THE EFFECT OF SOWING DATES ON THE PRODUCTIVITY OF SOME RICE VARIETIES

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ABSTRACT

Field experiments were conducted during the two successive seasons of 2008 and 2009, the Experimental Farm of Rice Research and Training Center Agriculture Research, Sakha, Kafr El-Sheikh, Agriculture Research Center (ARC) Egypt, to study the performance of some rice cultivars (Sakha 101, Sk. 2034 H1 and Giza 178) under different sowing dates (5 ; 15 and 25 May). The experimental design was a split-plot with three replicates. Main plots were assigned to date of sowing and sub plots to rice cultivars. The other usual agricultural practices of growing rice were performed as the recommendation of Rice Research and Training Center (RRTC). The data were recorded as follow: Plant height (cm); Flag leaf angle (^{0}); Flag leaf area (cm^2); Days to heading (day); Number of panicles/hill; Panicle length (cm); Panicle weight (g); Number of filled grains/ panicle; Seed set percentage; 1000- grain weight (g) and Grain yield (t/h).

The data indicated that, there were significant differences between rice cultivars in each growth and yield characters during both seasons Sk.2034 H1 rice cultivar gave highly significant to another cultivars in grain yield t/ha, while, Sakha101 rice cultivar gave highly significant to in 1000-grain weight in two seasons. Cultivated in early sowing date 5th May gave maximum values for yield and it's component. But, cultivated in late sowing date 25th May gave minimum for these characters in two seasons. To get highly grain yield in this experiment should be cultivate in early sowing dates 5th May with each cultivars

INTRODUCTION

Rice (*Oryza sativa* L.) is the staple food for more than half of the world's population. In Asia alone, more than 2 billion obtain 60 to70 percent of their caloric intake from rice and its derived products. When all developing countries are considered together, Rice provides 27 % of dietary energy supply and 20% of dietary protein intake. The popularity of rice in the near east is reflected in the fact that over the past decade regional rice imports have increased from 3.2 million tones in 1991 to 6.3 million tones in 2001 **(Solh, 2003).**

The Egyptian breeders developed new early varieties with short growth period of 120-135 days which is very significant achievement at the national level **Mahrous (1986).** Rice sown during the optimum period had a longer vegetative growth phase than later sown rice. The relationship between sowing date and rice grain yield

will aid growers in making crop planting decisions based on expected grain yields and commodity prices. **Slaton *et al.* (2003)** The sowing date had a significant effect on rice yield, biological harvest index, and yield components, except single grain weight. Delayed sowing dates decreased the number of panicles per plant followed by a decrease in the number of seeds per panicle and single seed weight. **Siadat *et al.* (2004).**

The main objective are;

Therefore, the main objective of this study the performance of some rice cultivars under three planting dates.

MATERIALS AND METHODS

Field experiments were conducted during the two successive summer seasons of 2008 and 2009, at the Experimental Farm of Rice Research and Training Center Agriculture Research, Sakha, Kafr El-Sheikh, Agriculture Research Center (ARC) Egypt, to study the performance of some rice cultivars under different sowing dates (5 ; 15 and 25 May). The material in the experiments included the three cultivars viz, Sakha 101, Sk. 2034 H1 and Giza 178.

The experimental design was a split-plot with three replicates. Main plots were assigned to sowing date and sub plots to the rice cultivars. The sub plot size was 12 m^2 (3 × 4m). In each sub plot, an area 2.4m^2 (0.6 × 4m) was devoted for plant growth and yield attributes samplings and 9.6 m^2 (2.4×4 m) for determining grain and straw yields. Every plot consists of 15 rows and the distance between the hills and the rows were 20×20 cm. The other usual agricultural practices of growing rice were performed as the recommendation of Rice Research and Training Center (RRTC).

The data were recorded as follow: Days to heading (day); Plant height (cm); Flag leaf angle (^{0}); Flag leaf area (cm^2); Number of panicles/hill; Panicle length (cm); Panicle weight (g); Number of filled grains/ panicle, Seed set percentage; 1000- grain weight (g) and Grain yield (t/h).

