Assiut J. Agric. Sci., 52 (5) 2021 (130-141) *ISSN: 1110-0486*
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Assessment of Some Soft Date Palm Cultivars Grown under the Conditions of Aswan Governorate

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Accepted for publication on: 15/12/2021

Abstract

The current research was set up during 2019 and 2020 seasons to appraisal some soft date palm (Samany, Zaghloul and Barhee) grown in Aswan governorate, Egypt. Under this study Vegetative gross properties and fruiting traits, as well as arithmetic and economic evaluation were studied.

The present results cleared that Samany and Barhee date palm cultivars gave the best rating of generality investigated of vegetative growth characteristics in comparison to Zaghloul date palm cultivar. In the contrary, Zaghloul date palm gave the upper components of yield next by Barhee date palm, whereas Samany date palm gave the less value. No significant differences were found among Barhee and Zaghloul date cultivars in components of yield. Barhee cultivar get the best fruit quality next by Samany cultivar, whereas, Zaghloul cultivar gave the lowest one with insignificant differences with Samany date cultivars.

From the numerally assessment of date palm cultivar, it can be coordinated in descending set as next: Barhee (92.5), Zaghloul (85.6) and Samany (79.5 units).

These results clarified that Barhee and Zaghloul date palm are appear favorable to get a high crop with best quality of fruit compared to Samany date palm cultivar under Aswan conditions. In addition, preference of Barhee cultivar to the superiority of its price and demand for export.

Keywords: *Date palm, Fruiting quality, Assessment, Soft, cultivars.*

Introduction

Date palm (*Phoenix dactylifera*) is one of the out dated local fruit crops in the Middle East countries and their dates leading service in the feeding types of numerous people as well as a strategically product in feed and biochemical manufacture (Ahmed 2008). Egypt is the leading Arab country in producing date (FAO, 2019) with 1590414 ton, about 18% of the global date production .In Egypt the fruitful female palms number are about 12534861 and Aswan governorate contributed with 1268162 fruitful female palms (M.A.L.R., 2019). Date palm cultivars are discordant to three major Collection due to their fruit moisture content, such as dry cultivars contains less than 20%, semi-dry had about 20-30% and soft had about offer 30%, and Hayani, Zaghloul, Samany and Bent Aisha are the most common soft types in Egypt (Hussein *et al*., 1979).

The shortage of superior cultivar numbers is a serious problem. Thousands of date palm cultivars exist in different growing countries. These cultivars have been developed by continuous selected performed by date palm growers all over the world

manly to improve yield and fruit quality.

During the last two decades, many new date palm cultivars have been introduced to Egypt; some of these cultivars are soft or semi-dry. To identify the best cultivars and to improve their production, we need a wide knowledge of all characters of these cultivars. This assessment could provide valuable information to prescribe the prime cultivars having higher yield and better good fruit quality which can be cultivated successfully under Aswan environmental conditions.

Characteristics of Morphological palm trees as well as properties physical of fruits, and chemical Characteristics of dates juice are the first steps in the development of distinctive date palm cultivars and initial date palm cultivars. Also, it may detect new and essential information for a better understanding of date fruit that helps to improve many factor and increase propagation of the best date varieties in order to satisfy the inspirations of the producers as well as consumers markets (Rokba *et al*., 1990; Salem and Hamdy, 1993; El-Sharabasy *et al*., 2003; Jaradate and Zaid, 2004; Ismail *et al*., 2006; Abdalla, 2002; El-Kosary, 2009 Gadalla, 2013 and El-Salhy *et al*., 2016). The cultivated varieties include dry, semi-dry and soft dates, depending on the prevailing environmental conditions. There are hundreds of date palm strains that had the chance to become commercial cultivars. Further, numeric cultivars were transport from one state to another with new names.

So, the target of this investigation was to evaluate the vegetative growth and fruiting of some soft date palm is grown under Aswan governorate conditions.

