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THE LONG STAPLE EGYPTIAN COTTON PROMISING CROSS GIZA 89 X GIZA 86

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ABSTRACT

Pedigree selection method used for produce new Egyptian cotton varieties by which the promising cross Giza 89 x Giza 86 introduced through the same way by Cotton Research Institute. This genotype belong to the long staple category with boll weight 3 - 3.2 g, lint percentage 37.5%, mean length 32.2 – 33.2 mm upper half mean, 4.1- 4.3 Micronaire reading, 141- 160 millitex for hair weight, 40.9- 46.3 gram/tex and over 2500 yarn strength. The plants are highly resistant to Fusarium wilt (*Fusarium oxysporum*). This new promising cross characterized by high yielding and earliness and out yielded Giza 86 by about 10 % in seed cotton yield.

INTRODUCTION

For more than 60 years (1860 up to 1923), the breeders relied on use of selection of types from the field and use of Johansson (1903) theory to dealing with the progeny consequence of exist of sufficient amount of variability. But after increasing homogeneity the breeder resort to create variation by using hybridization up to now and try gathering together the advantage from the parents. The quality of cotton depends on a delicate balance between these productivity and fiber quality. The main objective for long staple category, Delta region is increasing production with commitment by the limited border for this category. This category is always interested in covering the most cultivation area in delta region and its varieties often occupy the largest area in comparison with other sand most of the production face to export to cover the world demand from long staple category and make balance in local market after consumption of large staple category Upper Egypt. The current commercials varieties Giza 86 wide spread in about 9 governorates in Lower Egypt.

MATERIALS AND METHODS

The hybridization had been done between each of Giza 89 as female and Giza 86 as male in 1989 at Giza Agriculture Research Center. The two genotypes belong to long staple category. The main objective was collected the features from each one and avoid disadvantage as wide as possible. Giza 86 characterized by high yielding and a good fiber quality, whereas Giza 89 characterized by earliness, compact growth with active the two buds in fruiting branches one give fruiting branches and the other growth and give small branches with one or two bolls (cluster phenomenon). Straining from F_2 until F_{10} generations selection procedures had been carried out in nursery field at Sakha Agriculture Station, and continuous up to breeder seed at the same station. The preliminary strain test was grown at one location (Sakha

Agriculture Station); however the advance strain trial B, experimental were grown at several locations in different governorates over the Nile delta region. As, consequences of surpassed families from this cross for three successive season in respective of commercial varieties, the mother families isolated in separation field to put eventually features and propagated the best families. A randomized complete blocks design with six replications was used in each experimental with five rows were included in each plot. The analysis of variance was calculated according to Snedecor (1956) and Leclierge *et al*. (1962).

The studied economic characters were :

1-Seed cotton yield (S.C.Y. K/fed.), estimated as the weight of seed cotton yield in metric canters per feddan which equal 157.5 kg.
2-Lint cotton yield (L.C.Y. K/ fed.), estimated as the weight of lint cotton yield in metric cantars per feddan which equal 50 kg.
3-Lint percentage (L %), the relative amount of lint in seed cotton sample expressed as percentage.
4- Boll weight (B.W) measurements as the average weight by grams of 50 bolls,
5- Earliness index (E.I. %) measurements by divided the first picking bolls on the total picking bolls
6-Fiber fineness and maturity in micronaire reading (ASTM. 1976)
7- Hair weight (H.W) in terms of millitex.
8-Yarn Strength is product of lea strength x Yarn count (60 s carded and 3.6 twist multiplier) measure by Good Brand tester
9-Fiber strength measurements by Stelometer (g/tex)
10- Upper half mean (UHM) in mm by HVI

RESULTS AND DISCUSSION

The main objective in this research was introduced new genotypes gathering together the advantages from each of Giza 86 which characterized by high yielding and good fiber quality and Giza 89 which characterized by earliness, large number of bolls and regular growth balance.

The breeders embarked on fostering selection practices through pedigree method for a long time proved satisfy successful for the breeder. The hybridization had been done between the two parents Giza 89 and Giza 86 in 1989 and system of tracing the behavior of the progeny (segregation generations) was holding starting from F_2 up to F_{10} at breeding nursery, look at Figure 1 the steps of pedigree of the new promising cross. The selection procedures step by step with statistical analysis, year after year through seven locations showed that, the three successive years before isolation year set out in Table 1, which show marked surpassed (significant difference) in comparison with the check verities Giza 89, Giza 86 and Giza 85 especially relative the three mother families before isolation year. The two families F_7 647/96 and F_7 649/96 were observed significant differences with the commercials varieties for each of seed cotton yield Kentar/Feddan S.C.Y

(C/F) and lint cotton yield Kentar/Feddan LCY (C/F). While, the family F_7 651/96 was exceeded the check varieties but without significant differences.

The same trend was noticed for lint percentage L% for the three families, where they showed behavior better than each of G89 and G85. Meanwhile, Giza 86 was exceptional which was higher than all.