Statistical analysis:

All collected data were subjected to statistical analysis using ANOVA as described by ***Gomez and Gomez (1984).***The treatment means were compared using Duncan's multiple range test *Duncan, (1955)*. All statistical analysis was performed using analysis of

variance technique by means of "MSTAT" computer soft ware package.

RESULTS AND DISCUSSION

A. Growth characters:

A.1-Days to heading (day)

Data in Table 1 showed that, the days to heading was significantly affected by sowing dates in the two seasons. The highest values of days to heading (98.33 and 98.66 day) were recorded with using early sowing date May5 in 2008 and 2009 seasons, respectively. But, the lowest values (89.66 and 90.33 day) were recorded with late sowing date in 2008 and 2009 seasons, respectively.

The data indicate that, there were significant differences among the rice cultivars for days to heading. The maximum values (103.00 and 104.00 day) were recorded with Skaha101 rice cultivar. But, the minimum values (90.33 and 91.00 day) were obtained by Giza178 rice cultivar in 2008 and 2009 seasons, respectively. The results indicated to the Sakha101 rice cultivar its long duration, but, Giza178 it's highly sensitive to date of sowing comparing to the Japonica rice cultivar. These finding are in agreement with **Shao *et al*, (2002)** he reported that, seedling with early sowing gave 3-4 days earlier maturation period and higher yield (by 7.7-15%)

Days to heading was not affected in seasons 2008 by the interaction between the two factors involved in this study indicating, thereby, that each factor affected this study independently.

Table 2 Showed the days to heading as affected by the interaction between rice sowing dates and cultivars in 2009 seasons, the maximum values of the days to heading was (105.00 day) of the early sowing date with Sakha101 rice cultivar, and the minimum values were (87.00 day) in late sowing date with rice cultivar Giza178 in 2009 seasons.

A.2- plant height (cm)

Data in Table 1 showed that, the plant height was highly affected by the different sowing dates in the two seasons. The maximum values of plant height (105.11 and 105.55cm) were recorded with early sowing date 5th May. On the other hand. the minimum values (103.22 and 103.22cm) were recorded with late sowing date 25th May in 2008 and 2009 seasons, respectively.

Table 1: Effect of sowing dates and some rice cultivars as well as their interaction on days to heading (day), plant height (cm) and flag leaf angle (^{0}) during 2008 and 2009 seasons.

Character / Treatment	Days to heading (day)		Plant height (cm)		Flag leaf angle (^{0})	
	2008	2009	2008	2009	2008	2009
Sowing (A):						
5 May	98.33a	98.67a	105.11a	105.56a	27.11a	27.33a
15 May	94.33b	95.00b	104.11b	105.00a	26.33a	26.44b
25 May	89.67c	90.33c	103.22c	103.22b	25.44b	25.11c
f-test	**	**	**	**	**	**
Cultivar(B):						
SK.2034H$_1$	90.33c	91.00c	111.56a	112.22a	29.44a	29.11a
Sakha101	103.00a	104.00a	98.78c	98.89c	29.67a	29.67a
Giza178	96.00b	96.00b	102.11b	102.67b	19.78b	20.11b
f-test	**	**	**	**	**	**
Interaction A x B	NS	*	NS	NS	NS	NS

*, ** and Ns indicate that p≤ 0.05,p≤ 0.01 and not significant. Means of each factor deigned by the same letter(s) aren't significantly different at 5% level according to Duncan's multiple range tests

Table 2: Days to heading as affected by the interaction between the different sowing dates and rice cultivars during 2009 season

Means designed by the same letter are not significantly different at 5%level, using Duncan multiple range test.	Rice cultivar		
	Sk.2034H$_1$	Sakha101	Giza178
	95.00c	105.00a	101.00a
	91.00e	98.00b	96.00c
	87.00f	95.00d	91.00e