Materials and Methods

The current research was carried out on a private palm orchard located at El-Bayyarah region, Kom Ombo district, (N: 24º 27`54.7’’; E: 32° 55` 49.4”), Aswan Governorate, through two consecutive seasons of 2019 and 2020 on fifteen palms, to evaluate the behavior of some cultivars of soft date palm (Barhee, Zaghloul, and Samany) grown under such region. Data of monthly air temperature and relative humidity as an average during the two studied seasons are present in Table (1).

The chosen palm trees were at similar uniform vigor and age. These palm trees were 25 years old, had good physical conditions, and were free damages of insects and diseases. Surface irrigation system with Nile water use to irrigate these palms. The soil texture is silty clay. The palm trees were spaces at 7.0 x 7.0 meters about (85 trees / fed.)

The selected female palm trees were subject to the similar agricultural practices and traditional pollinated by use grains of pollen for a selected date palm male. In each experimental year, measurements and parameters of the field and laboratory action were as nexts:

Table 1. Monthly air temperature and relative humidity during the two seasons in Aswan Governorate.

Month	2019				2020			
	Max. temp. °C	Min. temp. °C	Mean temp. °C	Relative humidity% (R.H)	Max. temp. °C	Min. temp. °C	Mean temp. °C	Relative humidity% (R.H)
Jan	25.6	8.2	16.9	42.8	27.8	9.6	18.7	46.8
Feb	28.4	12.3	20.35	37.8	29.3	12.2	20.75	47.9
Mar	31.2	13.8	22.5	38	33.4	13.9	23.65	27.5
Apr	34.8	18.7	26.75	30.6	36.9	17.6	27.25	23.9
May	41.1	22.7	31.9	19.8	40.9	22.2	31.55	18.7
Jun	46.7	28	37.35	18.9	47.7	27.9	37.8	16.4
July	47.6	29.3	38.45	20.9	45.2	28.8	37	24.6
Aug	48.6	32.9	40.75	21.7	45.5	27.6	36.55	23.4
Sept	48.4	30.5	39.45	24.1	44.5	29.0	36.75	27.0
Oct.	46.02	27.32	36.67	27.17	45.04	28.13	36.585	33.25

Source : Central Laboratory for Agricultural Climate, Agriculture Research Center, Giza, Egypt.

1- Vegetative growth characteristics:

The trunk girth of palm at one meter on above the soil service was measured in meters. Four leaves per palm trees were randomly detached after harvesting to calculate, length of leaf, length of leaflet, area of leaflet, and area of leaf.

Area of Leaflet = (length of leaflet x max width x 0.84), Shabana and Antoun (1980). Zone spines % of leaf rachis and width of leaf base were calculated. Total chlorophyll was calculated using Chlorophyll Meter (Model: 2900 P2900 PDL Type: Electrical Equipment measurement)

2- Yield components:

At harvesting time at Khalal stage, the fruit retention was counted using five strands/ spathe,and then the retention of fruit was estimated according to the next equations:

$$Fruit\ retention\% = \frac{No.\ of\ retained\ fruits\ on\ the\ strand}{No.\ of\ retained\ fruits + No.\ of\ flowers\ scars} x\ 100$$

Also, the number of bunches per palm was counted and the leaf /bunch ratio was adjusted at the end of the flowering period to make attained of 8/1(13.5&14.8,15.6&17.6 and 16.5 & 16.5bunches) for Samany, Barhee, and Zaghloul cultivars this respectively.at harvesting time bunches were counted and weighted and hence the crop /palm was estimated .

3- Quality of dates (fruit):

At harvest time samples of 30 fruits per replicate (date palm) were transport to the laboratory, the standard physiochemical dates traits were estimated inclusive the next traits:

A- Physical fruit properties:

Fruit weight (g), flesh percentage, height & dimensions of fruit (cm), and the fruit shape (L/D) as physical properties were estimated.