Table (1): Mean performance of promising selected families of the cross G. 89 X G. 86 and commercial cultivars involved in combined analysis of trials (B) at seven different locations in (Kafer El-Shekh, El-Behera, El-Dakhlia, Damiat, Monofeia, Sharakaia and El-gharbia) during 1996,1997 and 1998

Family and variety	Parent	S.C.Y. (K/F)	L .Y. (K/F)	Lint %	BW	E%	Mic	H.W	UHM	Yarn St.
F_5 497/94	F_4 456/93	10.85*	13.00	37.97	149	73.26	4.0	147	30.9	2419
F_5 499/94	F_4 458/93	10.75*	13.19	38.78	152	64.73	3.9	148	32.0	2230
Giza 89	G. 75 X 6022	10.70	12.55	37.18	142	65.10	3.7	145	31.0	2266
Giza 86	G. 75 X G. 81	10.01	12.26	38.72	152	66.14	4.0	152	31.8	2449
Giza 85	G. 67 X CB 58	10.11	11.97	37.42	145	69.08	3.6	138	29.7	2269
Trial Mean		10.33	12.43	38.08	146	71.43	3.9	149	30.5	2327
S E		0.108	0.898		2.072					
LSD 0.01		0.279	2.303		5.338					
0.05		0.212	1.760		4.061					
F_6 638/95	F_5 497/94	11.03*	13.23*	37.93	155	63.54	4.1	156	31.0	2381
F_6 639/95	"	10.61	12.55*	37.38	156	64.70	4.2	162	31.9	2384
F_6 645/95	F_5 499/94	10.65	12.65*	37.60	150	63.66	4.1	153	33.0	2300
F_6 646/95	"	9.86	11.88	38.17	155	61.51	4.2	160	32.5	2201
Giza 89	G. 75 X 6022	10.20	11.86	36.84	145	60.31	4.1	156	30.7	2336
Giza 86	G. 75 X G. 81	10.22	12.53	38.67	156	60.78	4.3	162	31.7	2392
Giza 85	G. 67 X CB 58	11.05	13.13	37.57	151	65.05	3.9	147	29.8	2300
Trial Mean		10.37	12.50	38.16	150	68.43	4.2	159	30.6	2277
S E		0.302	0.364		1.967					
LSD 0.01		0.777	0.938		5.067					
0.05		0.592	0.714		3.855					
F_7 647/96	F_6 638/95	7.59*	8.94*	37.34	130	70.9	3.4	132	29.9	2445
F_7 649/96	F_6 639/95	7.53*	8.94*	37.65	130	69.5	3.6	142	30.6	2344
F_7 651/96	F_6 645/95	7.05	8.16	36.45	127	69.3	3.5	139	30.8	2215
Giza 89	G. 75 X 6022	6.75	7.62	35.77	122	65.2	3.4	133	29.8	2224
Giza 86	G. 75 X G. 81	6.78	8.15	38.15	128	61.5	3.6	143	30.3	2415
Giza 85	G. 67 X CB 58	6.86	7.76	35.97	131	71.1	3.3	128	28.2	2316
Trial Mean		8.20	6.99	37.15	125	71.31	3.4	132	29.5	2314
S E		0.331	0.388		2.832					
LSD 0.01		0.852	0.999		7.296					
0.05		0.648	0.760		5.551					

