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Evaluation of Three Chance-Seedling of Dry Date Palms and Soltany Cultivar Grown Under Bahriya Oasis Conditions

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ABSTRACT

This study was carried out during two successive years (2013 and 2014) at El – Qasr Valley in Bahriya Oasis, Giza Governorate on three chance-seedling of dry date palms and Soltany cultivar. This study aimed to evaluate yield loads and characters of fruit physical and chemical characteristics in two stages (completing color and ripening stages). It was selected Soltany cultivar as reference because it considered to be the highest economic value among local dry cultivars in Bahariya Oasis. The results revealed that, Palm(2) gave the highest yield (70,70 Kg) comparing Soltany cultivar (63, 66 Kg) and palm (3) recorded (58,66 Kg) , also palm (3) gave the highest weight of fruit and flesh, fruit length, fruit diameter and fruit size, while, Soltany cultivar and palm (3) recorded the highest total sugar and reducing sugar in ripening stage and, it also records the highest value in the Soluble solids content in two stage while palm (3) gave the highest dry matter content in two seasons comparing with Soltany cultivar. Palm (3) can be the beginning of dry cultivar with good characteristics under Bahariya Oasis conditions. The soltany cultivar and palm (3) is suitable as a dry date palm replacement and in the extension for southern Egyptian Governorates .

INTRODUCTION

Egypt is considered to be one of the major date producing countries in the world. Date palm (Phoenix dactylifera L.) is one of the important fruit species grown in Egypt. Date palms are distributed in Nile valley, Oases and desert districts. It can grow well under drastic environmental conditions which may be not suitable for many fruit species. Date palm cultivars divided into three main groups according to its fruit moisture content, i.e. soft. semi – dry and dry cultivars. (Hussein *et al*., 1979).

Date palm trees could grow under unfavorable conditions where many of other fruit species could not will grow. Date palm is the most common fruit tree grown in semi arid and arid- regions. It plays an important role in the protection of interplant cropping systems and the stabilization of the ecological system. (Hasnaoui*eta/*. 2011). For this reason date palm is considered one of the suitable trees which could be cultivated in the new reclaimed desert regions. Tree palm fruits are one of the most important export fruit crops in Egypt, where they are harvested and marketed at three stages of their development, The three stages are khalal (bisr), rutab and tamar{ Kassem 2012).

Population of date palm trees whether concentrated or scattered in Bahariya Oasis reached 1.3-1.5 million date palm and almost 100,000 palm in new reclaimed areas. while that planted to other fruit trees (olives, apricot, citrus, grapes, pomegranate) and ancient farming areas represent 8000 feddans, (The Agriculture Director of Bahariya Oasis 2014) .

The aim of this work is to survey and evaluation of dry date palm of chance seedlings under El-QasrVally in Bahariya Oasis conditions to know and select new and good seedlings to grow and produce under these conditions.

MATERIALS AND METHODS

The present investigation was conducted on three date palm of chance seedling and soltany cultivar as control reference grown in a sandy soil under Bahariya Oasis district ,Giza Governorate ,Egypt to evaluate physical and chemical fruit properties during the two successive seasons (2013 and 2014). of the study.

All trees under study were chosen among twelve palms trees grown in different areas of Bahariya Oasis according to panel test survey. Only four palms were chosen according their fruit quality *i.e.*, fruit size, fruit weight, flesh fruit weight, seed weight, fruit length , and chemical fruit properties : moisture content, SSC content,fruit acidity percentage .

All date palms seeded trees were in a good health without any infections. Palms age ranged from 15 to 25 years old and always subject to the same horticulture practices.

The chosen female palms were hand pollinated by using the same source of pollen grains. Date of pollination for the majority of the spathes (80%) of each palm tree was recorded and considered as start point for counting the fruit age.

In each experimental season, in general, aspects and parameters of the field and laboratory work were as follows:

1. Fruit characters

A. Palm yield

The total weight (yield/palm by Kg) of all bunches on each palm tree was calculated and tabulated during both seasons.

B. Fruit physical properties

Thirty fruit swere randomly taken, at harvest time, as a sample for each palm during both seasons of study. Samples fruits were divided into three groups; each of 10 fruits treated as a replicate to determine the following characteristics:

1. Fruit weight

It was calculated by weighing each of 30 fruits as a replicate. The average fruit weight, in grams, was calculated.

2. Flesh weight

It was calculated by weighing each of 30 fruits, as a replicate, after removing seeds. The average fruit weight, in grams, was also tabulated.

