

## GIZA 133 AND GIZA 134, TWO NEW BARLEY VARIETIES FOR NEW RECLAIMED AREAS IN EGYPT

El-Bawab, A.M.O.; A.A. El-Sayed; M.A. El-Moselhy; M.M. Abd El-Hameed; Kh. A. Amer;  
M.A. Megahed; M.F. Saad; H.A. Ashmawy; A.A. Eid;; R.A. Abo El-Enein; A.S. El-Gamal;  
I. A. Ahmed; M. M. Noaman; M.Z. Shendy; Sh. I. Abaas and A. A. Badawy  
Barley Dept., Field Crops Res. Institute, ARC, Egypt

### ABSTRACT

*This study indicates the development of Giza 133 and Giza 134 two superior new barley cultivars for the newly reclaimed lands. They were selected from F<sub>4</sub> families of the crosses Carbo/Gustoe for Giza 133 and Alanda-01/4/WI2291/3Api/CM67//L2966-69 for Giza 134 using pedigree method. They were evaluated for three growing seasons 2007/2008, 2008/2009 and 2009/2010 at different levels of environments under several experiments including: advanced yield trial, on-farm verification yield trial and on-farm demonstration yield trials. The average yield of the cultivar Giza 133 was recorded 4603.7 (Kg/ha) and significantly outyielded Giza 123 and Giza 2000 by about 23.85 and 15.06%, respectively. On the other hand, the average yield of the new cultivar Giza 134 was 4709.1 (Kg/ha) significantly exceeded the average of national check Giza 123 by about 26.68% and for the highest national check Giza 2000 by about 17.69%. The two cultivars were more stable and a considerable level of resistance to the major diseases under new reclaimed areas compared with the commercial barley cultivars (Giza 123 and Giza 2000). It could be recommended for planting in new reclaimed lands in Egypt.*

### INTRODUCTION

Barley (*Hordeum vulgare* L.) is considered one of the oldest cultivated cereal crop in history being widely grown all over the world. It is considered one of the most adapted cereal crop where environmental conditions, especially water stress, are not suitable for growing other cereal crops. Bidinger *et al.* (1977) stated that barley is the most drought-tolerant crop among the cereals. Under low-rainfall conditions, barley shows higher stability than other cereal crop. Barley is one of the most important cereal crop in marginal, low input, drought-stress environments (Ceccarelli, 1984).

In Egypt, Barley is the main crop grown on a large scale in the rainfed areas in North coastal region and in the newly reclaimed lands with saline soils. The total harvested area was 57,000 ha during the eighties, while it became 120,000 ha in nineteenth, then dropped to 98323.4 ha in 2009/2010. Barley grain yield under irrigation has been gradually increased from 2.70 t/ha in the eighties to about 3.75 t/ha in nineteenth, while it reached 3.8 t/ha in 2009/2010. Under rainfed conditions, barley productivity increased from 0.44 to 1.94 t/ha during the same period, which is considered very high compared to other rainfed areas in the world that exceeds 200 mm, while in Egypt it is about 130 mm on the average.

Barley is recommended to grow the ability of cereals under drought and saline soil conditions. Therefore, barley cultivars developed for these areas should be drought tolerant and stable under harsh conditions. El-Sayed (2002) and El-Sayed *et al.* (1990, 2002a, 2002b and 2003), Noaman *et al.* (1995 and 2006), El-Bawab (1999 and 2002), and Ahmed *et al.* (2003) reported that it is possible to identify barley genotypes with high yield potential under severe drought stress with high stability.

The main objectives of this study are to develop new cultivars with high yielding capacity, tolerant to different kinds of stresses (e.g. drought, salinity, poor soil fertility, diseases, insects, etc.).