B- Chemical characteristics:

In addition, Chemical properties in dates juice i.e. total soluble solids (TSS) were determined by refractometer, contents of sugar as total and reducing sugars as well as content of tannins were determined. In addition, total acidity was estimated and recorded as g. Malic acid/100 g Juice) due to the methods of A.O.A.C. (1985).

Over all assassination of the studded cultivars of palm trees scoring evaluation were estimated on the standard of 100 units that were shared though the growth of vegetative, yield and fruit quality. Hundred units were divided among the studied cultivars 30 units for vegetative growth (palm girth, leaf area, and total chlorophyll of leaf %), 30 units for the component of yield (No. bunch, fruit set, yield), and 40 units for quality of fruit (fruit weight, flesh percentage, soluble solids, and content of tannins) 10 units for each. Within each of these traits, the trait was registered the maximum most expect the minimum of tannins content values given 10 units for it. Relative values due to the other were calculated. Each cultivar that gave the highest recorded in any character was studded and took least units equal to their amount. In addition, an economic evaluation was conducted in terms of production costs, productivity, and net return from cultivating any of them (Ahmed *et al*., 2019).

Statistical analysis:

Consequently, the recorded data though the two seasons were collecting, tabulated, and subjection to the properly statistical analysis of variance method reported according to Gomez and Gomez (1984) and Mead *et al*., (1993). The differences between treatment means were distinguish use L.S.D at 5% parameter.

Results and Discussion

The traits of the studied palm cultivars include characteristics of vegetative, yield, and fruit quality:

1- Characteristics vegetative growth:

Results in Tables (2 & 3) described the vegetative growth traits of the three instigated (Samany, Zaghloul, and Barhee) cultivars. Results advertised that there is a major difference in traits of growth vegetative of various studied cultivars during the two studied seasons. It is evident from the data that the results took an identical trend during the two studied seasons. The registered palm girth was (204.4, 202.2 & 156.2 cm), width of leaf base (37.0, 36.5 & 28.7 cm), zone spine percentage (22.05, 19.86 & 18.16%), total leaf chlorophyll (73.17, 78.96 & 82.8%), leaf length (5.17, 4.84 & 3.89 m), leaflet length (51.76, 48.67 & 42.81 cm), leaflet area (116.0, 112.0, 93.7 cm^2) and total leaf area/palm (255.8, 291.8 & 235.2 m^2 as an av. of the two studied seasons) for Samany, Barhee and Zaghloul date palm cultivars, respectively. There were no significant differences between Samany and Barhee date palm cultivars on all studied vegetative traits except total chlorophyll and spine length percentage.

Samany cultivar had the maximum rating of mostly studied growth vegetative characteristics in comparison with another investigated cultivars. Samany cultivar was heist girth of palm (204.4 cm), leaf length (5.17 m), width of leaf base (37.0 cm), percentage of zone spine (22.05%), length of leaflet (51.76 cm), area of leaflet (116.0 cm^2) and area of total leaf / palm (255.8 m^2). In contrary the other side, the lowest rating of these characteristics were optioned of Zaghloul palm girth (156.2 cm) and length of leaf (3.89 cm), width of leaf base (28.9 cm), percentage of zone spine (18.16%), and length of

leaflet (42.81 cm) and area of leaflet (93.7 cm^2) and area of total leaf / palm (235.2 m^2). These results declared that, Samany palm cultivar gave the highest values of palm girth, leaf length leaflet length, leaflet area, and leaf area. The intermediation values of these characteristics were recorded on Barhee cultivar through both studied seasons. Hence, the percentage of increment for palm girth (30.85 & 29.45), area of leaf (32.90 & 24.2), width of leaf base (28.47 & 27.18), zone spine % (21.42 & 4.36), length of leaflets (20.91 & 13.69), area of leaflets (23.80 & 19.53), area of leaf (34.76 & 33.16%) and area of total leaf /palm (8.76 & 24.06% as an av. of the two studied seasons) in Samany and Barhee date palm cultivars comparative to Zaghloul date palm cultivar, respectively. In contrary, the percentage of increment for total chlorophyll attained (7.91 & 13.16% as an av. of the two studied seasons) in Barhee and Zaghloul date palm cultivar compared to Samany cultivar, respectively.

