

(Phoenix dactylifera L)
 (Principal Component Analysis)

	2	2	1
59	25	9	21 34
			29 34
	%(0.98)	(4)	(3)
	(6)	(5)	%(0.97) (11) (16)
(23)		(21)	%(0.98) %(0.97)
)			25.75
			%(32.92)
			%(51.33)

Phoenix dactylifera L.

(1992) (cultivar)

(2005)

.(Offshoots)

Genetic Mutations

2012/8/8

2012/5/21

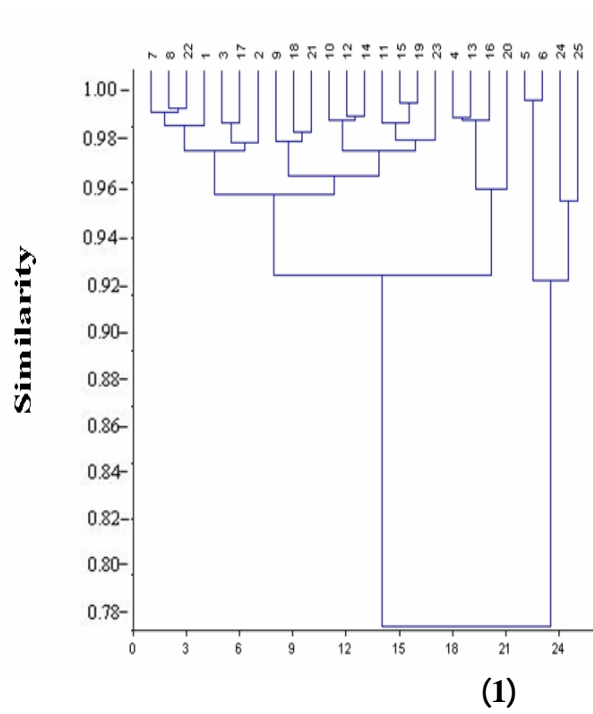
Clone
) (2009)
 (1998)
 (17) (2001) (26)
 (7) 41 :
 (1998) 17
)
 (2003) (/)
 (1986)
 -) .(
 (Soliman,2006) (1998)
)
 (3 29.64) ()
 (3 26.13) (2001)
 .(Tafti&Fooladi ,2005) :
 (2005)
 (2.62 3.12 3.36)
 . (2.67 1.63 1.47)
 :
 2011-2010 (Sakrket al.,2010)
 34
 Hayauy
 (1987)
 18-9 /
 .()

()
 (29)
 (25) (9) (21)
 (1972 ()
 Vernier ()
 10) 1.5-1
 .(1993
 .() : -6
 : -7
 .() A.O.AC,)
 : -8 .(1980,
 : () -1
 10
 : () -2
 :
 :
 15
 (SPSS v.10)
 : () -3
 1= 0=
 Principal Comonent Analysis 10
 Cluster Analysis
 .(2005) .()
 : () -4
 :
 : -1 10
 (1)

(8.41) (0.903-0.768)
 : (3) -0.747 (0.777-0.799)
 .(0.903) (0.698)
 (2)
 (25.74)
) () -)
 .() - -
 (0.270) ()
 .(0.735) (10.15)

(1)

0.747		0.799	0.903	1
0.744		0.790	0.894	2
0.735	1	0.790	0.889	3
0.728		0.786	0.863	4
0.701		0.782	861	5
0.698		0.777	1 0.838	6
			2 0.837	7
			0.825	8
			2 0.820	9
			0.818	10
			0.817	11
			0.815	12
			0.811	13
			0.808	14
			0.807	15
			0.801	16
			0.768	17



(1)

(32 31 30 17)

%(0.98) (4 3)

%(0.96) (29 25)

%(0.96) (22 34)

(2)

(24 2) (27 17)

.(2+1)