*** Significant or highly Significant compared with Giza 89, Giza 86 and Giza 85 or one of them at least.**

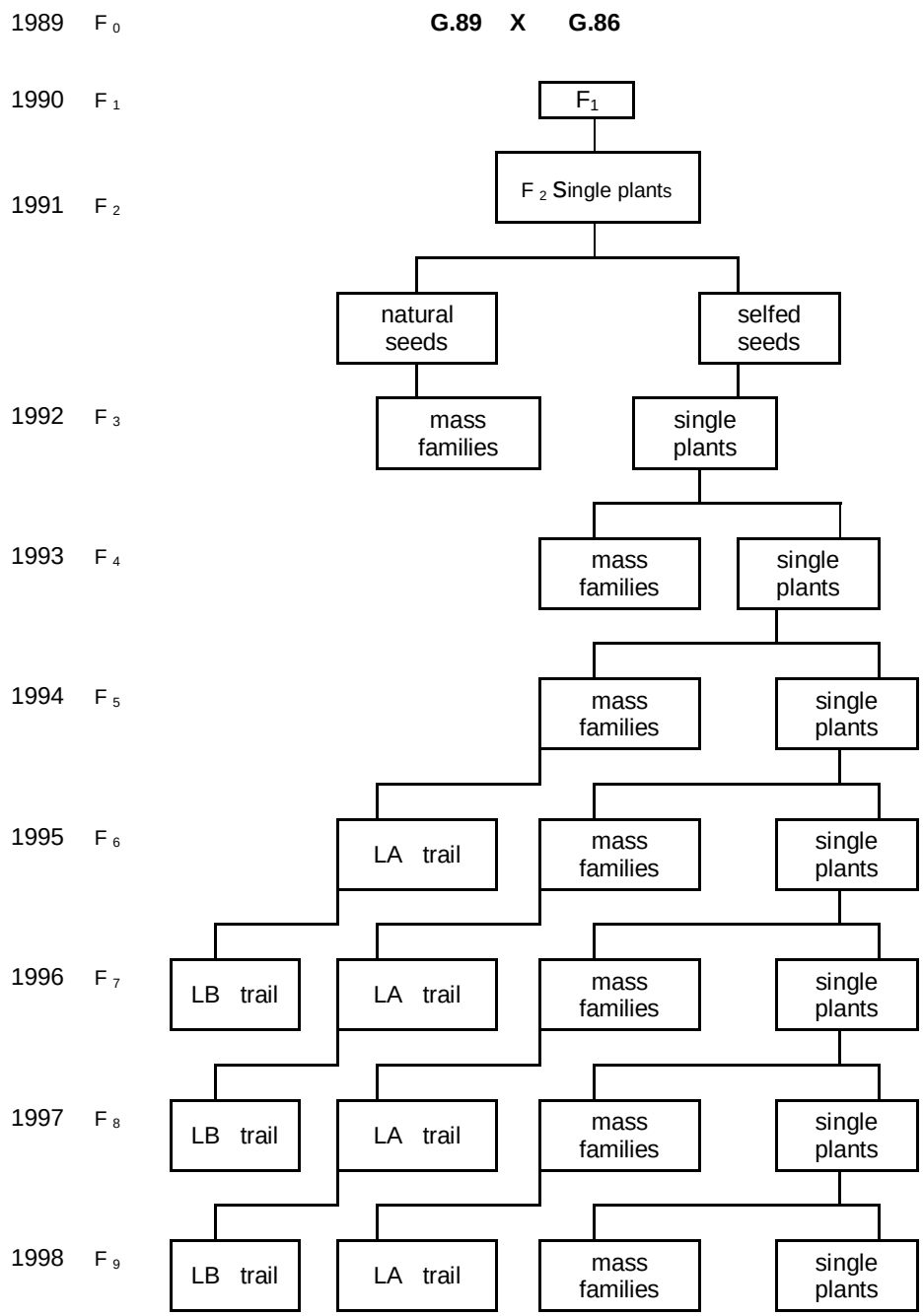

Fig. 1: The steps of pedigree of the new promising cross

Regarding, earliness index, the results at Table 1 indicating that the three families in the last year before isolation were earlier than Giza 86 and Giza 89 meanwhile Giza 85 was earlier than all. Also, all the three families were better than check varieties. With respect to fiber quality, the results showed that slight surpassed for the three selected families compaired with the check varieties. These results agreement with former researches in introduce new varieties for Haikal *et al.* (1996), Megahed *et*. *al*. (1996), Badr (2003), EL-Helow *et al*. (2003) and El- Feki *et al*. (2005)

In general this proves that the breeder successes in fulfilled the main target in former plan to choice each of Giza 86 and Giza 89 as aforementioned, in gathering high yielding and fiber quality from Giza 86 and earliness from Giza 89.

The promising cross Giza 89 x Giza 86 isolated in 1/2 Feddan (At least 5 hundred meters distance from other field for all direction to avoid cross pollination) in 1999 at the F_{10} generation after three successive seasons evaluated in Trial B. The main target from isolation are put final touch for the breeder on the cross, maintain about purification and uniformity and seed production. The isolated field started with single plants which select the best plants (look at Figures 3, 4, 5, 6, 7 and 8) and divided into two groups. The utmost group will be reused as single plants from selfed seed and the natural seed used as bulky evaluation. The other group, selfed seed for each plant face to sown as self nucleolis with designed 3 rows, 65 cm and 25 cm between hills while the nature seed faced to nature nucleolis with the same cultivation design. The best natural nucleolis selected and select the corresponding in self nucleolis and each of group promoted where the best natural nucleolis promoted to experimental yield trial, and self nucleolis promoted to nuclei, finally the statistical analysis used to select the best nuclei which will be mixed to form breeder seed, look at Fig. 2.

Table 2, gave the observed mean square of nuclei cultivated in nine successive seasons and the results showed the exist of significant differences among nuclei in 2001 and 2003 seasons. While a successful selection for the standard traits that pose the main feature for the expected varieties led to hide the genotypic differences and confirm the homogeneity of the selected nuclei

The first comparative trail was sown in 2001, and as a resulting of these experimental 8 nuclei was choice and mixed to represent the first breeder seed in the next year which used as comparative tools among nuclei. Tables 3 up to Table 11 show the mean performances of the selected nuclei and breeder seed. So, the historical background for the item can be tracked in the isolated field.

In fact the current commercial variety Giza 86 is the only representative variety for long staple category in Delta region, Table 12 set out the complete comparison between the commercial variety and alternative (Giza 89 x G 86) for eight successive seasons. The results revealed that the promising cross (G.89 x G.86) was better than Giza 86 in seed cotton yield and the increasing swings during the last 8 years from 0.4 to 2.1 K/F with over all increasing about 9.02%.

Fig2

Table (2): Mean squares of nuclei cultivated in nine seasons from 2001 to 2009

Years	S. O .V.	d. f.	S.C.Y. (gm / Plot)	Lint Y. (gm / Plot)	BW (50 bolls)
2001	Replications	5	387846.400	190635.20	181.2031
	Genotypes	15	48154.667**	6919.622**	119.6823
	Error	75	88293.12	12629.40	155.1839
2002	Replications	5	1407446.19**	178073.49**	410.30
	Genotypes	14	339520.38*	46224.429	1019.427
	Error	70	184252.71	25755.648	5988.251
2003	Replications	5	244265.60	42595.20	160.9125
	Genotypes	15	558696.889**	82639.067**	140.617
	Error	75	168052.529	24817.775	126.766
2004	Replications	5	3405795.56**	448045.867**	70.8444
	Genotypes	17	80861.49	11331.294	73.8775
	Error	85	95976.893	13512.113	94.021
2005	Replications	5	320445.926	43650.382	42.057*
	Genotypes	17	179189.161	29722.786	64.048**
	Error	85	196473.965	26801.952	14.979
2006	Replications	5	143071.875	20084.037	65.646
	Genotypes	19	148810.647*	24959.423*	142.877**
	Error	95	88109.068	12342.111	67.857
2007	Replications	5	1027363.875**	148049.887**	51.620
	Genotypes	19	191501.524	29904.265	15352.893**
	Error	95	190890.629	27470.869	70.532
2008	Replications	5	463235.508	64551.468	28.564
	Genotypes	19	619610.443	85663.660	13580.520**
	Error	95	379802.596	52024.762	35.731
2009	Replications	5	3478026.208**	476647.601**	42.833
	Genotypes	19	690241.787	107503.483	18212.895**
	Error	95	564510.419	77273.279	40.289