These data indicated that Samany and Barhee cultivars were the biggest palms, while, the Zaghloul cultivar was the smallest one in comparison to the another studied cultivar, in addition Zaghloul had a least area related to the leaflet number and its area.

2- Yield components:

The obtained results from the palm cultivar thought 2019 and 2020 seasons were presented in Table (4). The data declared that a significant different in number of bunches per palm and bunches weight as well as yield/palm. Number of bunches ambit from 16.2 to 23.0 bunch/palm as well as fruit retention ranged from 17.85 to 29.84% in the different studied palm cultivars, Weight of Bunch ambit from 7.46 to 11.70 kg and hence , the yield/palm attained 97.55 to 194.62 kg/palm. The maximum number of bunch (23.0 & 22.0) and (21.0 & 20.0 bunch) as well as retention of fruit (26.52 & 28.38%) and (28.64 & 29.84%) were apparent on Zaghloul and Barhee cultivars, next one in descending order by Samany cultivar (16.2 & 17.4) and (17.83 & 18.37%) respectively, in the two seasons of studied. Zaghloul cultivar recorded the highest weight bunch (11.52 & 11.87 kg) next one in descending order by Barhee date cultivar (9.92 & 10.34 kg) through the two studied seasons, respectively. Also, Zaghloul date cultivar recorded the highest weight yield/palm (184.60 & 194.67 kg/palm), followed by Barhee date cultivar (154.70 & 175.87 kg/palm) respectively, through the two seasons of studied,. In contrary, Samany date cultivar produce the least retention of fruit (17.83 & 18.37%) number of bunch (16.2 & 17.4 bunch/palm), the least weight bunch (7.28 & 7.63 kg), and the least weight yield/palm (97.55 & 112.92 kg/palm) through the two studied seasons, respectively. Hence, Barhee date cultivar recorded the intermediate rating for number of bunch, weight of bunch, and yield/palm.

Table 2. Some vegetative growth in certain soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons.

Cultivar	Ttunk girth cm			Width of leaf base cm			Zone spine %			Total Chlorophyll %		
	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean
Samany	204.4	204.4	204.4	37.3	36.7	37.0	22.56	21.55	22.05	72.55	73.80	73.17
Barhee	202.2	202.2	202.2	36.8	36.1	36.5	19.68	20.04	19.86	79.20	78.72	78.96
Zaghloul	156.2	156.2	156.2	28.5	28.8	28.7	18.25	18.08	18.16	83.40	82.20	82.8
LSD 5%	7.33	7.33		1.71	1.65		1.39	1.28		5.01	8.06	

Table 3. Some vegetative growth in certain soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons.

Cultivar	Length of leaf (m)			Leaflet length (cm)			Leaflet area (cm^2)			Total leaf area/palm (m^2)		
	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean
Samany	5.34	4.99	5.17	51.00	52.52	51.76	115.11	117.0	116.0	257.6	254.0	255.8
Barhee	4.76	4.91	4.84	48.77	48.55	48.67	111.89	112.1	112.0	242.8	291.8	291.8
Zaghloul	3.97	3.82	3.89	43.12	42.50	42.81	93.96	93.48	93.7	237.4	232.9	235.2
LSD 5%	0.24	0.21		2.05	2.94		5.99	7.67		21.37	23.50	

Table 4. Yield components and fruit characteristics of certain soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons

Cultivar	Number of bunch/palm			Fruit retention %			Bunch weight (Kg)			Yield/ palm (kg)		
	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean
Samany	22.0	20.0	21.0	17.85	18.37	18.11	7.28	7.63	7.46	97.55	112.92	105.24
Barhee	16.2	17.4	15.5	28.6	29.84	29.24	9.92	10.34	10.13	154.70	175.87	165.27
Zaghloul	23.0	21.0	22.0	26.52	28.38	27.45	11.52	11.87	11.70	184.60	194.67	189.65
LSD 5%	1.48	1.56		1.26	1.49		0.550	0.529		16.58	13.16	

It is noticed that there were insignificant variation between numbers of bunch that emergence per palm of Zaghloul and Barhee date palm cultivar.

