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COMPARATIVE STUDY ON FOUR SUCCESSIVE NUCLEI SEEDS OF GIZA 80 COTTON CULTIVAR AND THE CORRESPONDING FARMER'S SEEDS IN TWO DIFFERENT LOCATIONS

Nageb, M.A.
Cotton Research Institute, Agricultural Research Center, Giza, Egypt

ABSTRACT

Four successive pure nuclei of Giza 80 cotton cultivar (N) and their corresponding farmer's seeds (F) were used to study the changes that might occur in yield and quality after using the seeds in general planting. The field experiments were carried out in two different locations (Minya and Sohag) through three successive growing seasons (1997, 1998 and 1999). The experimental design was randomized complete blocks design with four replications.

The results indicate that the source of variability among studied genotypes and genotypes by locations interactions were, basically, due to the differences of farmer's seeds (F), (N) vs. (F.) and their interactions with locations. It could be also, concluded that the lint percentage and lint index characters considered to be good indicators of degeneration as well as the yarn strength trait; which were affected by the presence of off-type seeds. The increasing of off-type locks percentage exhibited negative effects on lint percentage and lint index characters. The results, also, indicated that the mistakenly handling of the farmer's seeds including off-type seed's in general farms might cause deterioration during two years.

INTRODUCTION

Cotton breeders in many parts of the world successfully maintain cotton cultivars by different procedures. The cause of varietal deterioration, which the maintenance system guards have been reviewed by many workers; O'kelly (1942), Simpson and Duncan (1953) and Lewis (1970). They reported that the important reasons of degeneration of a variety were; mechanical mixing, natural mutations, gene frequency changing caused by random genetic drift and natural selection, gene frequency changing by selection pressure exerted by breeder and loss of heterozygosity with respect to the investigations in Egyptian cotton; Abdel-Al (1976) found that lint index and lint percentage started to deteriorate badly in the fifth year of general use of Giza 66 cotton variety, while all fiber properties remained unchanged except yarn strength trait. Abdel-Al *et al.* (1979) and El-Akkad and El-Kilany (1980) in another study pointed out that using the strains in general farms exhibited less lint percentage and yarn strength characters comparing to the corresponding pure strains. They, also, found that the older strains gave lower values for these two characters comparing to the other study characters, yield, yield components and fiber properties. El-Kilany and Youssef (1985) reported that the older farmers seed strains gave lower estimates for micronaire value and fiber fineness. Ghoneim *et al.* (1997) found no significant differences among five Dendera nuclei and their corresponding farmer's seeds for yield and yield components while, found slight differences in yarn strength and fiber length in one season. Abo-Arab *et al.* (1999) stated

that the oldest strain gave the lowest mean performance for most fiber traits. Hemaida (2000) found that the presence of off-type plants, as a results of misleading in handling seeds in the general farms, gave bad effects on lint percentage and lint index and fiber strength.

The main objectives of the present investigation was to compare the seeds of Giza 80 cotton cultivar that were used in general planting (farmer's seeds) with the corresponding pure nuclei seeds. in addition to study the effect of off-type locks, that may be found in some strains, on some yield components characters in Giza 80 cultivar.

MATERIALS AND METHODS

Two experiments were conducted in two different locations for three successive growing seasons from 1997 to 1999. These locations were El-Minya and Sohag governorates, which are the representative regions of Middle and Upper Egypt, respectively.

Four successive nuclei seeds were compared with the corresponding farmer's seeds in general planting. The nuclei seeds (N) were derived forma a renewal of breeder's seed field. These seeds were designated by the name of the variety (Giza 80) and the year of production as a foundation seeds, thee nuclei seeds were characterized by high degree of purity. The farmer's seeds (F) were obtained from the Seed Testing Stations at Beni Suef governorate. These seeds were handled in the general farms for at least more than one year.