For lint cotton yield, the results showed that Giza 89 x Giza 86 was better than Giza 86 over all years except in 2004 and 2007 seasons which Giza 86 was better with slight differences in which the other years the increasing swings and reached to 2.4 K/F in 2005. The general grand mean over all seasons revealed that the promising cross had surpassed Giza 86 by one C/F (7.4%). Meanwhile, for lint percentage Giza 86 had surpassed the promising cross (G.89 x G.86) by 1.4 %. With regarding to boll weight in grams, there no differences between two genotypes overall seasons.

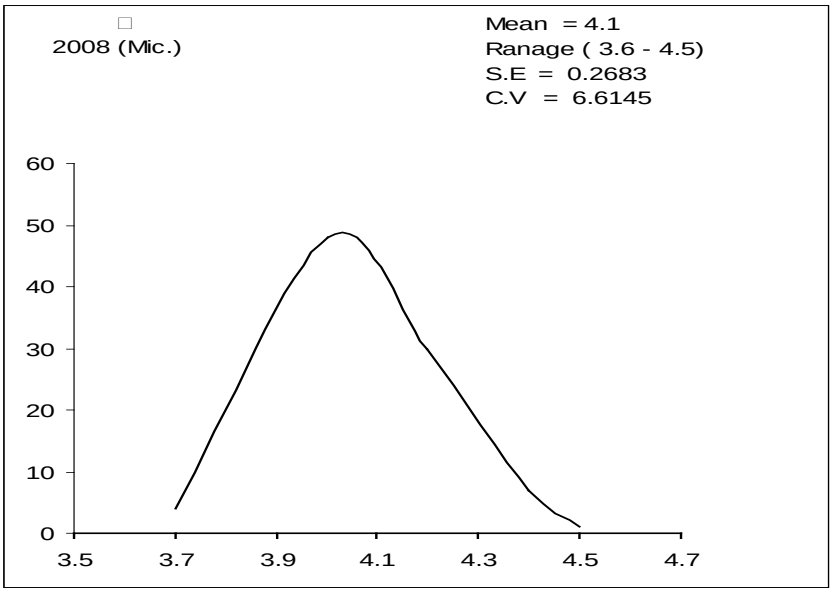

Fig. 3: Micronaire reading distribution within 90 selected single plants of the new promising cross during 2008

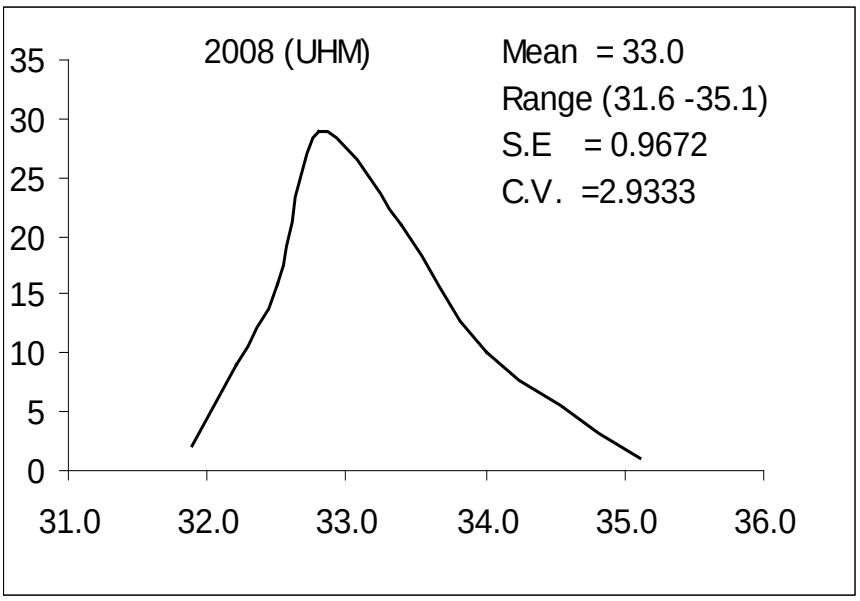

Fig. 4: Length distribution within 90 selected single plants of the new promising cross during 2008

