

BREEDING POTENTIAL OF THE PROMISING LONG STAPLE COTTON CROSS [Giza83X (Giza75X5844)]

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Abstract

The promising cross [Giza83 x (Giza75 x 5844)] was developed by the Cotton Breeding Research Section of Cotton Research Institute from a cross between Giza83 and Genotype (Giza75 x 5844) through artificial hybridization followed by pedigree method of selection.

This promising cross is characterized by heavy bolls (3.0-3.2 gm), high seed, lint cotton yield and lint percentage as compared to the commercial varieties Giza90, Giza83 and Giza80. The seed and lint cotton yield of the promising cross exceeded that of Giza90, Giza83 and Giza80 by 7.12%, 5.1% and 15.22% for seed cotton yield and by 9.68%, 7.09% and 14.57% for lint yield, respectively. Moreover, the lint percentage of this cross was high (39-40%). The fiber quality for the promising cross was in the same category for long staple cotton in Middle and Upper Egypt. The plants of this cross are known to be highly resistant to fusarium wilt (*Fusarium oxysporum*)

INTRODUCTION

Breeding Egyptian cotton is directed mainly towards introducing higher yielding cultivars with improved fiber properties. The use of desirable parents characterized by high yield and good fiber quality in hybridization could enhance the performance of hybrids. The progress of any breeding program depends on available genetic information. The hybridization- selection method has been utilized effectively in many instances and has been responsible for developing most the present commercial varieties in most of cotton growing countries. Al-Didi (1972) reported that all the commercial varieties grown in Egypt today were produced by hybridization except Dendera, which is the only one, produced by individual plant selection from Giza3.

The present long staple varieties Giza80 Giza83 and Giza90 for Middle and Upper Egypt introduced by the Cotton Breeding Research Section, are characterized by high yielding ability and better fiber quality. Performance of the promising cotton

cross was studied by several workers (Awad *et al*,1996, El- Helow.S. *et al*,2002. Haikal *et al*, 1996 and Megahed *et al.*, 1986)

The purpose of this investigation aimed at assessment of the superiority of the yield and fiber quality of the promising cross Giza 83 X (Giza75 X 5844) in Middle and Upper Egypt over the commercial varieties of the same category.

MATERIALS AND METHODS

The promising cross [Giza83 X (Giza75 X 5844)] was introduced by hybridization followed by pedigree method. Giza83 is characterized by heavy boll weight, high yielding, high lint percentage and early maturity. The other parent (Giza75 X 5844) is characterized by large number of bolls per plant, high lint percentage and better fiber quality.

The hybridization between parents was made in 1986 at Giza Experiment Station and from F2 till F5 generations selection has been practiced at Seds Experimental Station. The selected families of the cross from the F5 generation were evaluated through Trial A conducted in Seds and Trial B grown at different locations representing Middle and Upper Egypt category to select the promising families that exceed the commercial varieties.

The progeny of promising material families in later generations were grown in an isolated field to maintain the selected strains of the new promising cross. Comparisons among the new strains and nuclei were included in a yielding trial in 2002 and 2003 at Maghaga – El-Menia governorate. Randomized complete block design with four replications with five rows in each plot was used . The row was four meters long, 60 Cm apart and 20 Cm between hills. The hills were thinned to two plants per hill. The yield was obtained from the three middle rows of the plot.

The following characters were studied

1. Seed cotton yield (S.C.Y. C\F): estimated as the weight of seed cotton yield in kentars per feddan.
2. Lint cotton yield (L.C.Y. C\F): estimated as the weight of lint in metric kentars per feddan.
3. Boll weight (B.W): the average weight, in grams, of 50 sound opened bolls, picked at random from the first and fifth rows of each plot.
4. Lint percentage (L%): the amount of lint in seed cotton sample expressed in percentage.

5. Earliness index (E.I): expressed as yield per-cent at first pick relative to total seed cotton yield.
6. Micronair reading (MIC): an indication of fiber fineness and maturity.
7. 2.5% and 50% Span Length 2.5% S.L: in mm, measured by the digital Fibrograph.
8. Hair Weight (H.W): in term of millitex (10^{-8} g\cm).
9. Yarn Strength (Y.St): is the product of "lea strength x yarn count" (60 s carded and 3.6 twist multiplier) measured by the Good Brand Tester.