3- Quality of fruits:

Data of difference dates traits of some palm cultivars growing under Aswan conditions through 2019 and 2020 seasons are in Tables (5 & 6). Data advanced that most studied palms cultivars were significant varied in quality of fruit. The weight of fruit, length of fruit, percentage of flesh, and fruit shape were ranging from (15.97 to 29.17 & 14.52 to 30.69 g), (3.54 to 6.00 & 3.52 to 5.62 cm), (89.06 to 92.70 & 90.03 to 93.10%) and (1.26 to 2.28 & 1.30 to 2.36) respectively , through the two seasons of studied,. Samany date fruits were the heaviest (29.17 & 30.69 g), longest (6.00 & 5.62 cm), whereas Barhee dates had highest percentage of flesh (92.70 & 93.10%) and Zaghloul dates had highest fruit shape index (2.28 & 2.36) among the tested dates during the studied seasons, respectively. In contrary, Barhee dates were the lightest (15.97 & 14.52 g) whereas Zaghloul had lowest flesh percentage (88.56 & 89.53%), as well as Barhee dates was shortest (4.54 & 3.52 cm) and least fruit shape index (1.26 & 1.30) compared to the other studied cultivar date fruits respectively, through the two studied seasons,.

According to the fruit chemical characteristics, data in the previous data declared that most studied date palm fruits were significantly differenced in properties of chemical Fruit juice. Results clarified that total soluble solids, total and reducing sugars and total tannins were next one (31.14 to 35.85 & 31.37 to 36.41%), (28.69 to 33.99 & 28.70 to 32.28%) and (20.50 to 23.35 & 20.71 to 23.29) and tannins % was (0.218 to 0.559 & 0.228 to 0.578%) respectively, in both the studied seasons, Samany dates had the highest tannins % and lowest values of other properties of chemical dates juice comparison to the author studied date cultivars dates. On conversely, Barhee date fruits get the highest total soluble solids (TSS) (35.85 & 36.41%) and total sugars content (33.99 & 32.28%) and reducing sugars (23.35 & 23.29%). In contrast, Samany fruits give the lowest TSS and sugar contents (31.14 & 31.37%) and (28.69 & 28.70%) through the two studied seasons, respectively. Intermediate values of all the studied chemical juice constituents were produce for the other studied cultivar date fruits. results clarity that significant differences were found in fruit total soluble solids and reducing sugars among Barhee (35.85 & 36.41%), Zaghloul (32.40 & 32.47%) as well as reducing sugar (21.85 & 21.79) and (21.61 & 21.58%) during the two studied seasons, respectively. these finding indicated that Barhee date palms had the heist chemical fruit quality in compression to Zaghloul and Samany cultivars.

These data assured the fact that vegetative growth, and yield depend on cultivar. The variation between of date palm cultivars may be due to either cytological difference between them or to the genotypes that are transmitted via seeds. These results are consistent with those obtained by Rokba *et al*., 1990; Abdalla, 2002; El-Sharabasy *et al*., 2003; Jaradate and Zaid, 2004; Ismail *et al*., 2006; Ibrahim, 2008; Abdalla, 2012; Gadalla, 2013 and El-Salhy *et al*., 2016. Thay stated that there was a large and major difference on vegetative growth, yield and date quality of most date palm strains or cultivars.

Overall assessment of the studied date palm cultivar:

The numerally assessment of date palm strains (Table 7) cleared that, Barhee and Zaghloul cultivars register the highest units due to the assessment evaluation, as it attained the highest score units (92.5 & 85.6) followed by Samany which occupied the third ranked (80.0).