## MATERIALS AND METHODS

Following the principles of pedigree selection method the new promising cultivars Giza 133 and Giza 134 has been selected from barley material provided by ICARDA and ICARDA-CIMMYT programs. The pedigree and history of these cultivars are: Giza 133 i.e. Carbo/Gustoe and Giza 134 i.e. Alanda-01/4/WI2291/3/Api/CM67//L2966-69. They were evaluated for: Days to heading (HD days), Days to Maturity (MD Days), (Plant height (PLHT cm), Spike length (SP.L.cm), Biological Yield (BY Kg/ha) and Grain Yield (GY Kg/ha) in different environments for three seasons (2007/2008), (2008/2009) and (2009/2010). Giza 123 and Giza 2000, the recommended hulled barley cultivars were used as check.

The new promising cultivars were tested in advanced yield trial in (2007/2008) season, On Farm Verification yield trial in (2008/2009) and On-Farm Demonstration yield trial (2009/2010) at different experimental stations representing the all the growing area within the country: Sakha, Gemmeiza, New Valley, Mallawi, Kafr El-Hamam, Bahteem, Nubaria and Ismailia. All the previous trials were conducted under irrigation system.

The yield trials were laid down in randomized complete block design with three replications differed plot size from trial to another, i.e. for advanced yield trial (10.5m<sup>2</sup>), for on Farm Verification yield trial (20m<sup>2</sup>) and for on Farm Demonstration (30m<sup>2</sup>). Seeding rate was 119 Kg ha<sup>-1</sup>. Analysis of variance and combined analysis over all environments were performed to estimate the significant differences among genotypes. (Steel and Torrie, 1980) and the stability parameters (Eberhart and Russel, 1966).

The two cultivars were evaluated for resistance to the major barley diseases i.e. Leaf Rust (LR) and Powdery Mildew (PM). PM reaction were recorded using the double digit scale 00-99, the first digit gives the relatively susceptible of disease on the plant (Sarri and Prescott, 1975), were scores 0,1,2,3 and 4 are considered resistant while 5, 6, 7, 8 and 9 are susceptible. The second digit shows the disease survey as percentage of leaf area affected in terms of 0-9 (Eyal *et al.* 1987). LR reaction was recorded as survey and response (percentage of leaf area affected) according to modified Cobb scale (Peterson *et al.* 1948).

## RESULTS AND DISCUSSION

### 1. Advanced yield trial:

The results in (Tables 1-6) show that days to heading, days to maturity, plant height, spike length, biological yield and grain yield revealed that, Giza 133 and Giza 134 were the latest plants than the checks, (El-Bawab 1999 and 2002) found that the latest genotypes had higher grain yield than the earliest genotypes. (Tables 1 and 2).

The data for plant height, spike length, biological yield and grain yield indicated that Giza 133 and Giza 134 gave the highest values for these traits. With respect to grain yield, Giza 133 and Giza 134 outyielded the national checks Giza 123 and Giza 2000 by about (20.17, 2.62%) and (23.73, 5.69%), respectively (Tables 3, 4, 5 and 6).

**Table (1): Means of days to heading of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	84	83	83	77	84	101	82	89	85
Giza2000	84	83	84	74	83	100	84	87	85
Giza 133	87	90	89	80	94	104	88	89	90
Giza 134	86	86	85	79	89	102	88	86	88
CV	1.7	1.8	1.9	1.4	1.7	1.4	1.80	1.5	1.3
LSD <sub>0.05</sub>	1.6	2.5	2.8	1.7	2.4	2.3	2.0	NS	2.6

**Table (2): Means of days to maturity of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	120	124	121	115	113	133	112	135	122
Giza 2000	122	124	123	118	113	132	114	133	122
Giza 133	124	129	130	120	120	136	118	137	126
Giza 134	123	130	132	124	120	136	118	137	127
CV	1.6	1.80	2.80	1.4	1.8	1.9	1.50	1.9	1.4
LSD <sub>0.05</sub>	1.5	2.5	1.5	2.8	1.7	4.2	2.0	1.3	2.5