The lint cotton samples were tested in the Cotton Research Laboratory of the Cotton Research Institute.

The analysis of variance was calculated using the appropriate method according to Snedecor (1956) and Le-Clerg *et al.*, (1962).

RESULTS AND DISCUSSION

The new promising cross [Giza83 X (Giza75 X 5844)] has been induced by the artificial hybridization, in 1986, season between the variety Giza83 and genotype (Giza75 X 5844) at Giza Experiment station. The hybrid seeds were planted in the second season at Seds Experiment station to produce F₁ generation. Selection through pedigree method was applied starting from the F₂ generation and up till F₁₃ generation in the breeding field at Sids Experimental station.

From F₅ generation, the promising families were selected and subjected to evaluation of characters through trials A and later on trial B over different locations

The outcome results of the preliminary trial A, and the advanced trial B of yield evaluation at different locations of Middle and Upper Egypt proved that the two maternal families F10 253\98 and 254\98 had excelled other cultivated varieties Giza90, Giza83 and Giza80,(Table1).

Table1. Mean performance of agronomic and spinning characters of the maternal families Of the promising cross [Giza83 X (Giza75 X 5844)] and commercial varieties in 2000 season.

Family	parent	Scy	Lcy	Bw	L%	Mic	50%SL	2.5%SL	Fin	y.st
F ₁₀ 253\98	F ₉ 245\96	11.95	15.02	161	40.02	4.5	15.3	31.2	177	1780
F ₁₀ 254\98		11.85	14.90	168	39.92	4.5	15.2	31.2	174	1735
Mean Families		11.90	14.96	165	39.97	4.5	15.3	31.2	176	1760
Giza90		11.12	13.37	155	38.85	4.3	15.5	30.8	174	1775
Giza83		11.43	14.07	155	39.09	4.4	15.4	31.0	169	1775
Giza80		10.27	12.80	158	39.52	4.5	15.8	31.6	167	1740
L.S.D 5%		0.60	0.74	4.72						
L.S.D 1%		0.79	0.97	6.2						

Concerning seed cotton yield, Table (1) shows that the mean of the two families selected were slightly surpassing the commercial varieties Giza90, Giza83 and Giza80 by 0.78 Kan\fed (7.01%), 0.57 Kan\fed (5.00%) and 1.67 Kan\fed (16.26%), respectively. The mean of lint cotton yield for the two families selected exceeded the commercial varieties by 1.69 Kan\fed (12.64%), 0.89 Kan\fed (6.32%) and 2.10 Kan\fed (16.41%) respectively, With respect to boll weight results showed that the families F₁₀253 \98 and F₁₀254 \98 surpassed the varieties Giza90, Giza83 and Giza80. With regard to lint percentage mean for the selected families were slightly higher than the commercial varieties.

Moreover, the results of the fiber properties indicated that the families F₁₀253 \98 and 254\98 were on the average, comparable with Giza90, Giza83 and Giza80. They had the same trend of the long staple cotton in Middle and Upper Egypt. Generally, the first selected families showed slightly higher yield characters than the commercial varieties.

The above-mentioned two families of this cross were considered as promising new long staple strains.

In this respect, El-Moghazy *et al.* (1984) found that two selected maternal families for the cross (Giza70 xGiza68) exceeded the parental varieties in lint percentage. Awad *et al.* (1996) reported that the selected families of the cross Giza83 x Giza80 had higher yield capacity than the parental varieties. Megahed *et al.* (1986) stated that the maternal families selected from the promising cross (Giza69 x Giza75) had excelled other cultivated varieties.

In 2002 season 16 nuclei of this cross were selected from the progeny of the maternal families F₁₀253 \98 and 254\98. These nuclei were evaluated through a field trial to produce the breeder seed

Table2. Mean of agronomic characters and fiber properties of seven nuclei selected from the cross [Giza83 X (Giza75 X 5844)] in 2002 season.