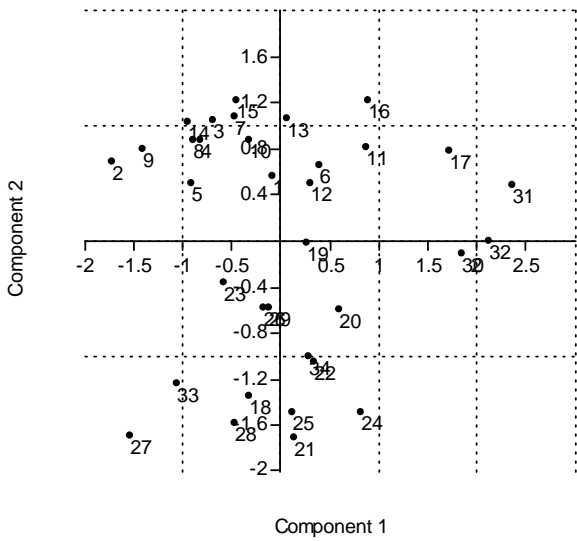
(27) .(31)

(3) (17 31)

(3+1)

.(2) (32)

.(30 17)(4 3)



(2)

(2+1)

.(

%(8.41 10.15

.(2)

(2011)

(2001)

-4)

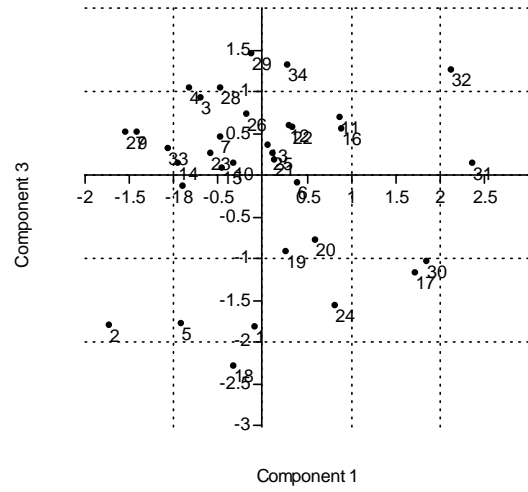
(2008)

(1986) °75 38

.3/1 7/1 (1971)

3/1 16

(1993)



(3) (3+1)

(1986)

152 .48.5

(-4)

450 (Dransfild,1985)

377 395.5

(1986) (450-310)

(-4) (1993)

(34) (-4)

			2	1	2	1						
0	0	1	0	50	70	60	3	0	1	0	0.59	1
1	1	1	0	60	50	40	2	1	1	0	0.56	2
0	0	0	0	50	0	70	4	4	3	1	1.00	3
1	0	0	0	50	0	55	4	0	3	1	0.89	4
0	0	0	30	70	55	50	0	0	1	0	0.93	5
0	1	1	0	40	0	60	1	0	0	1	1.22	6
0	0	1	0	45	0	20	0	9	3	0	1.11	7
0	0	1	30	50	0	40	0	4	2	1	1.01	8
1	1	0	40	50	0	40	5	3	1	1	0.80	9
1	1	0	0	60	0	50	3	10	3	0	1.12	10
1	0	1	0	40	0	70	1	3	1	2	1.03	11
1	1	0	0	60	0	60	2	14	3	1	1.00	12
1	0	0	0	50	0	60	2	0	0	0	1.32	13
1	1	0	0	50	0	80	6	0	1	0	1.01	14
0	1	0	0	70	0	60	7	12	0	2	1.67	15
1	1	0	0	50	0	70	1	0	3	0	1.15	16
0	1	0	0	40	70	50	0	8	0	1	1.17	17
1	0	1	0	70	70	80	3	0	1	1	0.99	18
0	1	1	40	60	40	60	0	0	1	0	0.67	19
0	1	1	0	60	40	60	5	0	1	1	1.01	20
1	1	0	50	60	0	80	5	6	1	1	0.70	21
0	0	1	40	60	0	60	4	6	1	1	0.62	22
0	1	0	0	50	0	60	4	4	0	1	1.26	23
0	1	0	0	50	70	40	3	6	1	0	0.79	24
0	1	0	40	50	50	40	3	6	0	1	1.31	25
0	0	1	0	50	0	60	10	6	1	0	1.34	26
1	0	1	30	40	0	70	0	1	1	1	1.15	27
1	0	0	0	45	0	80	0	1	1	0	1.02	28
0	1	0	50	60	0	50	2	6	0	1	1.72	29
1	1	1	50	70	50	20	0	0	2	0	0.81	30