**Table (3): Means of plant height (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	114.6	95.0	103.3	96.0	106.7	120.0	65.7	96.0	99.7
Giza 2000	117.3	111.7	111.6	102.7	108.3	120.7	74.3	99.7	105.7
Giza 133	124.0	112.3	115.0	106.3	115.0	122.0	66.0	117.3	109.7
Giza 134	116.0	108.0	105.0	103.3	118.3	126.0	69.0	112.3	107.2
CV	6.2	11.9	18.7	11.3	17.5	11.2	14.5	10.0	16.2
LSD <sub>0.05</sub>	5.9	3.6	4.8	2.1	NS	2.5	4.6	NS	3.6

**Table (4): Means of spike length (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	6.0	7.0	8.0	6.0	7.0	8.0	7.7	6.7	7.1
Giza 2000	7.5	7.0	8.0	6.0	7.5	8.0	5.4	6.7	7.0
Giza 133	7.0	6.0	8.0	8.0	8.0	9.0	7.5	6.7	7.5
Giza 134	7.0	8.0	9.0	8.5	8.0	8.5	7.5	6.3	7.8
CV	8.90	11.0	12.60	11.50	10.80	11.20	6.1	14.1	10.2
LSD <sub>0.05</sub>	NS	NS	1.0	1.5	NS	1.0	0.7	1.6	NS

**Table (5): Means of biological yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	16507.9	17555.6	13238.0	17206.3	9047.6	10285.7	3875.0	13650.7	12670.8
Giza2000	18857.1	18539.8	13301.5	18253.9	9523.8	10238.0	3458.3	15809.6	13497.8
Giza 133	18571.6	19369.6	14952.3	20317.2	10380.6	11285.7	3866.7	16428.8	14396.5
Giza 134	18952.3	19365.0	14317.6	18730.1	10476.6	11428.5	5152.8	20126.9	14818.7
CV	18.5	14.8	18.6	15.4	12.8	10.8	24.5	16.6	17.6
LSD <sub>0.05</sub>	2532	1498	1945	1675	2123	1939	NS	4447	314.5

**Table (6): Means of grain yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in advanced yield trial, 2007/2008 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	6873.0	4158.8	3968.5	5142.8	3777.8	3285.7	558.3	2370.1	3801.6
Giza 2000	7904.6	4888.9	4088.8	5777.7	5301.6	3380.0	741.7	3523.8	4450.8
Giza 133	7942.8	5015.8	4507.8	5650.7	4920.6	4047.6	833.3	3623.8	4567.8
Giza 134	8222.2	5269.6	4412.6	5984.2	5349.6	3714.2	866.7	3809.5	4703.6
CV	18.1	15.3	16.3	12.8	19.4	14.1	32.8	15.2	16.4
LSD <sub>0.05</sub>	NS	425.4	473.4	1192	778.6	854.7	NS	878.4	100.9

## 2. On-Farm Verification yield trial:

The data of On-Farm Verification trials in (Tables 7-12) revealed that Giza 133 and Giza 134 significantly exceeded the checks, Giza 123 and Giza 2000 in plant height, biological yield and grain yield. Giza 133 outyielded the two checks by about (27.65, 22.76). On the other hand, Giza 134 exceeded the two checks by about (38.60, 32.12%).

**Table (7): Means of days to heading of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	83	81	84	78	90	89	80	89	84
Giza 2000	86	83	86	76	92	90	81	78	84
Giza 133	84	85	87	77	93	91	82	86	85
Giza 134	84	83	88	77	93	90	82	90	85
CV	1.33	2.59	2.42	1.36	1.60	1.41	1.55	1.41	1.7
LSD <sub>0.05</sub>	1.93	NS	NS	1.78	NS	2.19	NS	2.14	NS

**Table (8): Means of days to maturity of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	120	122	119	119	126	129	120	133	123
Giza 2000	124	125	120	121	126	130	121	134	125
Giza 133	126	127	123	123	128	131	123	136	127
Giza 134	121	127	125	124	130	130	123	134	126
CV	1.29	2.50	3.00	1.09	1.50	1.97	2.50	0.91	1.2
LSD <sub>0.05</sub>	2.73	1.00	NS	2.26	1.00	NS	1.80	2.11	1.0