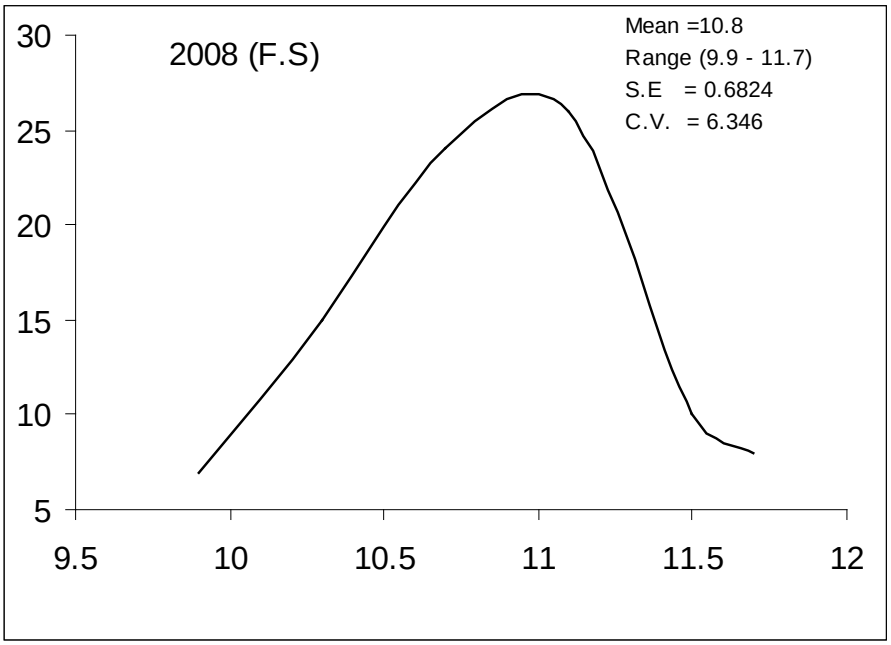

Fig. 5: Fiber strength distribution within 90 selected single plants of the new promising cross during 2008

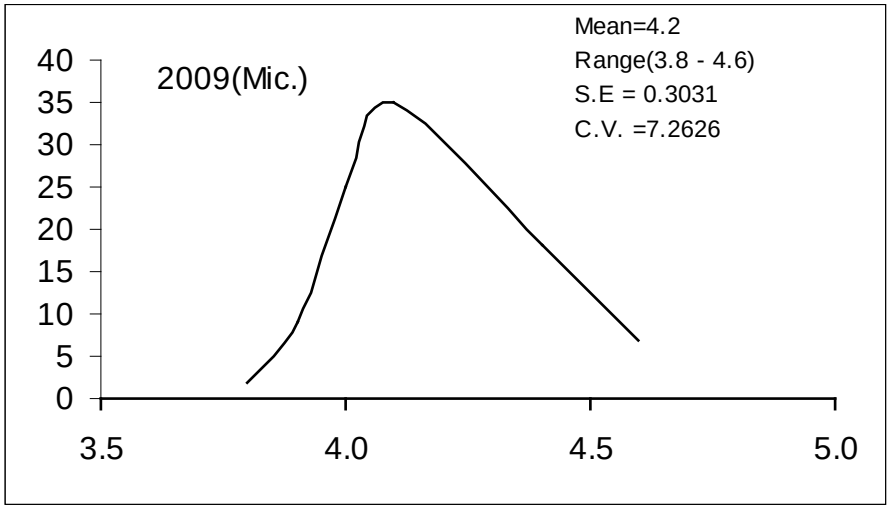

Fig. 6: Micronaire reading distribution within 96 selected single plants of the new promising cross during 2009

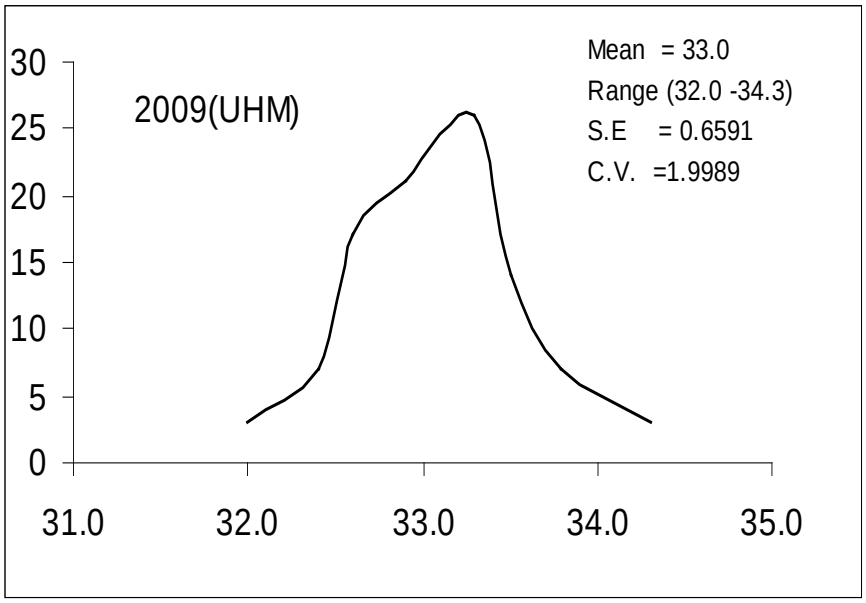

Fig. 7: Fiber strength distribution within 96 selected single plants of the new promising cross during 2009