Data documented in table1 indicated that, there were significant differences among the three rice cultivars for plant height. The maximum values (111.55 and 112.22cm) were recorded with Sk. 2034H_1 rice cultivar. On the other side, the minimum values (98.77 and 98.88cm) were recorded from sakha101 rice cultivar in 2008 and 2009 seasons respectively. The data showed that, Sakha 101 rice cultivar its short stature, but, the Sk.2034H1 rice cultivar it's taller than the other cultivars and that referred to heterosis effect. The privies results are in agreement with those obtained by **Ibrahim (1995)** he found that, the highest means of plant height number of panicle/m^2 number of grains/ panicle, panicle weight, 1000-grain weight and grain yield t/ha of rice, with early date of sowing 15th May

Plant height was not affected in any of the two seasons by the interaction between the two factors involved in this study indicating, thereby, that each factor affected this study independently.

A.3- Flag leaf angle (^{0})

Flag leaf angel was considerably affected by the dates of planting in the two seasons (table 1). Planting rice on 5thMay recorded the highest flag leaf angel (27.11 and 27.33^0) in the first and second seasons, respectively, compared with the other two planting dates. It was ranked by planting rice on 15thMay which gave (26.33 and 26.44^0) in the first and second seasons, respectively. On the other side, the lowest flag leaf angel (25.44 and 25.11^0) in the first and second seasons were obtained by planting rice on 25th May.

The data indicated that, there were significant differences among rice cultivars for flag leaf angel. The maximum value (29.66 and 29.66^0) were recorded with Sakha101 rice cultivar. On the other side, the minimum value (19.77 and 20.11^0) were obtained for Giza178 rice cultivar in 2008 and 2009 summer seasons, respectively.

Indicated that the flag leaf angle was highly affected by date of sowing. These results indicated that, the rice cultivars played a great role to increasing the flag leaf angle, and Indica rice cultivar had erect flag leaf comparing to other cultivar.

Non of significant interaction for flag leaf angle in any of the two seasons under the local conditions of the present investigation

A.4- Flag leaf area (cm^2)

Data in table 3 showed that, the flag leaf area was highly affected by different sowing dates in the two seasons. The maximum values of flag leaf area (37.21 and 37.03cm^2) were recorded of early sowing date 5th May in 2008 and 2009 seasons, respectively. But, the

Table 3: Effect of sowing date and rice cultivars as well as their interaction on number of panicles/plant, flag leaf area (cm^2) and panicle length(cm) during 2008 and 2009 seasons.

Character / Treatment	Flag leaf area (cm^2)		N0. of panicles/hill		Panicle length (cm)	
	2008	2009	2008	2009	2008	2009
Sowing (A):						
5 May	37.21a	37.03a	18.56a	18.44a	24.47a	24.46a
15 May	36.83a	36.66b	17.44b	17.33b	24.17a	24.17a
25 May	35.09b	35.07c	15.78c	15.56c	23.34b	23.30b
f-test	**	**	**	**	**	**
Cultivar (B):						
SK.2034H_1	41.57a	41.32a	23.00a	23.00a	25.58a	25.52a
Sakha101	28.49c	28.38c	14.56b	14.44b	23.73b	23.71b
Giza178	39.08b	39.06b	14.22c	13.89c	22.68c	22.69c
f-test	**	**	**	**	**	**
Interaction . A x B	Ns	Ns	*	*	Ns	Ns

** and NS indicate that p≤ 0.05,p≤ 0.01 and not significant. Means of each factor deigned by the same letter(s) aren't significantly different at 5% level according to Duncan's multiple range tests

minimum value was (35.08 and 35.06cm^2) of flag leaf area of late sowing date 25th May during 2008 and 2009 seasons, respectively.

In the same table data clarified that there were significant differences among three the rice cultivars for flag leaf area. The maximum values (41.57 and 41.32cm^2) were recorded of the Sk. 2034H_1 rice cultivar in 2008 and 2009 seasons, respectively. But, the minimum values (28.49 and 28.38cm^2) were obtained of the Sakha101rice cultivar in 2008 and 2009 seasons, respectively.