A randomized complete blocks design with four replications was used for each experiment. Each plot consisted of five ridges; 4 meters long each with 20 hills spaced by 20 cm apart and the distance between ridges were 60 cm. Seedling were thinned to two plants per hill. Normal agronomic practices were followed as the recommendation.

Random samples of 25 sound bolls were picked from each plot and used to estimate yield components. A representative sample of cotton from each plot was used to test fiber and yarn properties at Cotton Technology Research Lab. at Giza, Cotton Research Institutes.

The studied characters included: Seed cotton yield (kantar/feddan) (S.C.Y.) boll weight (B.W), lint percentage (L.P), seed index (S.I), lint index (L.I), span length (S.L) at 2.5% and 50%, hair weight (H.W), micronaire reading (Mic.) and yarn strength (Y.St).

The estimation of off-type locks was made in 1999 growing season; (these locks seem to be incised and pierced by their thorny seeds, which give a loss-shape locks, Hemaida (2000). The percent of off-type locks (OTL) % was calculated by divided the weight of off-type locks in a sample/the total weight in the same sample.

The analysis of variances for the randomized complete blocks design were carried out for agronomic characters in each location separately as outlined by Snedecor and Cochran (1971), the combined analysis for the two locations were computed according to LeClerg *et al.* (1962). Duncan's M.R.T. was conducted to determined the significant differences among the means at 0.05 levels.

Table (1): Analysis of variance of nucleus seeds an its corresponding farmer's seed for yield and its components in three successive seasons in middle and upper Egypt.

S.O.V.	Year	D.F.	S.C.Y.		B.W		L.P.		S.I.		L.I.	
			Sohag	Minya	Sohag	Minya	Sohag	Minya	Sohag	Minya	Sohag	Minya
Replicates	97	3	2.992*	32.55**	0.074*	0.099	2.644	0.701	0.227	0.263	0.133	0.127
	98	3	1.163	29.956*	0.187	0.008	1.278	0.499	0.148	0.119	0.070	0.047
	99	3	0.606	3.478	0.021	0.053	1.060	0.297	0.219	0.084	0.154	0.009
Genotypes	97	7	1.287	28.136**	0.012	0.059	19.79**	23.128**	0.364	2.070**	1.294**	1.017**
	98	7	2.196	8.372	0.086	0.069**	42.029**	24.684**	0.217	0.160	2.841**	1.676**
	99	7	6.909*	0.344*	0.068*	0.095**	63.201**	27.497**	0.579**	0.641*	3.313**	1.369**
Nuclei seed (N)	97	3	0.162	6.512	0.014	0.673	4.669	1.278	0.771	1.989*	0.209	0.627*
	98	3	1.127	4.043	0.029	0.048	3.802	1.624	0.021	0.082	0.301	0.043
	99	3	2.137	3.135	0.625	0.044	2.563	2.459	0.110	0.624*	0.524	0.059
Farmer's seed (F)	97	3	2.114	38.76**	0.014	0.049	17.212**	20.707**	0.069	0.889	1.037*	1.088**
	98	3	1.705	1.438	0.150*	0.005	17.402**	25.932**	0.266	0.062	1.129*	2.011**
	99	3	3.478	0.931	0.066	0.128**	53.841**	41.534**	0.280*	0.204	3.144**	2.526**
(N) vs. (F)	97	1	2.180	61.128**	0.003	0.061	72.903**	95.911**	0.026	5.857**	5.324**	1.976**
	98	1	6.635	42.158*	0.062	0.320**	230.59**	90.116**	0.661	0.690	15.599**	5.545**
	99	1	31.515**	11.896**	0.096*	0.147*	273.20**	60.500**	2.880**	2.000**	12.185**	1.827**
Error	97	21	0.771	4.032	0.023	0.059	2.685	1.559	0.313	0.457	0.233	0.159
	98	21	1.887	6.522	0.047	0.018	2.988	1.865	0.341	0.252	0.148	0.231
	99	21	2.458	1.362	0.021	0.023	5.948	1.263	0.086	0.170	0.364	0.047

RESULTS AND DISCUSSIONS

The analyses of variance for the agronomic characters in the two locations for the three successive growing season are shown in Table 1. The differences among the genotypes for lint percentage and lint index were highly significant at the two locations in the three successive growing seasons comparable with the other traits. By partitioning the mean squares of genotype into their components, it was noticed that the source of the variability among genotypes was mainly due to the differences among the farmer's seeds (F) and also due to the (N) vs. (F).