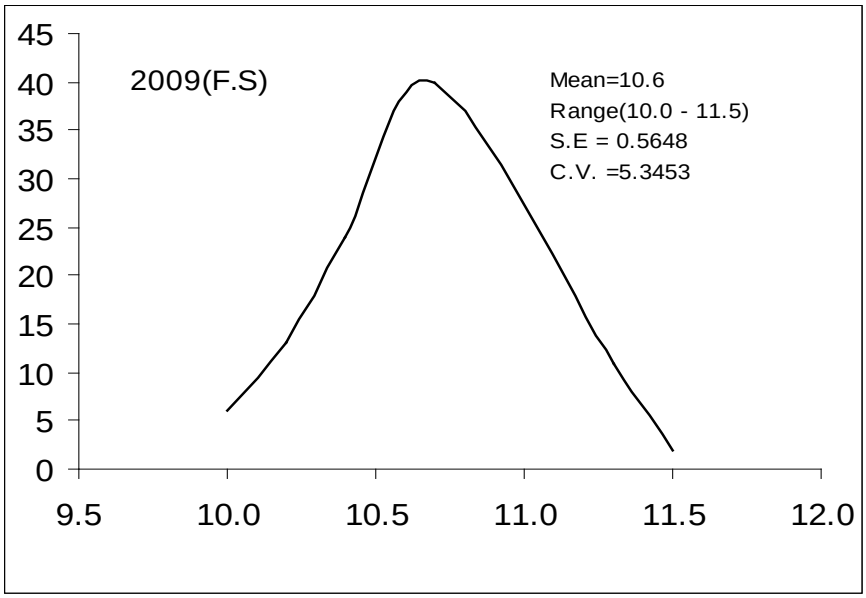

Fig. 8: Fiber strength distribution within 96 selected single plants of the new promising cross during 2009

Table (3): Characters of selected nuclei which form the breeder seed 1/ 2001

nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W	UHM	Stel	Yarn St.
2/2001	7.37	8.62	37.14	127	33.67	3.8	140	33.2	32.4	2280
3/2001	7.52	8.31	35.07	125	42.12	3.8	142	31.9	32.1	2295
6/2001	7.90	8.89	35.74	118	36.45	3.9	152	33.4	31.2	2185
7/2001	7.42	8.31	35.55	125	30.53	3.7	135	32.5	32.0	2240
9/2001	7.43	8.38	35.79	114	26.30	3.8	140	32.9	32.2	2180
10/2001	7.75	8.62	35.33	116	31.35	3.8	140	33.2	31.8	2265
11/2001	7.34	8.40	36.34	119	34.21	3.7	135	33.2	28.9	2120
14/2001	8.02	9.07	35.90	127	29.93	3.6	136	33.4	32.8	2110
Trial Mean	7.36	8.28	35.71	121	31.60	3.8	140	32.4	31.5	2215

Table (4): Characters of selected nuclei which form the breeder seed 2/ 2002

nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W.	UHM	Stel.	Yarn St.
2/2002	9.29	10.63	36.32	169	36.86	4.3	153.0	32.4	41.6	2480
7/2002	8.45	9.65	36.25	173	35.11	4.2	150.0	32.6	40.8	2560
8/2002	7.91	9.00	36.13	168	31.12	4.1	154.0	32.0	40.8	2600
12/2002	8.94	10.03	35.61	171	35.54	4.2	152.0	32.4	41.9	2370
13/2002	8.94	10.20	36.23	168	33.41	4.2	153.0	33.0	40.8	2340
14/2002	9.16	10.43	36.14	168	33.10	4.2	154.0	33.2	40.9	2410
Breeder 1	8.81	10.08	36.33	178	33.63	4.3	155.0	32.7	40.2	2365
Trial Mean	7.97	9.10	36.3	169	33.2	4.2	152.8	32.7	40.9	2449

Table (5): Characters of selected nuclei which form the breeder seed 3/ 2003

Nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W.	UHM	Stel.	Yarn St.
5/2003	12.65	15.31	38.41	168	53.6	4.4	155	32.8	40.7	2300
6/2003	12.35	14.83	38.13	170	55.2	4.4	150	32.4	40.4	2340
8/2003	12.32	14.71	37.91	165	52.3	4.5	150	32.2	40.2	2310
11/2003	14.60	17.96	39.06	165	48.4	4.4	152	31.8	41.3	2380
12/2003	12.25	14.86	38.50	160	56.6	4.4	153	32.5	41.2	2250
13/2003	13.77	16.80	38.73	173	53.3	4.5	153	32.6	40.0	2360
Breeder 2	11.81	14.49	38.96	166	55.5	4.4	154	32.6	40.8	2365
Breeder 1	11.77	14.27	38.50	170	58.1	4.5	156	32.1	40.7	2455
Trial Mean	12.79	15.51	38.48	167	53.7	4.4	153	32.2	40.6	2352

Table (6): Characters of selected nuclei which form the breeder seed 4 / 2004

nuclei	S.C.Y (K/F)	Lint Y (K/F)	Lint %	BW	E%	Mic	H.W	UHM	Stel.	Yarn St.
4/2004	12.54	14.69	37.19	149	42.87	4.3	165	32.8	40.3	2460
7/2004	13.05	16.79	40.85	147	36.72	4.4	163	32.4	43.6	2620
9/2004	13.17	14.62	35.24	149	37.09	4.4	167	31.9	46.6	2600
11/2004	12.94	15.46	37.92	148	31.79	4.4	167	32.7	45.3	2650
13/2004	12.53	14.84	37.61	148	34.21	4.4	167	32.1	43.3	2490
Breeder 3	12.60	14.84	37.38	149	36.01	4.3	164	32.1	47.1	2630
Breeder 2	12.32	14.48	37.31	147	39.10	4.4	168	31.5	44.6	2580
Breeder 1	12.49	14.59	37.08	146	36.13	4.4	169	32.6	48.6	2750
Trial Mean	12.40	14.58	37.33	149	37.57	4.4	166	32.1	44.8	2589