These results indicated that, the flag leaf area was controlled by the genetic background for each genotype.

Non of the interaction had a significant effect on flag leaf area in any of the two seasons under the local conditions of the present investigation

B. Yield and components:

B.1- No. of panicles/hill

The data in Table 3 showed that, the number of panicles/hill were affected by the different sowing dates in two summer seasons, the maximum values of number of panicles/hill (18.55 and 18.44panicle) were obtained of the early sowing date 5th May. But, the minimum values of number of panicles/hill (15.77 and 15.55panicle) were recorded of late sowing date 25th May in 2008 and 2009 summer seasons, respectively.

In the other side, the maximum values of number of panicles/hill (23.00 and 23.00panicle) were recorded with using Sk. $2034H_1$rice cultivar. But, the minimum values (14.22 and 13.88panicle) were recorded with Giza178 rice cultivar, in 2008 and 2009 seasons, respectively. These results indicated that, the Sk. $2034H_1$ cultivar was superior in tillering ability comparing to other varieties at deferent date of sowing so, the Sk.$2034H_1$ gave the highest value of number of panicles/hill. These results are in agreement with **Suresh *et al.* (2001)**, **Krishnan** and **Siadat, *et al.* (2004) Rao (2005)** and

Table 4 showed that, the number of panicles/hill. as affected by the interaction between sowing date and rice cultivars in 2008 and 2009 seasons, the maximum values of number of panicles/hill were (25.33 and 25.33 panicle) of Sk$2034H_1$ rice cultivar at early sowing date (5th May) in both season, while, the minimum values were (13.00 and 12.67 panicle) of Giza178 cultivar at late sowing date (25th May), These results indicated that the Sk2034H1 rice cultivar was superior in tillering ability comparing to other varieties at deferent date of sowing

B.2- Panicle length (cm)

Data listed in Table 3 revealed that, the panicle length was affected by the different sowing dates in the two seasons. The maximum values of panicle length (24.46 and 24.45cm) were recorded at early sowing date 5th May. But, the minimum values of panicle length (23.34 and 23.30cm) were recorded at late sowing date 25th May, in 2008 and 2009 seasons, respectively.

Table 4: Number of panicles/hill affected by the interaction between the different sowing dates and rice cultivars during 2008 and 2009 summer seasons.

Rice cultivar				
2008		2009		
Sakha 101	Giza 178	SK.2034H_1	Sakha 101	Giza 178
15.33d	15.00e	25.33a	15.33d	14.67d
15.00e	14.67f	22.67b	15.00d	14.33d
13.33g	13.00h	21.00c	13.00e	12.67e

Means designed by the same letter are not significantly different at 5%level, using Duncan multiple range test.

In the other side, the maximum values of panicle length were (25.57 and 25.52cm), with Sk. 2043H_1rice cultivar. But, the minimum values were (22.67 and 22.68cm) with Giza178 rice cultivar, in 2008 and 2009 summer seasons respectively.

The interaction between the two factors was not significant for panicle length in both seasons involved in this study that each factor affected this study independently.

B.3- Panicle weight (g)

Panicle weight was studded under different sowing dates treatment and the results are shown in table 5. From these data, it is clear that different sowing dates had significantly affected panicle weight. Sowing rice at early (5thMay) produced the heaviest panicle weight which reached were (4.18 and 4.20g) in the first and second seasons, respectively. compared with other sowing dates in that respect. While, the late sowing date (25thmay) recorded the lowest ones.

The data indicated that, there were significant differences among three rice cultivars for panicle weight. The highest values (4.34 and 4.35g) were recorded with using Saka101rice cultivar in 2008 and 2009 seasons, respectively. But, the lowest values (3.61 and 3.62g) were obtained of Giza178 rice cultivar in 2008 and 2009 seasons, respectively.

The interaction between the two factors was not significant for panicle weight in season 2008 involved in this study indicating, thereby, that the effect of sowing date different from cultivar to anther.