The combined analysis over the two locations are represented in Table 2. The mean squares of locations for boll weight, seed index and lint index characters were significantly different, while the seed cotton yield and lint percentage characters are slightly affected by locations changing. On the other hand, the genotype mean squares exhibited high significant differences for lint percentage and its related characters lint index in the three successive seasons, while boll weight and seed index characters were differed in two seasons out of the three seasons. By partitioning the mean squares of genotypes into their components, it was seen that the source of variability mostly, come from the farmers seed (F) and (N) vs. (F) mean squares. The interaction mean squares were detected only in 1999 growing season for most characters. The major sources of variability were due to the (F) x L and (N) vs. (F) x L mean squares.

From the previous results, it could be concluded that the source of variability of genotype and the interaction of G X L was mainly due to the farmer's seeds rather than the nuclei seeds mean squares. These results confirmed that all the nuclei seeds were maintained pure and have the same performances, however, the farmer seeds, relatively, have not the same performances as a result of mistakes in handling the seeds in general planting, and consequently, the seeds exposed to be mixed with the off-type seeds.

Also, it was found that the lint percentage and lint index characters are rapidly, affected when there was deterioration, meanwhile, these traits could be considered as an indicator of degeneration. Similar results were obtained by Abdel-Al (1976), Abdel-Al *et al.* (1979) and El-Kilany (1980).

Concerning the means of agronomic characters in Table 3, it could be noticed that the farmer's strains exhibited reduction for lint percentage character at the two locations and through the three successive growing seasons followed by lint index. Also the reductions were obvious for the oldest farmer's strains Giza 80/93, Giza 80/94, Giza 80/95 in 1997 season, Giza 80/94, Giza 80/95 and Giza 80/96 and Giza 80/95, Giza 80/96 and Giza 80/97 in 1999 season. These results indicated that the reduction in lint percentage and lint index characters began to happen after two seasons of handling the seeds in the general planting. These results emphasized that the degeneration of these farmer's strains was a result of mixture by off-type seeds. Abdel-Al *et al.* (1979) reported that the period of handling and multiplication of the registered and the certified seeds in the general planting depend on the degree of the purification from the off-type seeds.

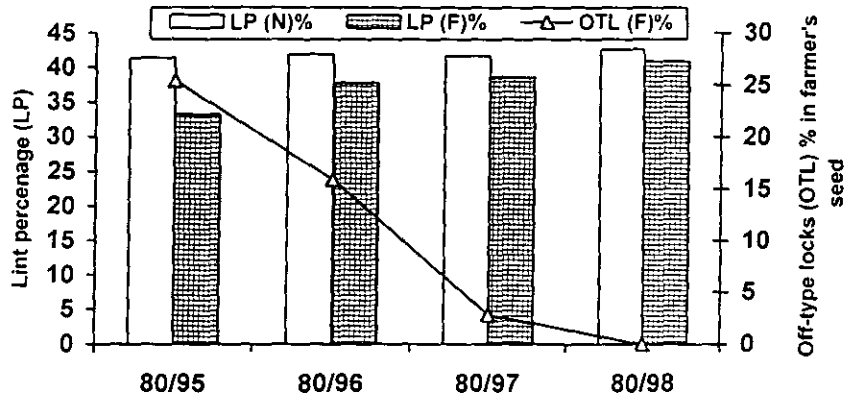
Table (2): Combined analysis of nucleus seed and farmer's seed for yield and its components variables in three successive seasons.