	SCY	LCY	L%	BW	SI	LI	MIC	2.5%SL	Y.St
1\2002	6.87	8.53	39.5	136	9.1	6.2	3.7	30.2	1905
2\2002	6.56	8.33	39.8	145	9.7	6.7	3.8	30.7	1730
5\2002	8.70	10.84	39.6	132	9.3	6.3	3.6	30.5	1720
6\2002	7.80	9.58	39.0	161	8.9	6.1	3.7	29.5	1785
8\2002	7.57	9.50	39.8	129	9.5	6.6	3.6	30.0	1700
10\2002	7.35	9.41	40.7	143	9.3	6.3	3.8	31.1	1725
14\2002	6.79	8.51	39.8	127	9.6	6.7	3.6	31.5	1790
L.S.D 5%	N.S	N.S							
L.S.D 1%	N.S	N.S							

Table (2) showed the best seven nuclei characteristics selected from 16 nuclei cultivated in yield trial. Their seeds were mixed to form the breeder seed of the new strain of 2002 in 2003 season.

The selection levels were:

- 1- Seed cotton yield (SCY) above 6.56 kan\ fed.
- 2- Lint cotton yield (LCY) above 8.33 Kan\fed.
- 3- Lint percentage (%) above 39.0%.
- 4- Boll weight (BW) above 127 grams.
- 5- Seed index (SI) ranged from 8.9 – 9.7 grams.
- 6- Lint index (LI) ranged from 6.1- 6.7 grams.
- 7- Micronair value (MIC) above 3.6 units.
- 8- Yarn strength over 1700 units.

Analysis of variance showed insignificant differences indicating the genetic stability of all strains of {Giza83 x (Giza75 x 5844)} Table (3 and 4) .

Table 3. Analysis of variance for seed cotton yield in 2002 season.

S.V.	d.f.	S.S.	M.S.	F	5%	1%
Replication	3	6231213	2077071	12.72**	2.81	4.24
Nuclei	15	2301260	153417.3	0.939	1.89	2.46
Error	45	7348603	163302.3			

Table 4. Analysis of variance for lint cotton yield in 2002 season.

S.V.	d.f.	S.S.	M.S.	F	5%	1%
Replication	3	972430.9	324143.6	12.82**	2.81	4.24
Nuclei	15	355488.6	23699.24	0.937	1.89	2.46
Error	45	1137891.0	25286.47			

In 2003 season, there had been 20 nuclei of the cross [Giza83 X (Giza75 X 5844)] belonging to the family F₁₀ 253\98 and 254\98. Those nuclei were evaluated in a yield trial along with the previous foundation seed for 2002 (Table 5). Seven nuclei were selected according to their yield capacity and fiber qualities.

Table 5. Comparison between the selected nuclei\2003 and the strain\2002 for the Cross [Giza83 X (Giza75 X 5844)] in 2002 season in 2003 season.

Nuclei	SCY	LCY	L%	BW	SI	LI	MIC	2.5%SL	Y.St
2\2002	14.55	18.75	40.93	156	9.5	6.6	4.3	32.3	1970
8\2002	14.47	18.74	41.11	155	9.3	6.4	4.3	31.5	1850
11\2002	14.94	19.25	40.90	161	9.8	6.8	4.5	32.6	1950
12\2002	14.28	18.15	40.35	159	9.6	6.5	4.5	31.8	1960
13\2002	13.82	18.31	42.04	162	9.7	6.7	4.5	31.0	1810
14\2002	16.31	20.81	40.52	162	9.6	6.6	4.6	32.9	1965
15\2002	14.33	18.69	41.40	156	8.9	6.1	4.6	30.1	1900
Strain\2002	13.27	17.09	40.90	161	9.5	6.7	4.5	31.2	1780
L.S.D 5%	N.S	N.S							
L.S.D 1%	N.S	N.S							

The nuclei\2003 were mixed to form the foundation seed of new strain\2003.

The selection level were:

- 1- Seed cotton yield (SCY) above 13.82 kan\ fed.
- 2- Lint cotton yield (LCY) above 18.15 Kan\fed.
- 3- Lint percentage (%) above 40.35%.
- 4- Boll weight (BW) above 155 grams.
- 5- Seed index (SI) ranged from 8.9 – 9.8 grams.
- 6- Lint index (LI) ranged from 6.1- 6.8 grams.
- 7- Micronair value (MIC) above 4.3 units.
- 8- Yarn strength over1810 units.

The analysis of variance showed no significant differences indicating genetic stability of all the strains of this hybrid, table (6,7).

Table 6. Analysis of variance for seed cotton yield in 2003 season.