Table (7): Characters of selected nuclei which form the breeder seed 5/ 2005

nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W	UHM	Stel	Yarn St.
1/2005	13.28	15.80	37.77	173	70.62	4.2	152	32.6	37.8	2420
5/2005	12.59	14.78	37.27	164	64.88	4.2	153	34.0	44.5	2860
6/2005	12.68	14.54	36.41	167	69.08	4.2	152	32.5	38.1	2465
7/2005	12.45	14.50	36.97	163	67.77	4.2	153	33.0	38.4	2460
8/2005	12.81	15.12	37.47	164	65.50	4.2	152	32.0	40.6	2580
14/2005	13.73	16.20	37.45	165	66.74	4.2	154	33.0	41.2	2490
Breeder 4	12.78	14.95	37.13	163	71.27	4.2	156	32.0	41.2	2490
Breeder 3	12.08	14.55	38.25	163	71.59	4.2	154	33.0	39.8	2490
Breeder 2	12.78	15.14	37.59	162	65.96	4.3	154	33.0	44.3	2670
Breeder 1	12.94	15.10	37.05	161	71.01	4.2	156	33.2	42.8	2595
Trial Mean	12.57	14.70	37.12	165	67.36	4.2	154	32.5	41.5	2561

Table (8): Characters of selected nuclei which form the breeder seed 6/ 2006

Nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W.	UHM	Stel.	Yarn St.
2/2006	10.96	13.30	38.53	156	42.54	4.5	160	31.6	47.3	2660
5/2006	10.65	12.78	38.08	159	34.15	4.1	151	32.5	47.3	2770
6/2006	10.55	12.54	37.75	152	34.65	3.7	147	32.7	47.1	2750
7/2006	10.48	12.58	38.09	158	32.92	4.4	153	32.6	46.7	2675
9/2006	10.21	11.82	36.75	157	40.97	4.1	152	32.4	47.1	2750
14/2006	10.37	12.38	37.89	157	35.83	4.2	154	32.6	48.0	2825
Breeder 5	9.76	11.63	37.83	158	35.85	4.4	158	33.2	47.5	2865
Breeder 4	9.23	10.87	37.38	156	37.17	4.6	164	33.6	47.1	2865
Breeder 3	10.25	12.24	37.92	155	30.93	4.3	156	33.1	48.8	2855
Breeder 2	10.30	12.19	37.59	161	38.19	4.1	151	33.4	48.1	2820
Trial Mean	10.10	11.97	37.62	158	35.09	4.3	155	32.6	47.2	2757

Table (9): Characters of selected nuclei which form the breeder seed 7 / 2007

nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	E%	Mic	H.W.	UHM	Stel.	Yarn St.
6/2007	15.40	18.57	38.29	168	59.5	4.4	159	32.3	50.4	2800
16/2007	14.41	17.20	37.90	164	50.3	4.4	161	32.7	46.8	2675
17/2007	14.15	16.97	38.06	159	52.7	4.0	140	32.8	50.7	2880
18/2007	15.34	18.25	37.76	155	50.2	4.3	154	33.5	50.9	2840
Breeder 6	13.94	16.65	37.93	162	50.2	4.4	157	32.6	44.4	2700
Breeder 5	14.93	17.86	37.97	161	53.2	4.4	159	32.9	50.3	2765
Trial Mean	14.06	16.83	38.01	163	52.7	4.3	155	32.5	47.2	2742

Table (10): Characters of selected nuclei which form the breeder seed 8 / 2008

Nuclei	S.C.Y (K/F)	Lint Y (K/F)	Lint %	BW	E%	Mic	H.W.	UHM	Stel.	Yarn St.
2/2008	15.01	17.75	37.55	147	66.2	4.1	151	32.9	46.4	2625
4/2008	13.88	16.24	37.16	147	57.6	4.4	157	32.2	46.0	2670
6/2008	16.81	19.80	37.38	157	60.5	4.4	158	32.2	46.0	2625
8/2008	14.36	17.10	37.80	155	55.5	4.5	160	33.6	45.0	2670
Breeder 7	14.50	17.15	37.55	156	59.9	4.3	150	33.6	46.1	2510
Breeder 6	13.81	16.06	36.91	154	56.4	4.4	157	32.6	44.4	2700
Trial Mean	14.44	16.87	37.08	154	57.2	4.4	158	33.5	46.0	2728

Table (11): Characters of selected nuclei which form the breeder seed 9 / 2009

nuclei	S.C.Y. (K/F)	Lint Y. (K/F)	Lint %	BW	Ear. %	Mic.	UHM	Stel.	Yarn St.
2/2009	15.5	17.9	36.74	182	53.7	4.3	32.4	47.3	2390
3/2009	17.1	20.0	37.07	174	57.5	4.4	31.3	45.4	2435
4/2009	15.0	17.4	36.91	182	49.1	4.4	33.9	46.9	2505
5/2009	16.8	19.7	37.19	188	61.2	4.4	33.7	45.3	2480
6/2009	14.4	17.0	37.27	168	61.6	4.3	32.8	44.4	2520
7/2009	14.8	17.6	37.84	178	61.6	4.2	33.4	46.5	2510
8/2009	15.7	18.4	37.18	177	53.9	4.3	32.9	47.9	2430
9/2009	14.8	17.3	37.12	182	56.7	4.4	32.3	46.1	2575
11/2009	14.7	17.3	37.52	173	54.8	4.2	33.4	46.8	2560
15/2009	14.4	17.1	37.65	175	55.7	4.4	32.1	46.6	2550
Breeder 8	15.0	17.3	36.72	168	57.0	4.4	32.8	44.5	2440
Breeder 7	15.1	17.8	37.41	180	60.1	4.3	33.6	46.1	2510
Trial mean	14.6	17.1	37.02	178	55.4	4.3	33.0	46.1	2485

For earliness percentage, Giza 89 x Giza 86 revealed continues superiority over 8 years. These results agreement with former research in introduce new varieties for Rahoumah *et al* (2008).