S.O.V.	D.F.	Year	S.C.Y.	B.W.	L.P.	S.I.	L.I.
Location (L.)	1	1997	42.830	2.139**	4.785	1.443	0.00
	1	1998	1.503	0.856**	8.266	0.833*	1.931**
	1	1999	13.377*	0.272*	0.140	5.523**	2.308**
Genotype (G)	7	1997	20.288**	0.043	41.026**	1.239**	1.996**
	7	1998	7.367	0.105**	62.188**	0.291	4.103**
	7	1999	2.781	0.571*	78.787**	1.115**	3.930**
Nucleuses seed (N)	3	1997	4.188	0.037	2.762	1.067	0.414
	3	1998	1.744	0.037	2.701	0.044	0.173
	3	1999	4.3851	0.088*	2.406	0.530*	0.432
Farmer's seed (F)	3	1997	28.751**	0.049	36.955**	0.715	1.947**
	3	1998	1.738	0.098*	40.904**	0.185	2.777**
	3	1999	1.343	0.044	82.960**	0.429*	4.830**
(N) vs. (F)	1	1997	43.199**	0.045	168.03**	3.328**	6.891**
	1	1998	41.120**	0.330**	304.50**	1.351*	19.872**
	1	1999	2.344	0.002	295.41**	4.840**	11.724**
(G) x (L)	7	1997	9.135	0.028	1.894	1.194**	0.315
	7	1998	3.208	0.049	4.523	0.087	0.414
	7	1999	7.561**	0.106**	11.911**	0.104	0.752**
(N) x (L)	3	1997	2.486	0.044	3.1942	1.693**	0.422
	3	1998	3.426	0.040	2.725	0.059	0.172
	3	1999	0.888	0.018	2.615	0.204	0.151
(F) x (L)	3	1997	12.126**	0.015	0.964	0.243	0.178
	3	1998	1.485	0.058	2.431	0.143	0.371
	3	1999	3.067	0.149**	12.414*	0.025	0.840*
(N vs. F) x (L)	1	1997	20.109**	0.019	0.787	2.554*	0.409
	1	1998	7.6735	0.051	16.202*	0.0	1.272*
	1	1999	41.006**	0.241**	38.285**	0.040	2.288**
Error	42	1997	2.4016	0.041	2.122	0.385	0.196
	42	1998	4.205	0.032	2.425	0.296	0.194
	42	1999	1.901	0.0220	3.606	0.128	0.205

With respect to the fiber properties, the results in Table (4) shows that the mean of Y. St. character was higher in nuclei strains (N) than in farmer's strains (F) in the two locations and through the three successive seasons. On the other hand, 2.5% and 50% S.L traits showed slight differences. Also, it could be to mentioned here that the C.V % belongs to (N), was lower than that of (F), meanwhile, there were percents of variability among farmer's strains. these results were in agreement with El-Kilany and Youssef (1985), Ghoneim *et al.* (1997) and Abo-Arab *et al.* (1999) who reported that yarn strength character is sensitive for the influence of the deterioration.

With respect to the effect of the off-type locks (OTL) % among the standard locks of the farmer's strains, Fig. (1) illustrate a negative relationship, between the increasing of off-type locks and the reduction o f lint percentage and lint index characters of the farmer's seeds in 1999 growing season. It could be indicated that the pure strains showed a stable performance in both characters compared to the farmer's strains. The older strains have higher percentage of off-type locks than the new ones. Hemaida (2000) reported that the off-type locks in Giza 80 exhibited low lint percentage, lint index and fiber strength, so the existence of the off-type plants in the general farms caused reduction for
these economic characters of Giza 80 cultivar.

Fig. (1): Effect of off-type locks that are found in farmer's seed on the lint percentage and lint index characters in 1999 season.