3. Seed weight

It was estimated by the differences between fruit weight and flesh fruit weight, and the average seed weight (in grams) was tabulated.

4. Fruit Length

Fruit length was measured using individual fruits of each replicate (10 fruits) per palm tree in both seasons.

5. Fruit size

It was calculated by immersing each of 10 fruits (as a replicate) in a known quantity of water in a graduated jar from which the average volume (cm^3) of fruits was tabulated.

6-Fruit Diameter:

Fruit Diameter was measured using individual fruits of each replicate (10 fruits) per palm tree in both seasons.

d. Fruit chemical properties

Thirty fruits were randomly taken at harvest time as a sample for each palm during both seasons of the study. Samples of fruits were divided into three groups (10 fruits of each). Each group was treated as a replicate to determine the following characteristics.

1. Moisture content and dry matter of the fruit (%); according to A.O.A.C.,(1995).

Fruit samples were cleaned and the perianths and seeds were removed. Date flesh was cut into pieces and dried at 60-65 C° for 48 hours. The moisture and dry matter content percentages calculated using the following equations (Abd El- Sadek, 1999):

$$\text{Moisture (\%)} = \frac{\text{weight before drying} - \text{weight after drying} \times 100}{\text{Weight before drying}}$$

$$\text{Dry matter (\%)} = \frac{\text{Average dry weight (g)} \times 100}{\text{Average fresh weight (g)}}$$

2. Soluble solids content (SSC %)

SSC content was determined in the fruit juice using a hand refractometer (A O A C, 1995).

3. Fruit acidity percentage

Fruit acidity was determined by using 10 ml of fruit juices Solution (a known fruit flesh weight blended in known water volume) which were titrated against Sodium hydroxide, using phenolphthalein as an indicator according to Official methods (A. O. A. C., 1995), and the titratable acidity was calculated as Maleic acid (Mawlood, 1980).

4. Total soluble sugars content

It was determined according to Dubois et.el. (1956) in the methanol extract using the phenol sulphuric acid method; and the concentration was calculated as g/100 g dry weight, as Total soluble sugars:

5. Reducing sugars content

It was determined in the methanol extract according to titration method of Nelson and Somogy as described in A.O.A.C. (1995); and the percentage was calculated as g /100 g fresh weight.

6. Non-reducing sugars content

It was determined by differences between total and reducing sugars.

7. Statistical analysis

A randomized complete block design with one factor was used for analysis all data with three replications. The treatment means were compared by least significant difference (L.S.D.) test as given by (Snedecor and Cochran (1994)). Statistical analysis was carried out by special statistical program (ASSISTAT).

RESULTS AND DISSCUSION

A. Palm yield

Data in table (1) showed that palm(2) gave the highest yield in two seasons (70 Kg) and the palm (3) recorded (58 and 66 Kg) respectively while the Soltany C.V (control) gives (63 and 66 Kg) respectively, These results are in agreement with those of El – Merghany and Zaen El – Daen (2013).

Table 1.The yield (Kg) of 4 palm date cultivars grown at Bahariya Oasis during 2013 and 2014 seasons.

Palm	Yield /Kg Season ٢٠١٣	٢٠١٤
1	٣٥	٤٥
2	٧٠	٧٠
3	58	6٦
Control	٦٣	٦٦

B. Fruit Physical Properties

Data in table (2) showed that fruit weight (g) in selected of date palm seedlings (palms 3) gave the highest result (15.33 g) comparing with control Soltany cultivar (14.37 g)during first season without significant between them , At the stage of completing color the same trend found in the second season. Palms (3) gave the highest result (18.51 g) comparing with Soltany cultivar (13.61 g) respectively with significant between them , while was palm (1) was the least weight in two seasons (6.64 , 7.69 g) respectively . Also in the ripening stage data showed that fruit weight (g) fruit selected of date palm seedlings palm (3) gave the highest value (14.23 g) comparing with control of Soltany cultivar (13.05 g) during first season without significant between them . But in the second season of ripening stage , palm (3) gives the highest result (15.49 g) comparing with Soltany cultivar (11.61 g) with significant among them , These results are in agreement with those reported by Hussein *et al*., (1993), Soliman (2002),Rizk and Omima (2004) a, Abo Rekab *et al*., (2010) and El – Merghany and Zaen El – Daen (2013).

Table 2.The Fruit Weight (g) of 4 palm trees grown at Bahariya Oasis during 2013 and 2014 seasons.