Concerning fiber quality, the results observed resemble between the two genotypes with slight differences, but in general the grand mean was in favor of the promising cross.

The seeds of the new promising cross were tested against the Fusarium wilt in the Cotton Disease Research Section. The results obtained showed highly significant resistances against Fusarium wilt.

From the aforementioned the results refer to using the new genotypes Giza 89 x Giza 86 as a good substitute for the commercial variety Giza 86

Table (12): Comparison of mean promising cross and the commercial variety Giza 86 concerning yield components, earliness and fiber properties

Traits	Genotypes	Seasons								Mean
		2009	2008	2007	2006	2005	2004	2003	2002	
S.C.Y. (K/F)	G.89/G.86	13.1	10.6	11.3	10.4	9.4	13.7	12.7	10.2	11.41
	G.86	11.8	9.9	10.9	9.9	7.3	13.4	11.1	8.7	10.38
	LSD 0.05	0.806	0.834	1.033	0.826	0.688	0.789	0.691	0.645	
	0.01	1.059	1.096	1.358	1.086	0.904	1.037	0.909	0.848	
L.Y. (K/F)	G.89/G.86	15.3	12.5	13.1	12.4	11.1	16.45	15.29	11.70	13.49
	G.86	14.4	12.2	13.2	12.2	8.7	16.71	14.03	10.50	12.75
	LSD 0.05	0.946	1.004	1.227	0.987	0.807	0.972	0.835	0.756	
	0.01	1.244	1.319	1.613	1.297	1.060	1.278	1.097	0.993	
L %	G.89/G.86	37.3	37.6	36.7	37.6	37.5	38.1	38.3	36.6	37.5
	G.86	38.6	38.9	38.4	39.3	38.0	39.6	40.1	38.2	38.9
B W	G.89/G.86	3.1	3.0	3.1	3.0	3.0	3.2	3.0	3.1	3.1
	G.86	3.2	3.0	3.2	3.0	3.0	3.2	3.1	3.1	3.1
Ear. %	G.89/G.86	71.5	69.2	73.9	66.4	72.0	68.7	74.3	70.8	70.9
	G.86	64.9	60.4	66.2	59.4	69.7	55.5	61.1	63.0	62.5
Mic.	G.89/G.86	4.3	4.2	4.3	4.1	4.1	4.3	4.3	4.4	4.2
	G.86	4.5	4.2	4.5	4.1	4.3	4.3	4.2	4.4	4.3
H.W.	G.89/G.86	150	155	156	147	151	160	141	158	152
	G.86	157	155	162	148	154	158	143	161	155
Yarn st.	G.89/G.86	2499	2330	2657	2665	2564	2453	2225	2302	2462
	G.86	2498	2280	2712	2582	2508	2513	2209	2302	2451
Stel.	G.89/G.86	43.5	41.1	46.3	43.2	44.8	41.3	41.0	40.9	42.8
	G.86	44.1	42.2	45.6	43.0	44.6	42.4	41.2	38.2	42.7
UHM	G.89/G.86	32.1	32.2	32.8	32.8	31.8	31.9	31.7	32.1	32.2
	G.86	32.3	33.2	32.5	32.5	32.2	32.9	32.7	32.3	32.6

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جيزة 89 x جيزة 86 هجين مبشر من طبقة الأقطان المصرية طويلة التيلة

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تستخدم طريقة سجلات النسب كطريقة معتمدة لاستنباط أصناف القطن المصري وقد تم استنباط الهجين جيزة 89 x جيزة 86 بهذه الطريقة فى معهد بحوث القطن بالجيزة. ينتمي هذا التركيب الوراثي إلى طبقة الأصناف طويلة التيلة وجه بحري.

ويمتاز هذا التركيب الوراثي بمحصول قطن زهر 11.41 قنطار/فدان ومحصول قطن شعر 13.49 قنطار/فدان وتصافى حليج أكثر من 37 % ومتوسط وزن لوزة من 3 الى 3.2 جم وطول تيلة من 32.2 إلى 33.2 مم ونعومة من 4.1 إلى 4.3 ووزن الشعرة يتراوح من 141 إلى 160 ملليتكس ومتانة تيلة من 40.9 إلى 46.3 جم / تكس ومتانة الغزل زادت عن 2500 وحدة

ويتميز هذا الهجين بالمحصول العالي والتبكير بالمقارنة بالصنف التجاري جيزة 86 لذا يعتبر الهجين جيزة 89 x جيزة 86 بديل جيد للصنف جيزة 86 حيث يزداد الهجين فى محصول القطن الزهر ق/ف بحوالي 10% وفى محصول القطن الشعر ق/ف بحوالي 7.5% على مستوى تجارب المصغرات المتقدمة (ب) على مدى ثمانية سنوات متتالية (2002 – 2009) كما تتميز نباتات الهجين بالمقاومة لمرض الذبول الفيوزاريومى.

قام بتحكيم البحث

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