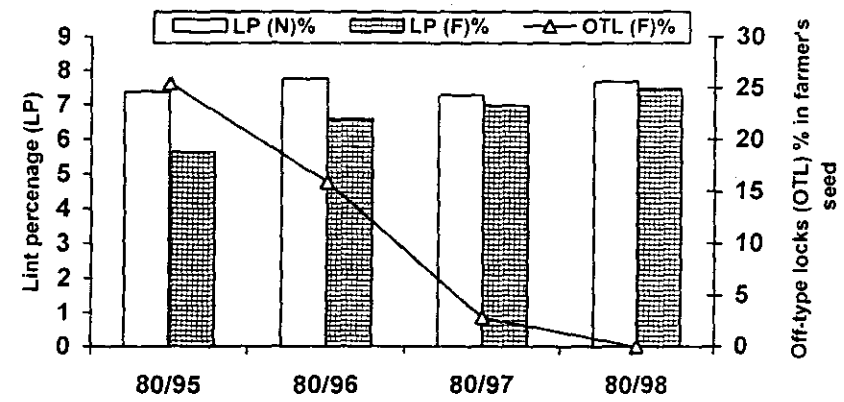


Table (3): The mean performances of nucleus seed (N) and farmer's seeds (F) at two different locations and the combined for yield and its components in the three successive seasons.