**Table (9): Means of plant height (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	102	108	122	92	102	120	92	116	106
Giza 2000	99	112	126	93	102	117	95	128	109
Giza 133	103	118	131	98	108	120	97	130	113
Giza 134	114	119	135	102	108	120	100	123	115
CV	7.84	3.02	3.18	2.46	9.06	1.51	7.87	5.91	6.9
LSD <sub>0.05</sub>	NS	5.74	6.87	4.13	NS	3.15	13.39	NS	3.5

**Table (10): Means of spike length (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	7.5	8.0	10.0	7.0	8.0	8.5	7.5	5.6	7.8
Giza 2000	8.0	7.0	8.7	6.5	7.6	9.0	6.1	5.0	7.2
Giza 133	7.5	7.6	10.0	7.0	8.0	10.0	9.8	7.3	8.4
Giza 134	7.0	7.0	10.9	8.0	8.0	10.0	8.0	6.7	8.2
CV	9.65	10.35	12.40	10.70	16.50	10.60	3.01	12.10	10.5
LSD <sub>0.05</sub>	NS	NS	1.50	1.00	NS	NS	0.38	NS	NS

**Table (11): Means of biological yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	11349.1	18158.7	20571.4	12571.4	19999.9	14761.8	11666.6	19365.0	16055.4
Giza2000	10920.6	16285.6	21047.5	13333.3	20317.4	13333.3	12666.7	19999.9	15988.0
Giza 133	12492.0	18444.4	24317.4	14698.3	21904.6	15238.0	12666.6	26349.1	18263.8
Giza 134	13777.7	18920.6	23872.9	15047.6	22857.1	15714.2	13333.3	25714.2	18654.7
CV	19.85	14.70	13.00	16.25	11.61	12.84	19.77	13.28	12.50
LSD <sub>0.05</sub>	2106.0	1469.0	NS	1557.0	4386.0	NS	NS	5393.0	1350.0

**Table (12): Means of grain yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm verification yield trial, 2008/2009 season.**

Cultivars	Locations								Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Bahteem	Kafr El-Hamam	Ismailia	Nubaria	
Giza 123	4555.5	3634.9	4695.2	3238.1	3492.0	2309.5	2733.3	4825.3	3276.7
Giza2000	3809.5	3047.6	4463.5	3682.5	3146.0	1952.3	2983.3	4412.6	3437.2
Giza 133	4825.3	3841.2	4844.4	4539.6	3793.6	2999.9	3016.7	5603.2	4182.9
Giza 134	5761.8	4047.6	5269.8	4952.3	3682.5	2714.3	3283.3	6619.0	4541.3
CV	11.04	17.28	14.04	10.88	15.00	18.08	11.70	14.45	14.18
LSD <sub>0.05</sub>	914.8	443.7	120.0	814.0	1011.0	NS	NS	1427.0	415.0

### 3. On-Farm Demonstration yield trial:

Regarding the Demonstration yield trial, conducted at six locations in 2009/2010 season. The results listed in (Tables 13-18) clearly showed that no significant differences among all genotypes tested for days to heading and maturity and spike length.

In 2009/2010 growing season, at a large scale on-farm demonstration yield trial, the new promising lines (Giza 133 and Giza 134) outyielded the national checks in biological and grain yield, significantly. However Giza 133 and Giza 134 outyielded the two checks by about (24.22, 22.69) and (19.90, 18.64%). (Tables 17 and 18), respectively.