Treatments	Fruit Weight			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	6.64	7.69	6.29	6.67
2	12.32	10.12	11.41	7.63
3	15.33	18.51	14.23	15.14
Control	14.37	13.16	13.05	11.61
LSD at 0.05	2.96	1.28	2.15	1.20

C. Flesh weight per fruit

Data in table (3) showed that f flesh weight (g) fruit selected of date palm seedlings palm (3) gave the highest result (13.41 g) comparing with control Soltany cultivar and palms (2) (12.85 ,10.93 g) respectively during seasons without significant between them, At the stage of completing color the same trend found in the second season , palm (3)) gave the highest result (16.16g) comparing with Soltany cultivar (11.49 g) with significant between them , and palm (1) was the least weight in two seasons (5.13 , 6.4 g) respectively . Also in the ripening stage data showed that fruit weight (g) fruit selected of date palm seedlings (palms 3)gave the highest value (12.33 g) comparing with control Soltany cultivar (11.53 g)during first season without significant between them . But in the second season of ripening stage , (palms 3) graves the highest result (12.75 g) comparing with Soltany cultivar (10.27 g) with significant between them, but significant between them, These data are in agreement with those reported by soliman (2002), Rizk and Omima (2004) , Abo Rekab *et al*., (2010)) and El – Merghany and Zaen El – Daen (2013).

Table 3. Flesh Weight (g) of 4 date palms grown at Bahariya Oasis during 2013 and 2014 seasons.

Treatments	Flesh Weight			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	5.13	6.40	5.67	5.73
2	10.93	9.05	10.04	6.64
3	13.41	16.16	12.33	12.75
Control Soltany	12.85	11.49	11.53	10.27
LSD at 0.05	3.13	1.64	2.04	1.14

D. Fruit Dimensions

Data in table (4) showed that fruit length (cm) fruit selected of date palms palm (3) gave the highest result of fruit length (5.00 cm) comparing with control Soltany cultivar (4.73 cm) during first season with significant between them. At the stage of completing color the same trend found in the second season , palm (3) gave the highest result (5.07 cm) comparing with Soltany cultivar (4.97 cm) without significant between them , while was and palm (1) was the least fruit length in two seasons (3.53 , 3.43 cm) respectively . Also in the ripening stage data showed that fruit length (cm) fruit selected of date palm seedlings palms (3) gave the highest value (5.00 cm) comparing with control Soltany cultivar (4.70 cm) during first season without significant between them . But in the second season of ripening stage , palm (3) gives the highest result (5.03 cm) comparing with Soltany cultivar (4.7. cm) with significant between them, These Data are in agreement with those of Soliman (2002), Rizk and Omima (2004) and Abo Rekab *et al*., (2010)).

Table 4.Fruit Length (Cm) of 4 palm trees grown at Bahariya Oasis during 2013 and 2014 seasons.

Treatments	Fruit Length			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	3.53	3.43	3.43	3.23
2	3.77	3.47	3.70	3.27
3	5.00	5.07	5.00	5.03
Control	4.73	4.97	4.70	4.73
LSD at 0.05	0.25	0.28	0.36	0.26

Data in table (5) showed that fruit diameter (Cm) selected of date palm seedlings palm (3) gave the highest result (2.33 Cm) comparing with control Soltany cultivar (2.30Cm) during first season without significant between them , At the stage of completing color the same trend found in the second season , palms (3) gave the highest result (2.20 Cm) comparing with Soltany cultivar (1.80 Cm) with significant between them , while was palm (1) was the least diameter in two seasons (1.83,1.70Cm) respectively. Also in the ripening stage data showed that fruit diameter (Cm) in selected of date palm seedlings palm (3) gave the highest value (2.17 Cm) comparing with control Soltany cultivar (2.00 Cm) during first season with significant between them . But in the second season of ripening stage, (palms 3) gave the highest result (2.13 Cm)

comparing with Soltany cultivar (1.73 Cm) with significant between them, These results are in agreement with Hussein *et a*l,. (1993) ,Soliman (2002), Rizk and Omima (2004), Abo Rekab *et al*., (2010) and El – Merghany and Zaen El – Daen (2013).

Table 5.Fruit Diameter (Cm^3) of 4 palm trees grown at Bahariya Oasis during 2013 and 2014 seasons.