Year	Strain		S.C.Y			B.W			L.P			S.I			L.I		
			Minya	Sohag	Comb.	Minya	Sohag	Comb.	Minya	Sohag	Comb.	Minya	Sohag	Comb.	Minya	Sohag	Comb.
1997	80/93	N	14.47 a	10.59	12.53 a	3.32	2.88	3.10	38.2 ab	38.7 ab	38.4 ab	12.0 ab	11.3	11.7 ab	7.47 a	7.12 ab	7.30 a
	80/94		14.22 a	10.8	12.51 a	3.05	2.82	2.94	38.9 ab	37.4 ab	38.2 ab	10.3 c	11.6	11.0 bc	6.57 bc	6.94 ab	6.76 b
	80/95		11.7 ab	10.31	11.01 a	3.32	2.75	3.04	39.1 a	40.0 a	38.5 a	11.1 bc	10.6	10.9 c	7.14 ab	7.07 ab	7.11 ab
	80/96		12.96 a	1061	11.78 a	3.22	2.88	3.05	37.9 ab	39.4 ab	38.6 ab	11.1 bc	11.5	11.3 bc	6.78 bc	7.48 a	7.13 ab
	Mean		13.34	10.58	11.96	3.23	2.83	3.03	38.52	38.87	38.67	11.12	11.25	11.22	6.99	7.15	7.8
	80/93	F	7.18 c	9.05	8.12 b	3.22	2.90	3.06	33.2 c	33.7 d	33.4 c	12.6 a	11.4	12.0 a	6.25 cd	5.83 d	6.04 c
	80/94		8.78 bc	9.99	9.38 b	3.08	2.78	2.92	33.0 c	34.6 cd	33.8 c	12.0 ab	11.3	11.6 ab	5.90 d	5.98 cd	5.94 c
	80/95		13.83 a	10.55	12.19 a	3.25	2.80	3.02	37.0 b	37.0 bc	37.0 b	12.1 ab	11.4	11.7 ab	7.08 ab	6.67 b c	6.88 ab
	80/96		12.5 a	10.63	11.57 a	3.02	2.78	2.90	37.1 ab	38.2 ab	37.6 b	11.4 b	11.1	11.3 bc	6.74 bc	6.87 ab	6.81 ab
	Mean		10.57	10.06	10.31	3.14	2.81	2.98	35.1	35.9	35.4	12.0	11.3	11.7	6.49	6.34	6.42
1998	80/93	N	10.68	10.51	10.59	3.30 ab	2.95	3.12 ab	39.2 a	37.2 ab	38.2 a	11.8	11.6	11.6	7.59 a	6.87 ab	7.23 a
	80/94		10.03	11.25	10.64	3.20 a-c	2.85	3.02 ab	39.0 a	41.0 a	40.0 a	11.8	11.4	11.6	7.60 a	7.89 a	7.74 a
	80/95		12.36	10.42	11..39	3.12 bc	3.05	3.09 ab	40.2 a	40.6 a	40.4 a	11.6	11.4	11.5	7.75 a	7.81 a	7.78 a
	80/96		10.63	9.97	9.53	3.38 a	3.00	3.19 a	40.2 a	39.5 ab	39.8 a	11.6	11.4	11.5	7.79 a	7.46 ab	7.62 a
	Mean		1.92	10.54	10.54	3.25	2.96	3.10	39.65	39.6	39.6	11.7	11.4	11.6	7.68	7.51	7.59
	80/93	F	9.21	8.97	9.09	3.00 c	2.65	2.82 c	33.6 c	33.4 c	33.6 c	12.1	11.9	12.0	6.18 c	6.02 c	6.10 b
	80/94		8.77	9.89	9.33	3.08 c	3.10	3.09 ab	35.0 bc	33.4 c	34.2 bc	11.9	12.0	12.0	6.44 bc	6.02 c	6.23b
	80/95		7.79	9.21	8.50	3.08 c	2.80	2.94 bc	36.8 b	33.6 c	35.3 b	12.0	11.5	11.8	7.00 ab	5.84 c	6.42 b
	80/96		8.74	10.44	9.59	3.05 c	2.95	3.08 a-c	39.6 a	37.7 b	38.7 a	11.8	11.6	11.7	7.79 a	7.01 b	7.40 a
	Mean		8.63	9+.63	9.13	3.05	2.88	2.98	36.3	34.58	35.4	11.9	11.8	11.9	6.85	6.22	6.54
1999	80/93	N	11.9 ab	12.11	12.0 ab	3.38 a	3.03a-c	3.21 a	40.7 a-c	42.0 a	41.4 a	11.0 a-c	10.0 d	10.5	7.52 ab	7.24	7.38 ab
	80/94		11.64 b	10.92	11.28 b	3.32 a	3.11 ab	3.21 a	40.4 a-c	43.4 a	41.9 a	11.2 a	10.4 b-d	10.8	7.59 ab	7.93	7.76 a
	80/95		12.0 ab	11.02	11.5 ab	3.23 ab	3.09 ab	3.16 a	41.5 ab	41.8 a	41.7 a	10.4 c	10.0 d	10.2	7.36 ab	7.20	7.28 ab
	80/96		13.59 a	12.33	13.0 a	3.14 a-c	2.84 c	2.99 b	42.1 a	43.2 a	42.6 a	10.5 bc	10.2 cd	10.3	7.63 a	7.72	7.68 a
	Mean		12.28	11.59	11.94	3.27	3.02	3.14	41.17	42.6	41.9	1.8	10.15	10.45	7.52	7.52	7.52
	80/93	F	10.48 b	14.96	12.6 ab	3.00 bc	3.11 ab	3.05 ab	33.6 d	32.8 c	33.2 c	11.6 a	11.1 a	11.3	5.87 c	5.40	5.63 d
	80/94		11.17 b	12.44	11.8 ab	2.98 c	3.20 a	3.09 ab	39.5 c	35.8 bc	37.7 b	11.1 ab	10.6 bc	10.8	7.26 b	5.92	6.59 c
	80/95		11.64 b	13.77	12.7 ab	3.21 a-c	3.24 a	3.22 a	40.5 a-c	36.8 b	38.6 b	11.2 a	10.8 ab	11.0	7.59 ab	6.36	6.98 bc
	80/96		10.96 b	13.42	12.2 ab	3.35 a	2.95 bc	3.15 ab	40.1 bc	41.6 a	40.9 a	11.2 a	10.5 bc	10.8	7.46 ab	7.48	7.47 ab
	Mean		11.06	13.64	12.3	3.13	3.12	3.13	38.4	36.75	37.6	11.27	10.75	10.97	7.04	6.29	6.67

Numbers have the same letters are not significant differences

Table (4): The mean performances of nucleus seed (N) and farmer's seeds (F) at two different locations and the combined for fiber properties in the three successive seasons.