S.V.	d.f.	S.S.	M.S.	F	5%	1%
Replication	3	8716530.00	2905510.00	10.4103**	2.81	4.24
Nuclei	19	7282480.00	383288.421	1.3733	1.89	2.46
Error	57	15908670.00	279099.474			

Table 7. Analysis of variance for lint cotton yield in 2003 season.

S.V.	d.f.	S.S.	M.S.	F	5%	1%
Replication	3	1521197.200	507065.733	10.9175**	2.81	4.24
Nuclei	19	1251197.500	65852.500	1.4178	1.89	2.46
Error	57	2647385.300	46445.356			

Comparative studies were held between the new promising cross [G83x (G75x5844)] and the commercial varieties i.e., Giza90, Giza83 and Giza80 which cultivated in Middle and Upper Egypt for seed cotton yield, lint yield, boll weight, lint percentage and fiber quality. Data were extracted from the advanced yield trials (B), which were grown in different locations representing Middle, Upper Egypt and over all in four seasons 2000,2001,2002 and 2003

1- Seed cotton yield

From Table (8), Mean of seed cotton yield results in four seasons indicated that the hybrid [G83x (G75x5844)] exceeded the control varieties in Middle Egypt with 0.73 K/f (7.12%), 0.53 K/f (5.1%) and 1.45 K/f (15.22%) and also in Upper Egypt with 0.48 k/f (5.31%), 0.26 K/f (2.81%) and 0.51 K/f (5.66%) compared with Giza90, Giza83 and Giza80, respectively, in seed cotton yield. The Over all results showed that the promising cross surpassed the three varieties for seed cotton yield by 0.23 K/f (2.26%), 0.34 K/f (3.38%) and 1.04 K/f (11.12%), respectively.

2- Lint cotton yield

The promising cross-exceeded Giza90, Giza83 and Giza80 with 1.2 K/f (9.68%), 0.9 K/f (7.09%) and 1.73 K/f (14.57) respectively in Middle Egypt and 0.16K/f (1.39%), 0.65K/f (5.92%) and 0.73 K/f (6.61), respectively, in Upper Egypt and 0.69 K/f (5.87%), 0.78 K/f (6.58%) and 1.24 K/f (10.89%) compared with Giza90, Giza83 and Giza80 in lint cotton yield, respectively in overall locations ,(Table 9)

3- Boll weight

Table 10 showed that the results for boll weight of the promising hybrid [G83x (G75x5844)] surpassed the three varieties Giza90, Giza83 and Giza80 for the average weight of 50 bolls in Middle and Upper Egypt and overall locations.

4- Lint percentage

The promising hybrid [G83x (G75x5844)] slightly surpassed the commercial varieties for lint percentage in Middle, Upper Egypt and overall locations Table (11).

5- Fiber quality

Fiber characteristic (Table 12) revealed that the promising hybrid [G83x (G75x5844)] was in the same range of category for long staple cotton in Middle and Upper Egypt.

Conclusion

It could be concluded that the promising cross [Giza83x (Giza75x5844)] is producing more seed and lint cotton yield than the commercial varieties Giza90, Giza83 and Giza80 in Middle and Upper Egypt and overall. Also it had surpassed the commercial varieties for the average weight of 50 bolls in overall locations and slightly exceeded the commercial varieties for lint percentage in Middle and Upper Egypt and overall locations. Concerning fiber quality the promising cross [Giza83x (Giza75x5844)] had the same values of the category for long staple cotton in Middle and Upper Egypt. The plants of the promising cross were highly resistant to fungi disease especially fusarium wilt (*Fusarium Oxysporum*). The selected strains of this cross could be used as a new genetic source for high yielding ability, heavy boll weight and high lint percentage.

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Table 8. Means of seed cotton yield character for the promising cross compared with the commercial varieties in four seasons from the advanced yield trials (B) which grown in six different locations.

