsidies.

Flowering rate was monitored in August to identify relative time of "cut-out" and the fruiting patterns. In the same survey of more than 300 plants of each entry, rate of boll opening was identified. In the first week of August, DP 120, DP 90, and DP 775 exhibited the highest flowering rates while DP 70-794, DP 90Y and DP 62 cut-out most rapidly in late August. By August 14 McNair 2019-10, DP 70-794, and DP 70 were in the top four entries in boll opening and continued to lead August 20.

At first machine harvest on November 15 DP 90Y, DP 90, McNair 2019-10 and DP 775 were in the upper half for yield with an average 1317 pounds of lint. This exceeded lower half yields by 151 pounds or 11.5 percent. First pick for the upper group averaged 90.1 percent of total spindle picked cotton with McNair 2019-10 being the lowest at 85.7 percent.

With second harvest McNair 2019-10 and DP 62 yielded an average 201 pounds of lint as compared to an average 127 pounds for Dp 70-794, DP 70 and DP 775. Only DP 775 of the latter varieties yielded well at first pick or with total yield.

Evaluation of ground harvest found DP 90, DP 90-Y, and DP 775 averaging only 96 pounds of lint versus an 149 average for the other five entries. It is important to note that these varieties or strains were also in the upper half for yield at first harvest and total yield.

Grades of McNair 2019-10, DP 120, DP 90, and DP 62 were generally better than other varieties. There was some difference in staple length between varieites but not enough to affect price. DP 120, DP 70 and DP 70-794 were the entries with the fewest discounts for high micronaire.

Fiber Characteristics

Grade	Staple	Micron
McNair 2019-10		
MID	1 1/8	5.1
MID	1 1/8	5.4
MID	1 3/32	5.2
MID	1 3/32	5.3
MID	1 3/32	5.2
DP-120		
MID	1 1/8	4.9
MID	1 1/8	4.8
MID	1 1/8	4.9
MID	1 1/8	4.8
DP 62		
MID	1 3/32	5.2
MID	1 3/32	5.2
MID	1 3/32	5.2
DP 90		
MID	1 1/8	5.0
MID	1 3/32	5.2
MID	1 1/8	5.2
MID	1 3/32	5.2
MID	1 1/8	5.2

Grade	Staple	Micron
DP 70-794		
SLM	1 3/32	4.6
MID	1 3/32	4.7
MID	1 1/8	4.8
MID	1 3/32	4.6
DP 775		
SLM	1 3/32	4.4
MID	1 1/8	5.0
MID	1 1/8	5.1
MID	1 1/16	4.7
DP 70		
SLM	1 1/8	4.9
SLM	1 1/8	4.9
SLM	1 3/32	5.0
MID	1 3/32	4.9

Crop History

SOIL - Laveen loam PREVIOUS CROP - cotton HERBICIDE - 1 pt. Prowl PLANTING DATE - APRIL L9 fertilizer - 10 T. manure, 20 gal. UN 32, 15 gal. UN 32 INSECTICIDE - 9 1b Temik on 6/12. 9 aerial applications IRRIGATION - 11 irrigations, final date September 9. DEFOLIATION - 2 pts DEF & 1 1/2 pts Accelerate October 30. HARVEST - 1st pick November 15, 2nd pick January 3 Ground - January 10.

Seeding Rates & Population

Lbs per Acre

McNair 2019-10	DP 120	DP 90Y	DP 62	DP 775	DP 90	DP70-794	DP 70
NA	15.6	15.2	13.6	14.22	13.7	16.3	12.7

Plant Population

50,210	51,240	49,865	42,300	33,700	55,025	36,450	37,140

Yield Characteristics

Variety	1st Pick Turnout %	1st Pick Lint/Acre	1st Pick % of Spindle Pick	2nd Pick Lint/Acre	Total Spindle Pick Lint/A	Ground Cotton Lint/A	Ground Cotton % Total	Total Lint/A
McNair	32.6	1289	85.7	225	1504	146	8.80	1660
DP 120	35.3	1340	91.0	133	1473	148	9.13	1621
DP 90Y	34.1	1353	90.6	141	1494	97	7.00	1591
DP 62	34.2	1164	86.8	177	1341	169	11.20	1510
DP 775	35.1	1289	93.6	88	1377	98	6.64	1475
DP 90	34.4	1210	90.4	129	1339	94	6.56	1433
70-794	34.7	1185	92.1	101	1286	134	9.44	1420
DP 70	33.4	1103	92.1	94	1197	148	11.00	1345

Flowering Rate and Boll Opening

VARIETY	8/2	8/9	8/14	8/20
DP 120	134	124 (1)*	60 (13)	56 (192)
DP 90	122	72 (5)	35 (29)	19 (380)
DP 775	106	77 (0)	28 (19)	24 (187)
DP 62	78	45 (0)	4 (18)	18 (199)
McNair 2019-10	70	65 (21)	20 (85)	17 (391)
DP 70	58	62 (15)	18 (42)	20 (447)
DP 70-794	58	37 (10)	11 (43)	13 (400)
DP 90-Y	52	39 (7)	23 (64)	15 (377)

*Flowering rate - white flowers per 100 feet of row
Numbers in parenthesis indicate open bolls per 100 ft of row

Grade Stapl