Year	Strain		S.L. 2.5%			S.L. 50%			H.W			Mic.			Y.St.		
			Miny	Sohag	Mean	Miny	Sohag	Mean	Miny	Sohag	Mean	Miny	Sohag	Mean	Miny	Sohag	Mean
1997	80/93	N	30.6	31.7	31.2	15.7	15.7	15.7	176	170	173	7.7	4.4	4.5	2055	2235	2145
	80/94		30.5	31.7	31.1	15.4	15.9	15.6	180	17	175	4.4	4.5	4.6	2000	2250	2125
	80/95		30.6	31.4	31.5	15.6	15.7	15.6	177	175	176	4.4	4.4	4.4	1890	2200	2045
	80/96		31.1	31.4	31.2	15.8	15.6	15.7	174	172	173	4.5	4.3	4.3	1970	2095	2032
	Mean		30.74	31.6	31.2	15.6	15.7	15.6	177	172	174	4.4	4.4	4.4	1978	2195	2086
	C.V %		0.88	0.55	0.55	1.10	0.80	0.37	1.41	1.37	0.86	1.14	1.14	2.93	3.48	3.18	2.71
	80/93	F	29.6	31.4	30.5	14.7	15.7	15.2	174	164	169	4.6	4.4	4.4	1680	2050	1865
	80/94		29.8	1.5	30.6	14.6	15.6	15.1	170	170	170	4.7	4.4	4.4	1675	2070	1872
	80/95		30.5	31.7	31.1	15.4	15.8	15.6	172	174	173	4.4	4.6	4.5	1960	2155	2058
	80/96		30.8	31.6	31.2	15.9	15.7	15.8	179	166	172	4.3	4.4	4.4	1885	2100	1992
	Mean		30.2	31.6	30.8	15.2	15.7	15.4	174	168	171	4.5	4.4	4.4	1800	2095	1945
	C.V %		1.88	0.41	1.14	4.04	0.52	2.14	2.22	2.63	1.07	4.06	2.27	61.14	8.04	2.18	4.84
1998	80/93	N	30.3	32.0	31.2	15.2	15.7	15.4	171	167	169	4.4	4.4	4.4	32055	2055	2055
	80/94		30.6	31.6	31.1	15.2	15.3	15.2	165	175	170	4.3	4.5	4.4	2065	2035	2050
	80/95		29.7	31.9	30.8	15.0	15.6	15.3	165	172	168	4.3	4.4	4.4	2090	2050	2070
	80/96		30.7	32.5	31.6	15.3	16.1	15.7	178	172	175	4.5	4.5	4.5	2065	2060	2060
	Mean		30.3	32.0	31.2	15.2	15.7	15.4	170	172	170	4.4	4.4	4.4	2070	2050	2060
	C.V %		1.48	1.17	1.06	0.83	2.10	1.40	3.64	1.93	1.82	2.18	1.31	1.13	0.72	0.53	0.41
	80/93	F	31.1	30.0	30.6	15.3	15.1	15.2	160	166	163	4.2	4.5	4.4	1955	1890	1925
	80/94		31.0	30.3	30.6	15.2	15.0	15.1	164	172	168	4.3	4.6	4.4	1910	1865	1885
	80/95		31.7	30.5	31.1	15.8	15.0	15.4	161	163	162	4.2	4.6	4.4	1950	1885	1915
	80/96		30.0	31.8	30.9	15.1	15.8	15.4	176	168	172	4.5	4.6	4.6	1945	1940	1945
	Mean		30.9	30.6	30.8	15.4	15.2	15.3	165	172	166	4.3	4.6	4.4	1940	1895	1915
	C.V %		2.28	2.59	0.79	2.02	2.54	0.98	4.46	1.93	2.79	3.29	1.09	2.24	1.05	1.68	1.30
1999	80/93	N	31.5	30.6	31.0	16.0	15.5	15.8	180	180	181	4.3	4.5	4.4	2110	2105	2110
	80/94		31.0	30.6	30.8	16.5	15.3	15.9	181	175	181	4.1	4.3	4.3	2095	2045	2070
	80/95		31.7	30.8	31.2	16.2	15.5	15.8	180	177	181	4.3	4.2	4.4	2120	2060	2090
	80/96		31.7	30.3	31.0	16.0	15.0	15.5	178	180	179	4.4	4.3	4.4	2125	1980	2050
	Mean		31.5	30.6	31.0	16.2	145.3	15.8	180	178	180	4.3	4.3	4.4	2110	20.45	2080
	C.V %		1.05	0.67	0.53	1.46	1.54	1.09	0.70	1.38	0.55	2.93	2.91	1.14	0.63	2.52	1.20
	80/93	F	30.2	29.8	30.0	14.7	14.8	14.8	177	182	178	4.5	4.6	4.5	1830	1640	1735
	80/94		31.6	29.7	30.6	15.5	14.8	15.2	171	181	176	4.5	4.6	4.2	1850	1890	1870
	80/95		32.5	30.5	31.5	16.0	15.3	15.6	171	182	174	4.2	4.6	4.2	2070	1950	2010
	80/96		31.7	30.0	30.8	16.3	14.8	15.6	181	180	180	4.2	4.3	4.2	2090	1920	2005
	Mean		31.5	30.0	30.7	15.6	14.9	15.3	175	180	180	4.4	4.5	4.5	1960	1850	1905
	C.V. %		3.03	1.19	2.01	4.48	1.68	2.50	2.80	0.70	0.70	3.94	3.33	3.33	7.09	7.68	6.85