Season	Varieties	Locations								
		Seds	El-Fayoum	El-Mania	Assuit	Middle Egypt Combined	Sohaage	El-Matania	Upper Egypt Combined	Overall Egypt
2000	G83x(G75x5844)	12.91	12.65	8.05	13.07	11.67	14.96	11.17	13.07	11.95
	G90	10.05	10.0	7.84	12.28	10.04	14.22	12.35	13.29	11.12
	G83	11.83	11.72	7.40	12.74	10.92	13.35	11.52	12.44	11.43
	G80	9.47	12.43	5.98	10.04	9.48	14.71	8.99	11.85	10.27
2001	G83x(G75x5844)	9.47	10.54	12.86	8.73	10.40	7.84	6.08	6.96	9.01
	G90	9.25	9.95	12.14	13.56	11.23	7.47	5.20	6.34	9.59
	G83	8.72	10.15	11.90	9.30	10.02	7.82	4.82	6.32	8.79
	G80	6.44	9.55	14.23	5.79	9.00	9.80	5.22	7.51	8.50
2002	G83x(G75x5844)	12.75	10.8	4.46	11.21	9.80	9.25	10.09	9.67	9.76
	G90	11.93	9.91	4.34	11.24	9.36	8.74	9.96	6.35	9.35
	G83	11.90	10.61	4.66	10.97	9.54	9.11	9.12	9.12	9.40
	G80	9.13	10.14	2.91	12.37	8.64	11.09	5.91	8.50	8.59
2003	G83x(G75x5844)	14.82	10.07	8.52	14.85	12.06	7.65	9.06	8.36	10.83
	G90	12.31	9.24	8.18	13.34	10.77	9.20	11.15	10.18	10.57
	G83	13.42	9.68	8.58	1351	11.30	8.64	9.69	9.17	10.59
	G80	10.81	9.41	9.62	14.13	10.99	9.69	6.64	8.16	10.05
Means	G83x(G75x5844)	12.49	11.02	8.47	11.98	10.98	9.93	9.1	9.52	10.39
	G90	10.89	9.95	8.13	12.61	10.25	9.91	9.67	9.04	10.16
	G83	11.47	10.54	8.14	11.63	10.45	9.73	8.79	9.26	10.05
	G80	8.96	10.38	8.19	10.58	9.53	11.32	6.69	9.01	9.35

Table 9. Mean of lint cotton yield character for the promising cross-compared with the commercial varieties in four seasons from the advanced yield trials (B) which grown in six different locations.

Season	Varieties	Locations								
		Seds	El-Fayoum	El-Mania	Assuit	Middle Egypt Combined	Sohaage	El-Matania	Upper Egypt Combined	Overall Egypt
2000	G83x(G75x5844)	15.62	16.61	10.38	16.48	14.77	18.62	13.60	16.11	15.44
	G90	12.09	12.53	9.52	14.99	12.28	16.98	14.15	15.57	13.93
	G83	14.59	14.90	9.14	15.72	13.59	16.39	13.69	15.04	14.32
	G80	11.81	15.96	7.62	12.63	12.01	18.09	10.65	14.37	13.19
2001	G83x(G75x5844)	9.47	13.50	16.31	10.29	12.39	9.69	7.29	8.49	10.44
	G90	9.25	12.37	14.65	16.40	13.17	8.96	6.05	7.51	10.34
	G83	8.72	12.20	14.84	10.85	11.65	8.99	5.66	7.33	9.49
	G80	6.44	12.34	18.08	6.68	10.89	12.47	6.22	9.35	10.12
2002	G83x(G75x5844)	15.62	13.78	5.17	13.86	12.11	10.94	12.30	11.62	11.87
	G90	12.09	14.42	4.83	13.39	11.18	10.11	12.00	11.05	11.12
	G83	14.59	13.58	5.28	13.36	11.73	10.71	10.93	10.82	11.26
	G80	11.81	13.05	3.35	15.54	10.94	13.46	7.07	10.27	10.61
2003	G83x(G75x5844)	18.57	12.61	10.93	18.64	15.19	9.80	10.81	10.31	12.75
	G90	14.65	11.30	9.99	15.90	12.96	10.72	12.78	11.75	12.36
	G83	16.43	11.92	10.65	16.48	13.87	10.11	11.37	10.74	12.31
	G80	13.33	11.66	12.11	17.45	13.64	11.51	7.78	9.65	11.65
Means	G83x(G75x5844)	14.82	14.13	10.70	14.82	13.60	11.76	10.87	11.63	12.63
	G90	12.02	12.66	9.75	15.17	12.40	11.69	11.25	11.47	11.94
	G83	13.58	13.18	9.98	14.10	12.70	11.55	10.41	10.98	11.85
	G80	10.85	13.25	10.29	13.08	11.87	13.88	7.93	10.91	11.39

Table 10. Comparison between the promising cross [G83x (G75x5844)] and the commercial varieties in four seasons from the advanced yield trials (B) which grown in six different locations.