**Table (13): Means of days to heading of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	79	88	84	78	83	82	82
Giza 2000	76	87	85	81	85	82	83
Giza 133	80	89	87	75	85	84	83
Giza 134	79	89	89	80	86	85	84
CV	1.02	2.04	1.39	1.99	1.64	1.53	1.3
LSD <sub>0.05</sub>	1.39	NS	2.09	2.66	NS	2.22	NS

**Table (14): Means of days to maturity of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	109	118	116	114	120	115	115
Giza 2000	110	119	116	111	118	118	115
Giza 133	111	120	119	113	118	124	117
Giza 134	110	120	120	103	117	122	115
CV	1.63	1.60	1.90	1.10	1.81	1.34	1.6
LSD <sub>0.05</sub>	1.20	NS	NS	2.03	NS	2.81	NS

**Table (15): Means of plant height (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	99	83	118	72	117	97	98
Giza 2000	100	86	116	82	120	100	100
Giza 133	104	95	118	99	122	111	108
Giza 134	113	92	120	89	123	108	107
CV	16.12	13.13	14.52	12.67	12.06	19.60	10.5
LSD <sub>0.05</sub>	10.81	4.80	8.83	3.89	NS	NS	2.0

**Table (16): Means of spike length (cm) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	5.3	7.3	8.0	5.6	7.0	9.0	7.0
Giza 2000	5.3	7.3	7.5	6.7	7.8	5.3	6.6
Giza 133	5.6	8.0	8.5	7.2	8.3	7.3	7.4
Giza 134	5.7	7.8	9.0	6.6	7.8	6.3	7.2
CV	15.45	13.05	16.70	9.30	6.88	16.49	15.5
LSD <sub>0.05</sub>	NS	1.60	10.80	0.97	0.85	1.90	NS

**Table (17): Means of biological yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	10908.3	13200.0	22116.6	16183.3	20000.0	13583.3	13734.7
Giza 2000	10083.3	12833.3	22016.6	11383.3	22333.3	13716.6	15394.4
Giza 133	11866.6	13883.3	24683.3	17233.3	23166.6	16416.6	17874.9
Giza 134	11866.6	13733.3	25733.3	16800.0	27416.6	19583.3	19188.8
CV	12.13	14.13	12.81	17.40	11.74	19.34	13.50
LSD <sub>0.05</sub>	2523.0	1031.0	1030.0	1839.0	3552.0	2560.0	2105

**Table (18): Means of grain yield (Kg/ha) of Giza 133 and Giza 134 and two checks (Giza 123 and Giza 2000) in on-farm demonstration yield trial, 2009/2010 season.**

Cultivars	Locations						Comb.
	Sakha	Gemmeiza	Mallawi	New Valley	Kafr El-Hamam	Nubaria	
Giza 123	3358.3	3363.8	3183.6	5333.3	5666.6	3537.5	4073.8
Giza 2000	3366.6	3696.1	3536.1	4483.3	5833.3	3776.6	4115.3
Giza 133	3600.0	3896.5	4639.1	6283.3	7166.6	4776.6	5060.3
Giza 134	3660.6	3834.6	4428.3	5866.7	6333.3	5171.6	4882.5
CV	12.15	13.28	13.93	19.22	16.50	10.06	13.60
LSD <sub>0.05</sub>	744.3	220.4	262.6	884.2	1566.0	732.6	589

#### 4. Stability parameters for grain yield:

Stability parameters for grain yield over the three seasons were calculated according to (Eberhart and Russel, 1966). The stable cultivar according to this method was defined as one which had a regression coefficient of 1.0 and no deviation from regression mean square. The results in (Table 19) over the three growing seasons: 2007/2008, 2008/2009 and 2009/2010 revealed that Giza 133 and Giza 134 were similar in stability parameters in Egypt than the two national checks: Giza 123 and Giza 2000. Therefore, it could be recommended for planting in new reclaimed areas in Egypt.