Numbers have the same letters are not significant differences

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دراسة مقارنة لأربع نواهات من جيزة ٨٠ مع ما يقابلها من السلالات المتداولة فى الزراعة العامة فى منطقتين مختلفتين

محمد عبد الحكيم على نجيب
معهد بحوث القطن ــ مركز البحوث الزراعية ــ جيزة ــ مصر

استخدمت فى هذه الدراسة أربع نواهات من جيزة ٨٠ لمقارنتها بما يقابلها من السلالات المتداولة فى الزراعة العامة ، وقد تم عمل تجربتين فى منطقتين مختلفتين (المنيا وسوهاج) لمدة ثلاثة مواسم متتالية (١٩٩٧ ، ١٩٩٨ ، ١٩٩٩) فى قطاعات كاملة العشوائية مكونة من أربع مكررات.
وقد أشارت النتائج الى وجود تباين بين التراكيب الوراثية بالإضافة الى وجود تفاعل أيضا مع المناطق ، وتعزى هذه التباينات أساسا الى وجود اختلافات عالية المعنوية للصفات محل الدراسة وخاصة صفتى معدل الحليج ومعامل الشعر فى السلالات المنزرعة فى الزراعة العامة وتفاعلها مع البيئة ، ويمكن اعتبار هاتان الصفتان كمؤشر لحدوث التدهور بالإضافة الى صفات متانة الشلة حيث تأثروا نتيجة تواجد نباتات من الطرز المغايرة بين نباتات السلالات المتداولة فى الزراعة العامة. وقد لوحظ أن نسبة الخلط بالطرز المغايرة يؤثر سلبا على صفتى معدل الحليج ومعامل الشعر ، وقد أشارت النتائج أيضا أن حدوث الخلط نتيجة أخطاء فى التداول للتقاوى فى الزراعة العامة يؤدى الى حدوث التدهور لهذه السلالات بعد سنتين من التداول.