Season	Varieties	Locations								
		Seds	El-Fayoum	El-Mania	Assuit	Middle Egypt Combined	Sohaage	El-Matania	Upper Egypt Combined	Overall Egypt
2000	G83x(G75x5844)	174	168	159	170	168	167	172	170	169
	G90	156	154	151	162	156	148	158	153	155
	G83	163	156	141	158	155	147	162	155	155
	G80	167	161	155	156	160	154	155	155	158
2001	G83x(G75x5844)	158	179	130	147	154	140	162	151	153
	G90	157	155	130	134	144	121	163	142	143
	G83	146	132	131	133	136	128	156	142	138
	G80	141	164	138	135	145	135	158	147	146
2002	G83x(G75x5844)	165	129	178	150	156	126	139	133	145
	G90	152	131	149	139	143	124	133	129	136
	G83	156	125	149	147	144	137	137	137	141
	G80	159	130	151	139	145	137	141	139	142
2003	G83x(G75x5844)	164	144	145	156	152	136	149	143	148
	G90	140	130	134	150	139	136	149	143	141
	G83	149	134	133	138	139	119	135	127	133
	G80	152	142	147	147	147	136	137	137	142
Means	G83x(G75x5844)	165	155	153	156	158	142	156	149	153
	G90	151	144	141	146	146	132	151	142	144
	G83	154	137	139	144	144	133	148	140	142
	G80	155	149	148	144	149	141	148	145	147

Table 11. Mean of lint percentage trait for the promising cross-compared with the commercial varieties in four seasons from the advanced yield trials (B) Which grown in six different locations.

Season	Varieties	Locations								
		Seds	El-Fayoum	El-Mania	Assuit	Middle Egypt Combined	Sohaage	El-Matania	Upper Egypt Combined	Egypt Combined
2000	G83x(G75x5844)	39.59	41.48	41.85	40.00	39.28	39.51	38.6	37.78	40.02
	G90	38.20	39.76	38.56	38.70	37.77	37.90	36.4	36.68	38.25
	G83	39.16	40.37	39.22	39.10	38.42	39.00	37.7	37.19	39.09
	G80	39.59	40.74	40.46	40.00	38.78	39.05	37.6	37.48	39.57
2001	G83x(G75x5844)	40.4	41.27	39.07	37.4	39.54	39.2	40.29	39.75	39.47
	G90	38.8	39.46	36.91	38.4	39.39	38.1	38.32	38.21	38.33
	G83	39.6	38.14	37.33	37.1	38.04	36.5	39.56	38.03	38.04
	G80	40.6	41.03	37.84	36.6	39.02	40.4	40.33	40.37	39.47
2002	G83x(G75x5844)	39.59	39.22	36.85	39.27	38.73	39.55	38.73	38.14	38.82
	G90	38.20	39.78	35.31	37.80	37.77	36.71	38.25	37.48	37.63
	G83	39.16	40.67	35.96	38.66	38.61	37.3	38.71	38.01	38.42
	G80	39.59	40.88	36.52	39.9	39.22	38.53	38.00	38.27	38.80
2003	G83x(G75x5844)	39.78	39.74	40.75	39.84	40.03	37.69	37.88	37.79	39.28
	G90	37.81	38.82	38.76	37.84	38.31	37.00	36.37	36.69	37.77
	G83	38.88	39.10	39.39	38.74	39.03	37.14	37.25	37.20	38.42
	G80	39.15	39.36	39.97	39.22	39.43	37.75	37.21	37.48	38.78
Means	G83x(G75x5844)	39.84	40.52	39.63	39.13	39.40	40.49	38.89	39.69	39.40
	G90	38.25	39.46	37.38	38.19	38.31	37.43	37.34	37.27	38.00
	G83	39.20	39.57	37.98	38.40	38.53	38.31	38.31	37.61	38.49
	G80	39.73	40.50	38.70	38.93	39.11	38.93	38.29	38.40	39.16

Table 12. Comparison between the promising cross [Giza83x (Giza75x5844)] and the commercial varieties concerning micronaire(units), mean length(mm) and Yarn strength in Middle Egypt, Upper Egypt and Overall in 2000,2001,2002 and 2003 seasons.