Table 6 showed the panicle weight as affected by the interaction between sowing dates and rice cultivars in 2009 seasons. The maximum values of the panicle weight were (4.50 g) at early sowing date with Sakha101 rice cultivar, and the minimum values were (3.433 g) at late sowing date with Giza178 rice cultivar in 2009 seasons. These results indicated that, panicle weight was highly affected by sowing date and rice cultivar.

Table 5: Effect of sowing and date, rice cultivars as well as their interaction on panicle weight, number of filled grains/panicle and seed set % during 2008 and 2009 seasons.

Character / Treatment	Panicle weight (g)		No. of filled grains/panicle		Seed set (%)	
	2008	2009	2008	2009	2008	2009
Sowing (A):						
5 May	4.19a	4.20a	157.33a	157.56a	96.81a	96.86a
15 May	4.14a	4.16a	155.89a	155.11b	96.22b	96.17b
25 May	3.97b	3.93b	151.22b	150.00c	93.98c	93.93c
f-test	**	**	**	**	**	**
Cultivar (B):						
SK. 2034H$_1$	4.34a	4.31a	160.33a	158.89a	94.92b	94.72c
Sakha101	4.34a	4.36a	152.11b	152.11b	96.43a	96.46a
Giza178	3.61b	3.22b	152.00b	151.67b	95.66b	95.78b
f-test	**	**	**	**	*	**
Interaction A x B	NS	**	NS	NS	**	**

*, ** and NS indicate that p≤ 0.05,p≤ 0.01 and not significant. Means of each factor deigned by the same letter(s) aren't significantly different at 5% level according to Duncan's multiple range tests

Table 6: panicle weight as affected by the interaction between the different sowing dates and rice cultivars during 2009 season.

Sowing date	Rice cultivar		
	Sk.2034H$_1$	Sakha101	Giza178
5 May	4.37bc	4.50a	3.73f
15/5 May	4.33c	4.43ab	3.70f
25 May	4.23d	4.13e	3.43g

Means designed by the same letter are not significantly different at 5%level, using Duncan multiple range test.

B.4- Number of filled grains/panicle

The results in Table 5 revealed that, the effect of the different sowing dates was highly significant on number of filled grains/panicle in the two seasons of 2008 and 2009. The maximum value (157.33 and 157.55grain) were obtained when sowing at the early sowing date 5th May. Vice versa, the minimum values were (151.22 and 150.00 grain) when sown late at date 25th May in 2008 and 2009 seasons respectively.

The data indicate that, there were significant differences among rice cultivar for number of filled grains, the maximum values (160.33 and 158.89 grain) were recorded with Sk. 2034H_1 rice cultivar. The minimum values (152.00 and 151.67 grain) were obtained for the number of field grains for Giza178 rice cultivar in 2008 and 2009 seasons respectively.

Number of filled grains/panicle was not affected in any of the two seasons by the interaction between the two factors involved in this study indicating, thereby, that each factor affected this study independently.

B.5- Seed set percentage (%)

The data in Table 5 indicate that, there was significant differences between the sowing dates for the seed set percentage in the both seasons the maximum value for the seed set percentage (96.81 and 96.85 %) were obtained at early sowing date 5th May. As well as with Sakha101 rice cultivar (96.43 and 96.45 %) were recorded during 2008 and 2009 season, respectively.

But, the minimum values of the seed set percentage (93.97 and 93.93 %) were recorded at late sowing date 25th May. While, the lowest values of the seed set percentage (94.92 and 94.72 %) were recorded with Sk. 2034H_1 rice cultivar in two seasons 2008 and 2009, respectively.

Data presented in table 7 showed the seed set (%) as affected by the interaction among rice cultivars and sowing date in both seasons, the maximum values of seed set percentage (97.17 and 97.23%) were obtained season of the Sakha101 cultivar in the early sowing date (5th May), and the minimum values (93.23 and 93.20%) were recorded in Giza178 cultivar of late sowing date (25th May). These results indicate that, the Sakha101 cultivar was superior early sowing date (5th May) for seed set percentage.