**Table (19): Means of cultivars and stability parameters for grain yield of Giza 123, Giza 2000, Giza 133 and Giza 134 under 22 various environments.**

Cultivars	Grain Yield		
	X̄ (Ton/ha)	B	S <sup>2</sup> d
Giza 123	3.717	1.066	0.036
Giza 2000	4.001	1.315	0.022
Giza 133	4.604	0.928	0.065
Giza 134	4.709	0.878	0.035

### 5. Disease reaction:

Resistance the two barley cultivars were studied under natural infection. The results in (Table 20) indicated that the two cultivars had a good level of resistance to the major diseases under tested environments compared with the commercial barley cultivars (Giza 123 and Giza 2000).

**Table (20): Assessment of the major barley diseases of the newly cultivars (Giza 133 and Giza 134) compared with (Giza 123 and Giza 2000).**

Cultivars	Diseases							
	Powdery Mildew		Leaf Rust			Stripe Disease		
	Gemmeiza	Nubaria	Sakha	Gemmeiza	Nubaria	Gemmeiza	Nubaria	Sakha
Giza 123	3-2	4/3	50S	100S	100S	10%	16%	10%
Giza 2000	4-2	3/2	40S	70S	50MR	0	1%	4%
Giza 133	2-1	4/2	50MS	5MS	40MR	0	0	0
Giza 134	3-2	3/2	10MR	5MR	50MR	0	0	0

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## الملخص العربي

### جيزة ١٣٣ ، جيزة ١٣٤ صنفان جديان من الشعير للمناطق الجديدة في مصر

أحمد محمد عرابي الجواب، عبد الفتاح أحمد السيد، محمود أمين المصيلحي، محفوظ عبد الحميد محمود، خيرى عبد العزيز عامر، مصطفى أحمد مجاهد، محمود فهمي سعد، حسن عبد الجليل عشاوي، علاء على عيد، رشاد أحمد أبو العينين، أحمد صبري الجمل، إسماعيل عبد المنعم أحمد، ماهر نعمان محمد، محمد زكريا شندي، شريف إسماعيل عباس، عبد العاطي أحمد بدوي

قسم بحوث الشعير- معهد بحوث المحاصيل الحقلية- مركز البحوث الزراعية- مصر

يهدف هذا البحث الى التعريف بصنفي الشعير الجديين (جيزة ١٣٣ و جيزة ١٣٤) اللذان يتميزان بالإنتاجية العالية تحت ظروف الأراضي الجديدة في مصر، وقد تم إنتاج هذين الصنفين من الهجن Carbo/Gustoe للصنف جيزة ١٣٣ و Alanda-01/4/WI2291/3/Api/CM67//L2966-69 للصنف جيزة ١٣٤ وتم عمل انتخاب وتقييم واختبار في عدد ٢٢ تجربة محصولية في محطات البحوث المختلفة التابعة لمركز البحوث الزراعية على مدار ثلاثة مواسم زراعية: ٢٠٠٧/٢٠٠٨، ٢٠٠٨،٢٠٠٩ و ٢٠٠٩/٢٠١٠. وقد بينت النتائج أن محصول الصنف جيزة ١٣٣ (٤٦٠٣،٧ كجم/هكتار) وكان متفوقاً على الصنفين المحليين التجاريين (جيزة ١٢٣ و جيزة ٢٠٠٠) بمعدل ٢٣،٥٨% و ١٥،٠٦%، بينما الصنف جيزة ١٣٤ قد أعطى أعلى محصول لهذه الدراسة (٤٧٠٩،١ كجم/هكتار) وكان متفوقاً على صنفي المقارنة جيزة ١٢٣ وجيزة ٢٠٠٠ بمعدل ٢٦،٦٨% و ١٧،٦٩%.

أظهرت النتائج أن الصنفين الجديين قد أعطوا أعلى ثبات وراثي وأيضاً أظهروا مقاومة عالية لمعظم أمراض الشعير الرئيسية تحت ظروف الأراضي الجديدة.

وبناءً على أداء الصنفين وثباتهما وتحملهما للظروف القاسية في المناطق الجديدة بمصر فيصح بزراعتهم في تلك المناطق.

مجلة المؤتمر السابع لتربية النبات- الإسكندرية ٤-٥ مايو ٢٠١١

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