			2	1	2	1						
0	1	1	30	60	0	20	4	2	3	0	0.97	31
1	0	1	30	60	0	60	7	0	3	0	0.83	32
0	1	1	0	60	0	60	3	0	3	0	0.64	33
1	1	0	40	50	0	60	14	10	0	1	1.06	34

(34)

(-4)

3	2	1	0	
4/5 -31	3/30-24	3/23-19		

: -2

() (5)

(2001)

(0.908-0.972)

((1986) 0.983 3

()

(0.513)

(1989)

%32.92 (6)

%15.13 %19.20

)

(7)

.(0.781)

(0.823)

(

(0.756)

.(0.711)
(0.891)

.(0.683)

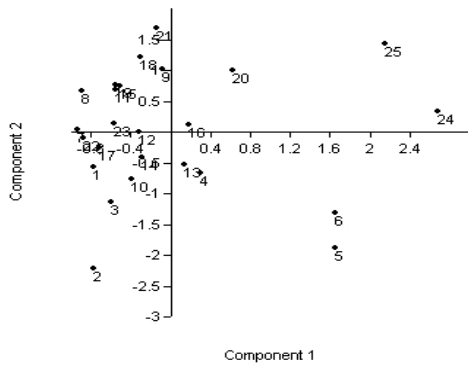
(0.718)

(5)

0.811	0.886	0.951	1
0.818	0.874	0.935	2
0.808	0.869	0.928	3
0.772	0.844	0.903	4
0.513	0.893	0.983	5
	0.837	0.914	6
		0.972	7
		0.931	8
		0.929	9
		0.908	10

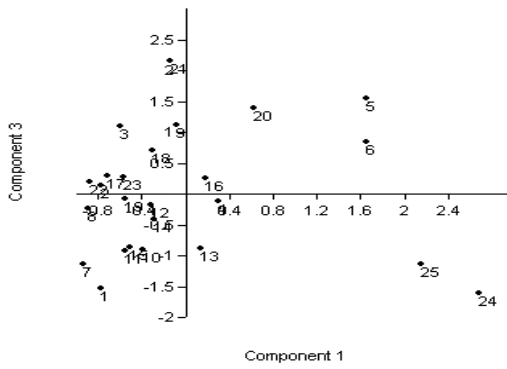
(6)

15.13:	19.20 :	32.92:
(0.352)		(0.837)
(0.239)	(0.850)	(0.594)
		(0.789)
(0.581)	(0.724)	(0.787)
(0.442-)		
		(0.823)
		(0.698)
		(0.799)



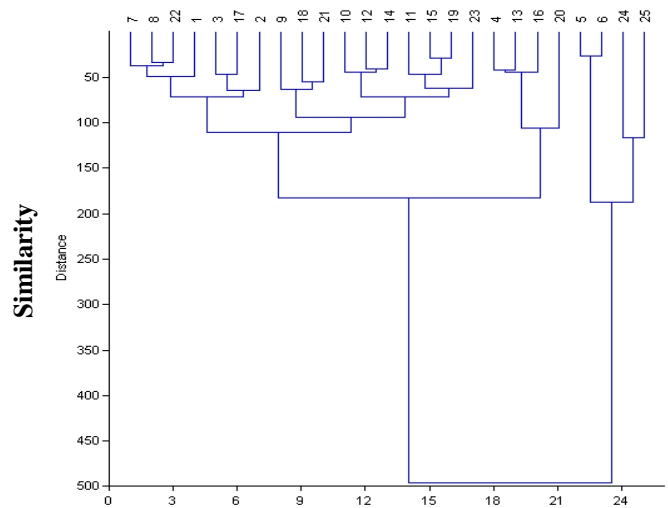
(4)
 (25 24 6 5)
 .%(0.98) (6) (5)
 (16 13 4)
 14) (22 8)
 (19 15) (5 6) (12
 .%(0.98)

(5)
 (2+1)



(5)
 (2)
 (25)
 (6) .(3) (24)
 (5) (1)
 .(20) (7)
 (6)
 0.823
 .0.756

(6)
 (3+1)



(4)

(-8)

(25)

(-8)