Table 7: Seed set (%) as affected by the interaction between the sowing dates and rice cultivars during 2008 and 2009 seasons.

Sowing date	Rice cultivar					
	2008			2009		
	Sk. 2034H_1	Sakha 101	Giza 178	Sk. 2034H_1	Sakha 101	Giza 178
5/5	96.37b	97.17a	96.90a	96.23b	97.23a	97.10a
15/5	94.97c	96.93a	96.77b	94.73d	96.97a	96.80a
25/5	93.23d	95.20c	93.30d	93.20e	95.17c	93.43e

Means designed by the same letter are not significantly different at 5%level, using Duncan multiple range test.

B.6- 1000-grain weight (g)

The data in Table 8 indicate that, there were significant differences between the different sowing dates for 1000-grain weight in both seasons 2008 and 2009. The maximum values (24.33 and 24.33g) were recorded with using early sowing date 5th May. But the minimum values (23.67 and 23.67g) were obtained at late sowing date 25th May of both seasons, respectively. These results indicated to, the increasing of out crossing will increase the seed set % and grain filling rate.

Moreover, the maximum values of 1000-grain weight (27.78 and 27.67g) were recorded at Sakha101 rice cultivar. But, the minimum values (21.67 and 21.78g) were obtained at Giza178 rice cultivar in 2008 and 2009 summer seasons.

The interaction between sowing date and cultivars was not significant for 1000-grain weight in any of the two seasons under the local conditions of the present investigation.

Table (8): Effect of sowing date and some rice cultivars as well as their interaction on 1000-grain weight (g) and grain yield (t/ha) during 2008 and 2009 seasons.

Character / Treatment	1000-grain weight (g)		Grain yield (t/ha)	
	2008	2009	2008	2009
Sowing (A):				
5 May	24.33a	24.33a	12.75a	12.74a
15 May	24.33a	24.22a	12.36a	12.36a
25 May	23.67b	23.67b	10.76b	10.73b
f-test	**	**	**	**
Cultivar(B):				
SK.2034H$_1$	22.89b	22.78b	13.76a	13.30a
Sakha101	27.78a	27.67a	11.45b	11.44b
Giza178	21.67c	21.78c	11.10b	11.10b
f-test	**	**	**	**
Interaction A x B	NS	NS	NS	*

*, ** and NS indicate that p≤ 0.05,p≤ 0.01 and not significant. Means of each factor deigned by the same letter(s) aren't significantly different at 5% level according to Duncan's multiple range tests

B.7- Grain yield (t/ha)

Data in Table 19 show that, there were high differences between the sowing dates for grain yield. Equally for the grain yield the maximum values (12.75 and 12.74 t/ha) were obtained when used early sowing date 5th May. But, the minimum values (10.75 and 10.73 t/ha) were recorded at late sowing date 25th May. during 2008 and 2009 summer season, respectively.

The data in the same table indicated that, there were significant differences among the rice cultivar for grain yield, the maximum values were (13.76 and 13.30 t/ha) at the Sk. 2034H_1 rice cultivar during 2008 and 2009 summer seasons, respectively.

But, the minimum values (11.10 and 11.10 t/ha) were recorded Giza178 rice cultivar, in two seasons respectively. These results referred to the SK 2034H_1 rice cultivar its high yielding, while, Sakha101 it's also, high yielding, but, susceptible to blast disease during last three years. The results were agreement with Zayed *et al.* (2005) they found that, early sowing of 25th April performed better than other dates with respect of growth, grain yield and it is attributes followed by date of 10th May.

Table (9) Show the grain yield as affected by the interaction between sowing dates and rice cultivars. the maximum of the grain yield was recorded by early sowing date with Sk.2034H_1 rice cultivar (14.327 t/ha), while the lowest values were (9.993 t/ha) was given by late sowing date with rice cultivar Giza178 in 2009 seasons. These results indicated that, the grain yield was highly affected by the heterosis effect for the hybrid cultivar Sk. 2034H_1.