The numerally assessment of these cultivars (average two seasons) cleared that; they were in a descending order as next: Barhee (92.5), Zaghloul (85.6), and Samany (79.5) on total units involved vegetative growth and fruiting traits.

The total score (40 units) for fruit quality of date palm (fruit weight, flesh percentage, TSS, and tannins) was significantly varied according to some date palm cultivars. Barhee and Samany gave the highest values compression for Zaghloul cultivar. The studied cultivars could be arranged descending based on total score (40) for fruit quality as follows:

Barhee (35.1), Samany (32.3) and Zaghloul (31.2 units).

Such results showed clearly that palm Barhee cultivar is considered promising cultivars grown under Aswan conditions.

Generally, the soft date palms under study were biggest different in their vegetative growth, yield, and physiochemical traits. Variations among these cultivars could be assantional due to their genetically and adaptability variance. Hence these results are important from economic and horticultural points of view. These results are in line with Sourial *et al*. (1982), Abdalla (1986), and El-Kosary (2009), who found that there is a superiority of Barhee date palm comparing with Samany or Zaghloul date palm, then, Barhee is considered as a promising date palm under Aswan Governorate condition.

Table 5. Some fruit characteristics of certain soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons

Cultivar	Weight of fruit (g)			Length of fruit (cm)			Shape index of fruit			Flesh %		
	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean
Samany	29.17	30.69	29.93	6.00	5.62	5.81	1.82	1.70	1.76	91.10	90.60	90.85
Barhee	15.97	14.52	15.25	3.54	3.52	3.53	1.26	1.30	1.28	92.70	93.10	92.9
Zaghloul	20.32	20.32	20.32	5.36	5.50	5.43	2.28	2.36	2.32	89.06	90.03	89.55
LSD 5%	2.45	2.32		0.35	0.33		0.123	0.109		3.31	3.25	

Table 6. Chemical characteristics of the fruits in certain soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons

Cultivar	TSS %			Total sugars (%)			Reducing sugars (%)			Tannins %		
	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean	2019	2020	Mean
Samany	31.14	31.37	31.25	28.69	28.70	28.69	20.50	20.71	20.60	0.559	0.578	0.574
Barhee	35.85	36.41	36.13	33.99	32.28	31.86	23.35	23.29	23.32	0.218	0.228	0.223
Zaghloul	32.40	32.47	32.43	29.36	29.54	29.45	21.61	21.58	21.59	0.374	0.393	0.381
LSD 5%	1.20	0.98		0.903	0.632		0.394	0.484		0.010	0.015	

Table 7. General evaluation of studied soft date palm cultivars grown under Aswan conditions as average of the two studied seasons (2019 & 2020).

Charac.	Vegetative growth				Yield components				Dates quality					
Sub. Cultivar	Girth (cm)	Leaf area (m^2)	Chloro-phyll %	Total	Bunch No.	Fruit set	Yield/ palm	Total	Fruit weight (g)	Flesh %	TSS %	Tannins %	Total	G. total
Score units	10	10	10	30	10	10	10	30	10	10	10	10	40	100
Samany	10	8.6	8.8	27.4	8.1	6.4	5.5	19.8	10.0	9.8	8.6	3.9	32.2	79.5
Barhee	9.8	10.0	9.5	29.3	9.4	10.0	8.7	28.1	5.1	10.0	10.0	10.0	35.1	92.5
Zaghloul	7.6	7.5	10.0	25.1	10.0	9.3	10.0	29.3	6.8	9.6	8.9	5.9	31.2	85.6

Economic evaluation (Feasibility)

Data present in Table (8) showed the value of return resulting from the cultivation of Samany, Zaghloul, and Barhee date palm under Aswan climatic conditions. The net return resulting from the difference between the marketing value of dates product and production cost. The results have been shown the cost of production for the three cultivars is equal, as each of them is equal in its horticultural or agricultural practices.