Season	Location	G83x (G75x5844)			G90			G83			G80		
		MIC	2.5%SL	Y.St	MIC	2.5%SL	Y.St	MIC	2.5%SL	Y.St	MIC	2.5%SL	Y.St
2000	Middle Egypt	4.5	31.5	1720	4.5	30.9	1750	4.4	31.2	1735	4.8	31.6	1725
	Upper Egypt	4.5	30.9	1895	4.2	30.6	1830	4.2	30.7	1735	4.2	31.8	1775
	Overall	4.5	31.3	1780	4.3	30.8	1775	4.4	31.0	1735	4.5	31.6	1740
2001	Middle Egypt	4.2	31.0	1475	4.3	30.2	1720	4.3	31.0	1665	4.0	31.9	1690
	Upper Egypt	3.6	30.8	1485	3.3	29.7	-----	3.3	29.2	-----	3.8	31.8	-----
	Overall	4.0	31.4	1550	4.0	30.1	1715	3.9	30.4	1665	3.9	31.8	1690
2002	Middle Egypt	3.9	30.1	1720	3.7	29.3	1685	3.7	29.4	1670	3.7	30.8	1790
	Upper Egypt	3.7	29.6	1895	3.4	29.0	2075	3.6	29.5	1975	3.6	31.1	2010
	Overall	3.8	30.0	1780	3.6	29.2	1815	3.7	29.4	1770	3.7	30.9	1865
2003	Middle Egypt	4.4	30.1	1920	4.4	30.0	2020	4.5	30.5	1970	4.4	31.6	1900
	Upper Egypt	4.5	31.6	2045	4.3	30.8	2145	4.5	30.9	1980	4.6	32.5	2020
	Overall	4.2	30.6	1960	4.3	30.3	2055	4.4	30.6	1975	4.4	31.9	1940
Means	Middle Egypt	4.3	30.7	1710	4.2	30.1	1795	4.2	30.5	1760	4.2	31.5	1775
	Upper Egypt	4.1	30.7	1830	3.8	30.0	2015	3.9	30.1	1895	4.1	31.8	1935
	Overall	4.1	30.8	1770	4.1	30.1	1840	4.1	30.4	1785	4.1	31.6	1810

دراسة الكفاءة الإنتاجية للهجين المبشر جيزة ٨٣ × (جيزة ٧٥ × ٥٨٤٤) من طبقة الإقطان طويلة التيلة

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تم استنباط الهجين المبشر جيزة ٨٣ × (جيزة ٧٥ × ٥٨٤٤) من طبقة الإقطان الطويلة للتيلة والتي تزرع في الوجهة القبلى من خلال قسم بحوث تربية القطن - فرع طويل قبلى وذلك بالتهجين الأصطناعي بين الصنف جيزة ٨٣ والتركيب الوراثى (جيزة ٧٥ × ٥٨٤٤).

يمتاز هذا الهجين المبشر بارتفاع محصول القطن الزهر والشعر ومتوسط وزن اللوزة وتصافى الحليج وذلك مقارنة بالأصناف التجارية المنزرعة في الوجهة القبلى وهى جيزة ٩٠ ، جيزة ٨٣ ، جيزة ٨٠ وقد اثبتت النتائج انه اكثر تفوقا فى منطقة مصر الوسطى وخاصة فى محافظات الفيوم وبنى سويف والمنيا واسيوط حيث يرتفع محصول القطن الزهر بمعدل ٧,١٢% ، ٥,١٠% ، ١٥,٢٢% على التوالي كما انه يتفوق فى محصول القطن الشعري على جميع اصناف المقارنة طويلة التيلة بمقدار ٩,٦٨% ، ٧,٠٩% ، ١٤,٥٧% على التوالي كذلك كان متوسط وزن اللوزة يتراوح من ٣,٠ - ٣,٢ جرام وقد وجد أن الصفات التكنولوجية لهذا الهجين تقع فى نفس طبقة الإقطان طويلة التيلة فى الوجهة القبلى .