Treatments	Fruit Diameter			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	1.83	1.70	1.80	1.50
2	1.97	1.73	1.83	1.63
3	2.33	2.20	2.17	2.13
Control	2.30	1.80	2.00	1.73
LSD at 0.05	0.24	0.17	0.13	0.16

Data in table (6) showed that fruit size (cm^3) in selected of date palm seedlings palm (3) gave the highest result (15.00cm^3) comparing with control Soltany cultivar (14.33 cm^3) during first season without significant between them , At the stage of completing color the same trend found in the second season , palm (3) gave the highest result (19.33 cm^3) comparing with Soltany cultivar (14.67 cm^3) with significant between them , while was palm (1) was the least size in two seasons (7.33,7.67cm^3) respectively.Also in the ripening stage data showed that fruit size (cm^3) fruit selected of date palm seedlings palm (3) gave the highest value (14.33cm^3) comparing with control Soltany cultivar (14.00cm^3) during first season without significant between them . But in the second season of ripening stage , palm (3) gives the highest result (15.67 cm^3) comparing with Soltany cultivar (12.33 cm^3) with significant between them.

Data in table (٧) showed that seed weight (g) fruit selected of date palms palm (3) gave the highest result (1.92 g) comparing with control Soltany cultivar and palm 1(1.52 and 1.51g) respectively during first season without significant between them, At the stage of completing color the same trend found in the second season, palm (3) gave the highest result (2.53 g) comparing with Soltany cultivar (1.67g) with significant between them . Also in the ripening stage data showed that seed weight (g) fruit selected of date palm seedlings palm (3) gave the highest value (1.91 g) comparing with control Soltany cultivar (1.52 g) during first season with significant between them and in the second season of ripening stage , palm (3) gave the highest result (2.39 g) comparing with Soltany cultivar (1.34 g) with significant between them , These results are in agreement with those of Rizk and Omima (2004) .

Table 6. Fruit Size (Cm^3) of 4 palm trees grown at Bahariya Oasis during 2013 and 2014 seasons.

Treatments	Fruit Size			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	7.33	7.67	7.33	7.33
2	12.00	11.33	11.33	8.00
3	15.00	19.33	14.33	15.67
Control	14.33	14.67	14.00	12.33
LSD at 0.05	2.33	2.18	2.23	1.59

Table ٧.Seed Weight (g) of 4 palm trees grown at Bahariya Oasis during 2013 and 2014 seasons

Treatments	Seed Weight (g)			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	1.51	1.29	0.96	0.95
2	1.40	1.07	1.37	0.99
3	1.92	2.35	1.91	2.39
Control	1.52	1.67	1.52	1.34
LSD at 0.05	0.41	0.57	0.13	0.16

E. Feuit Chemical Properties

Data in table (٨) showed that fruit content of total sugars in fruit selected of date palms palm (1) gave the highest result (77.00 %) comparing with palm (3) recorded (75.57 %) without significant between them while Soltany cultivar recorded (70.13) during first season , At the stage of completing color in the second season , palms (1) gave the highest result (77.02 %) comparing with control Soltany cultivar (74.80 %) without significant between them. Also in the ripening stage data showed that reducing sugar fruit selected of date palm seedlings palm (3) gave the highest value (86.38 %) comparing with control Soltany cultivar (86.00 %) during first season without significant between them and in the second season of ripening stage , Soltany cultivar gaves the highest result (85.10 %) while (palm 3) gives (85.03 %) without significant between them, These results are in agreement with those reported by several workers, Hussein *et al*., (1993), Youssef *et al*(1998), Rizk and Omima (2004) and Abo Rekab *et al*., (2010) .

Table ٨.The Fruit total sugars, content of 4 palm trees grown at BahariyaOasis during 2013 &2014 seasons .

Treatments	Total sugar (g/100g dry weight)			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	77.00	77.02	75.06	79.96
2	73.60	75.76	73.29	78.80
3	75.57	72.06	86.38	85.03
Control	70.13	74.80	86.00	85.10
LSD at 0.05	3.01	2.24	4.68	2.34

Data in table (٩) showed that fruit content of reducing sugar in fruit selected of date palm seedlings (palm 3) gave the highest result (60.63 %) comparing with control Soltany cultivar (58.60 %) during first season without significant between them , At the stage of completing color in the second season , Soltany cultivar gives the highest result (61.3 %) while (palm 3) gives (59.9 %) without significant between them , while was (palm 1)was the least length in two seasons (52.60 and 53.77 %) respectively . Also in the ripening stage data showed that reducing sugar fruit selected of date palm seedlings (palm 3)gave the highest value (60.2 %) comparing with control Soltany cultivar (57.8 %) during first season without significant between them and in the second season of ripening stage , Soltany cultivar gave the highest result (66.40 %) while (palm 3) gives (60.2 %) with significant between them, These results are in agreement with those of both Rizk and Omima (2004) and El – Merghany and Zaen El – Daen (2013).