But, it differs in the rent value of the palm orchard, as it ranges between 6000 & 10000 Egyptian pound (L.E) according to the cultivated varieties. These values were 6000 L.E for Samany and Zaghloul date palm and 10000 L.E. for Barhee date palm.

The previous data indicated that the production cost for an area of feddan (85 palms) is about 16700 Egyptian pounds (L.E), that the production cost of palm about 196.5 L.E.

In addition, the total production cost, including the orchard rent about as follow (22700, 22700, and 26700 L.E/feddan) for Samany, Zaghloul, and Barhee date palm cultivars, respectively.

On other hand, the production marketing value is about (44750, 64480 & 252000 L.E./feddan), that one date marketing value about (526, 758 & 2964 L.E).

Table 8. Average cost of production of some soft date palm cultivars grown under Aswan conditions during 2019 and 2020 seasons. (. L.E/Fed)

Variable	Samany		Zaghloul		Barhee	
Production Inputs	L.E. /Fed	%	L.E. /Fed	%	L.E. /Fed	%
Fertilization	2400	14.4	2400	14.4	2400	14.4
Pest Control	1200	7.2	1200	7.2	1200	7.2
Labor Wages	11900	71.3	11900	71.3	11900	71.3
Machinery	600	3.6	600	3.6	600	3.6
Irrigation	600	3.6	600	3.6	600	3.6
Total Agric. practices	16700	100.0	16700	100.0	16700	100.0
Rent	6000	-	6000	-	10000	-
Total Cost	22700	-	22700	-	26700	-
Yield: Ton / Fed	8.95	-	16.12	-	14.00	-
Price of ton	5000	-	4000	-	18000	-
total revenue	44750	-	64480	-	252000	-
Net return	22050	-	41780	-	225300	-
Return from invested pound	0.97	-	1.84	-	8.44	-

Hence, the net return about (22050, 41780 & 225300 L.E/feddan), that about (259, 491 & 2650 L.E/one date) for Samany, Zaghloul, and Barhee date palm, respectively.

These results indicated that the return from invested one pound about (0.97, 1.84 & 8.44) due to grown Samany, Zaghloul and Barhee date palm under Aswan condition, respectively.

These findings might be due to suitable Aswan climatic conditions for cultivation and growth of Zaghloul, and Barhee palm date compared to Samany. Numerical evaluation confirmed the superiority of Barhee and Zaghloul on their vegetative growth, flowering, and fruit setting as well as early maturation and good date quality.

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Doi:10.21608/ajas.2021.108106.1068
Saeed, et al., 2021 http://ajas.journals.ekb.eg/

تقييم بعض أصناف نخيل البلح الرطبة النامية تحت ظروف محافظة أسوان

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الملخص:

أجريت هذه الدراسة خلال موسمي ٢٠١٩، ٢٠٢٠ لتقييم بعض أصناف نخيل البلح الرطبة بمحافظة أسوان. وقد تم التقييم لهذه الأصناف من خلال دراسة بعض صفات النمو الخضري ومكونات المحصول وخصائص الثمار الطبيعية والكيماوية وكذلك عمل تقييم رقمي للاصناف تحت الدراسة.

وقد أظهرت النتائج ، طبقاً للتقييم الرقمي انه يمكن ترتيب للأصناف تنازلياً كالتالي: البرحي (٩٢,٥) والزغلول (٨٥,٦) والسماني (٧٩,٥) علي التوالي.

وتظهر نتائج هذه الدراسة أفضلية نخيل البرحي والزغلول حيث تتفوق علي نخيل البلح السماني.

ومن نتائج الدراسة نوصي بأهمية إكثار وزراعة أصناف البرحي وذلك لإنتاج محصول عال ذو خصائص ثمرية جيدة فضلاً عن تفوق سعره والطلب علي تصديره.