For the above results we can concluded that, the Sk. 2034H_1rice hybrid was early and highly yielding cultivar comparing other cultivars. Moreover the early sowing date gave the highest grain yield comparing the other sowing dates.

Table 9: Grain yield (t/ha) as affected by the interaction between the different sowing dates and rice cultivars during 2009 seasons

owing date	Cultivar		
	Sk.2034H_1	Sakha101	Giza178
5 May	14.33a	12.20c	11.70de
5 May	13.49b	11.98cde	11.69e
5 May	12.08cd	10.19f	9.99f

Means designed by the same letter are not significantly different at 5%level, using Duncan multiple range test.

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الملخـــص العربـــــــي

تأثير مواعيد الزراعة على إنتاجية بعض أصناف الأرز

محمود أبو يوسف * و صبحى غريب ** و زهران عبد الكريم ** ومحمد توفيق *

***قسم بحوث الأرز – معهد بحوث المحاصيل الحقلية – مركز البحوث الزراعية**

****قسم المحاصيل – كلية الزراعة – جامعة كفر الشيخ**

١- أجريت عدة تجارب حقلية في مزرعة مركز البحوث والتدريب في الأرز بسخا خلال موسمي الزراعة ٢٠٠٨ و ٢٠٠٩ لدراسة تأثير مواعيد الزراعة المختلفة لبعض أصناف الأرز على الإنبات والنمو والمحصول ومكوناته. أجريت تجربتان حقليتان في موسمي ٢٠٠٨ و ٢٠٠٩م لتقييم ثلاث أصناف من الأرز (Sk.2034H1 – سخا ١٠١ – جيزة ١٧٨) تحت ثلاثة مواعيد زراعة (٥ مايو ، ١٥ مايو ، ٢٥ مايو). واستخدمت في تنفيذ التجربة تصميم القطع المنشقة split-plot في ثلاث مكررات خصصت القطع الرئيسية لمواعيد الزراعة و القطع الشقية للأصناف. وكانت أهم النتائج هى :

* تأخر ميعاد التزهير في نباتات الصنف الهجين (Sk.2034H1) والصنف سخا ١٠١ معنويا عن الصنف جيزة ١٧٨ في الموسمين و زاد طول النبات ، زاوية ورقة العلم ، مساحة ورقة العلم في صنف الأرز الهجين (Sk.2034H1) عما في الصنف جيزة ١٧٨ في الموسمين.
* أدى التأخير فى ميعاد الزراعة إلى التبكير في ميعاد التزهير ،نقص في طول النبات ، زاوية ورقة العلم و مساحة ورقة العلم في الموسمين.
* اختلفت الأصناف الثلاثة معنويا في محصول الحبوب وجميع مكوناته في الموسمين، حيث تفوق الصنف الهجين (Sk.2034H1) معنويا على الصنفين الآخرين في عدد السنابل/جوره ، طول السنبلة ، وزن السنبلة ، عدد الحبوب الممتلئة/سنبلة و محصول الحبوب بالهكتار في كلا الموسمين. بينما تفوق الصنف سخا ١٠١ على الصنفين الآخرين في وزن ١٠٠٠ حبة في الموسمين.* أدى تأخير الزراعة من ٥ مايو إلى ٢٥ مايو إلى نقص معنوي في محصول الحبوب وجميع مكوناته في كلا الموسمين.فقد سجل ميعاد الزراعة المبكر (٥ مايو) أعلى القيم في عدد السنابل/جوره ، طول السنبلة، وزن السنبلة ، عدد الحبوب الممتلئة بالسنبلة ، وزن ١٠٠٠ حبة و محصول الحبوب/هكتار. بينما سجل الميعاد المتأخر (٢٥ مايو) أقل القيم في تلك الصفات خلال الموسمين.
* يستنتج من النتائج انه يمكن الحصول أعلى محصول حبوب /هكتار من زراعة الصنف الهجين (Sk.2034H1) في الميعاد المبكر (٥ مايو).