Table ٩.The Fruit reducing sugars, content of 4palms grown at Bahariya Oasis during 2013 &2014 seasons .

Treatments	Red. Sugars (g/100g dry weight)			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	52.60	53.77	57.60	56.30
2	53.20	58.30	50.10	53.80
3	60.63	59.90	60.20	60.20
Control	58.60	61.30	57.80	66.40
LSD at 0.05	3.43	2.94	2.79	3.59

Data in table (١٠) showed that non reducing sugar in fruit selected of date palm seedlings palm (1) gave the highest result (24.4 %) comparing with control Soltany cultivar (12.5 %) during first season with significant between them, At the stage of completing color in the second season , palm (1) gives the highest result (22.48%) comparing with control Soltany cultivar (11.5 %) with significant between them. Also in the ripening stage data showed that non reducing sugar fruit Soltany cultivar gave the highest value (27.6 %)while palm (3),1and palm (2) recorded (25.7,25.7and 23.5 %) during first season without significant between them and in the second season of ripening stage , palm (3) gave the highest result (25.3 %) comparing with control Soltany cultivar (18.7 %) with significant among them.

Data in table (١١) showed that acidity in fruit selected of date palms palm (3) gave the highest result (0.30) comparing with control Soltany cultivar (0.02) and palm (1and 2) recorded (0.09 and 0.03) respectively during first season without significant between them , At the stage of completing color in the second season , palm (1) gives the highest result (0.07) comparing with control Soltany cultivar (0.05) and palm 2,3 recorded (0.06) without significant between them . Also in the ripening stage data showed that acidity fruit palm (1) gave the highest value (0.13) comparing with control Soltany cultivar(0.06) with significant between them , and in the second season of ripening stage palm (1) gave the highest result (0.13) comparing with control Soltany cultivar (0.06) with significant between them.

Table ١٠.The Fruit non reducing sugars, content of 4 palms grown at BahariyaOasis during 2013 &2014 seasons .

Treatments	Non red. Sugars (g/100g dry weight)			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	24.40	22.48	25.70	23.30
2	20.25	18.33	23.50	25.00
3	14.93	12.40	25.70	25.30
Control	12.50	11.50	27.60	18.70
LSD at 0.05	4.44	1.822	4.19	5.08

Table ١١.The Fruit Acidity (%) of 4 palms grown at Bahariya Oasis during 2013&2014 seasons.

Treatments	Acidity % completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	0.09	0.07	0.13	0.13
2	0.03	0.06	0.02	0.03
3	0.30	0.06	0.04	0.03
Control	0.02	0.05	0.06	0.06
LSD at 0.05	0.38	0.05	0.01	0.01

Data in table (١٢) showed that Total Soluble Solid in fruit selected of date palms palm (3) gave the highest result (39.43 %) comparing with control Soltany cultivar (35.93 %) during first season with significant between them, At the stage of completing color in the second season , Soltany cultivar gave the highest result (33.4 %) while palm (3) recordeds (33.13 %) without significant between them. Also in the ripening stage data showed that Total Soluble Solid fruit Soltany cultivar gave the highest value (69.33 %) while Palm (3) recorded (67.43 %) with significant between them , and in the second season of ripening stage palm (3) gave the highest result (64.17 %) comparing with control Soltany cultivar (63.67 %) without significant between them, These results are in agreement with of El – Merghany and Zaen El – Daen (2013).

Data in table (١٣) showed that moisture content percentage fruit selected of date palms palm (1) gave the highest result (54.73 %) comparing with control Soltany cultivar (46.04) while palm (3) at the least (35.40 %) during first season with significant between them, At the stage of completing color in the second season the results recorded the highest reads was palm (1) (55.04 %) comparing with Soltany cultivar (40.83) with significant between them. Also in the ripening stage data showed that moisture content percentage fruit selected of date palm seedlings palm (1) gave the highest value (33.27 %) comparing with control Soltany cultivar (22.84 %) while the lowest value palm (3) recorded (18.03 %) during first season with significant between them and in the second season of ripening stage , palm (1) gave the highest result (30.33 %) comparing with Soltany cultivar (27.67 %) without significant between them and the least was palm (2) recorded (19.16 %), These results are in agreement with those reported by Rizk and Omima (2004), Abo Rekab *et al*., (2010) and El – Merghany and Zaen El – Daen (2013).

Data in table (١٤) showed that dry matter percentage fruit selected of date palms palm (3) gave the highest result (66 %) comparing with control Soltany cultivar (54.39 %) during first season with significant between them , At the stage of completing color the same trend found in the second season , palms (3) gave the highest result (59.84 %) comparing with Soltany cultivar (59.6 %) with significant between them , while palm (1)was the lowest in two seasons (45.73, 45.67 %) respectively . Also in the ripening stage data showed that dry matter percentage fruit selected of date palm seedlings palms (3) gave the highest value (82.17 %) comparing with control Soltany cultivar (78.15 %) during first season with significant between them and in the second season of ripening stage, (palm 2 and palm 3) gave the highest result (80.77, 77.6 %) comparing with Soltany cultivar (72.97 %) with significant between them , These results are in agreement with those of Rizk and Omima (2004), Abo Rekab *et al*., (2010) and El – Merghany and Zaen El – Daen (2013).

Table ١٢.The Fruit SSC (%) of 4 palms grown at Bahariya Oasis during 2013&2014 seasons.

Treatments	S S C % completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	26.33	25.27	55.30	51.37
2	24.90	30.00	49.10	55.03
3	39.43	33.13	67.43	64.17
Control	35.93	33.40	69.33	63.67
LSD at 0.05	2.24	2.64	1.43	2.16

Table ١٣.The Moisture content (%) of 4 palms grown at Bahariya Oasis during 2013&2014 seasons.

Treatments	Moisture % g/100g of fresh wt. completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	54.73	55.04	33.27	30.33
2	53.70	43.64	25.43	19.16
3	35.40	40.86	18.03	21.97
Control	46.04	40.83	22.84	27.67
LSD at 0.05	1.98	2.75	2.00	2.91

Table 1٤.The Dry Matter (%) of 4 palm trees grown at Bahariya Oasis during 2013&2014 seasons.

Treatments	Dry weight g /fresh weight			
	completing color stage		Ripening stage	
	1st Season	2nd Season	1st Season	2nd Season
1	45.73	45.67	67.23	69.67
2	46.64	57.07	74.77	80.77
3	66.00	59.84	82.17	77.60
Control	54.39	59.60	78.15	72.97
LSD at 0.05	1.48	3.28	2.33	2.80

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تقييم ثلاث سلالات بذرية جافة لنخيل البلح إضافة لصنف السلطاني تحت ظروف الواحات البحرية

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****المعمل المركزي لابحاث وتطوير نخيل البلح - مركز البحوث الزراعية**

أجريت الدراسة الحالية خلال موسمي (٢٠١٣ – ٢٠١٤) بقرية القصر مركز الواحات البحرية التابعة لمحافظة الجيزة على ثلاث سلالات بذرية جافة لنخيل البلح اضافة لصنف السلطاني (كصنف مرجعي) . وذلك بهدف تقييم تلك السلالات من حيث المحصول والصفات الطبيعية والكيمائية للثمار ومقارنتها بالصنف السلطاني خلال مرحلتي (أكتمال التلوين والنضج) .وتم اختيار صنف السلطاني (control) لأنه اعلى الاصناف الجافة اقتصاديا في الواحات البحرية .وأظهرت النتائج تفوق السلالة رقم (٢) من حيث كمية المحصول (٧٠و٧٠ كجم)على صنف السلطاني (٦٣و٦٦ كجم) والسلالة (٣) سجلت (٥٨ و٦٦ كجم) وتفوقت السلالة رقم (٣) في الصفات الطبيعية للثمار (وزن وطول وقطر وحجمالثمرة) خلال الموسمين على صنف السلطاني والسلالتين (١و٢) . بينما كان سجل صنف السلطاني والسلالة رقم (٣) أعلىالنتائج في السكريات الكلية والمختزلة خلال مرحلة النضج وسجلوا ايضا اعلى النتائج في نسبة المواد الصلبة الذائبة الكلية خلال مرحلتي نمو الثمرة ، بينما سجلت السلالة رقم (٣) أعلى قيمة في محتواها من المادة الجافة. كانت سلالة نخيل البلح رقم (٣) من سلالات النخيل الجافة المتميزة تحت ظروف الواحات البحرية .وصنف السلطاني والسلالة (٣) تعد من اشجار النخيل الجافة المتميزة والواعدة مستقبلا حيث يمكن التوسع في زراعتها بمحافظات جنوب مصر.