-	-	()	()	()						
12	18	24	13	24	21	27	33	46.49	35	1
12	18	24	13	24	21	27	33	46.49	35	2
8	12	18	22	26	7	9	17	47.07	32	3
20	17	31	30	27	30	31	40	66.56	45	4
18	10	34	25	17	50	31	14	78.3	54	5
18	10	34	25	17	50	31	14	78.3	54	6
11	15	23	27	32	18	21	25	41.71	34	7
13	13	20	21	22	18	19	21	62.32	32	8
21	19	40	46	45	22	25	27	75.26	45	9
22	22	31	32	33	36	33	36	40.01	39	10
15	13	50	32	40	27	23	18	56.35	42	11
16	16	26	32	34	18	33	36	60.37	39	12
20	21	29	32	31	27	30	34	62.09	38	13
17	18	25	33	33	17	23	27	53.13	42	14
22	27	41	47	39	20	27	32	57.15	40	15
26	17	24	39	23	23	38	21	62.69	44	16
9	15	15	21	28	9	11	17	67.4	33	17
17	17	25	30	27	21	19	17	92.92	34	18
16	17	42	39	37	16	19	22	62.35	37	19
22	28	49	39	45	26	24	30	93.24	46	20
17	13	27	22	33	15	20	18	94.57	33	21
14	15	14	27	27	11	17	19	66.43	27	22
29	27	35	36	35	40	36	32	57.23	42	23
17	23	49	34	50	37	22	44	87.55	52	24
20	27	52	35	47	32	25	40	73.14	42	25

(25)						(-8)				
							-	-	-	
64	1	2	6	35.24	89.44	31	11	15	15	1
131	1	3	2	35.24	89.44	31	11	15	15	2
121	1	2	3	67.95	118.24	52	2	1	5	3
97	1	1	5	93.09	296.20	63	12	11	23	4
140	0	1	7	151.68	564.5	82	32	13	4	5
115	1	2	2	151.68	564.5	82	32	13	14	6
61	0	2	4	36.85	55.19	48	7	10	10	7
56	1	3	2	56.14	60.80	59	5	6	8	8
80	1	1	5	126.7	211.3	61	5	4	8	9
88	0	1	5	60.80	163.48	44	8	11	14	10
51	0	1	4	69.31	127.7	42	11	8	5	11
77	1	2	3	90.03	172.96	41	6	17	20	12
85	0	1	6	67.35	269.27	63	7	10	13	13
87	0	1	11	63.34	183.58	57	6	6	9	14
63	1	3	1	58.18	135.14	67	2	5	5	15
81	1	1	6	102.89	271.47	72	7	12	6	16
88	0	2	6	50.0	98.9	55	1	2	2	17
61	0	1	12	93	172.8	71	4	2	5	18
72	0	3	6	59.74	125.62	82	5	3	5	19
91	0	1	14	142.6	350.4	87	6	2	2	20
77	1	1	8	125.85	195.7	104	2	3	5	21
81	0	1	6	51.25	66.00	44	3	3	4	22
95	1	1	4	54.50	121.15	97	8	7	5	23
66	0	1	7	166.45	774.42	106	13	5	21	24
48	1	3	5	175.42	662.31	118	8	8	13	25

(0.931 0.954)

:

-3

(9)

(0.822 0.886)

)

(

طول الثمرة	1								
قطر الثمرة	.504(*)								
حجم الثمرة	.576(**)	.633(**)							
طول البذرة	.804(**)	.465(*)	0.309						
قطر البذرة	0.107	0.183	-0.007	.471(*)					
وزن البذرة	.640(**)	.926(**)	.650(**)	.519(**)	-0.009				
وزن البذرة	0.364	.415(*)	0.027	.667(**)	.819(**)	0.273			
حجم البذرة	0.02	0.199	0.069	0.107	-0.175	0.34	-0.036		
وزن الثمرة	.662(**)	.939(**)	.623(**)	.587(**)	0.101	.991(**)	0.395	0.319	

* Correlation is significant at the 0.05 level (2-tailed).
 ** Correlation is significant at the 0.01 level (2-tailed).

(7)-

(22)

(16) (9) % (0.96)

(11)

(10)

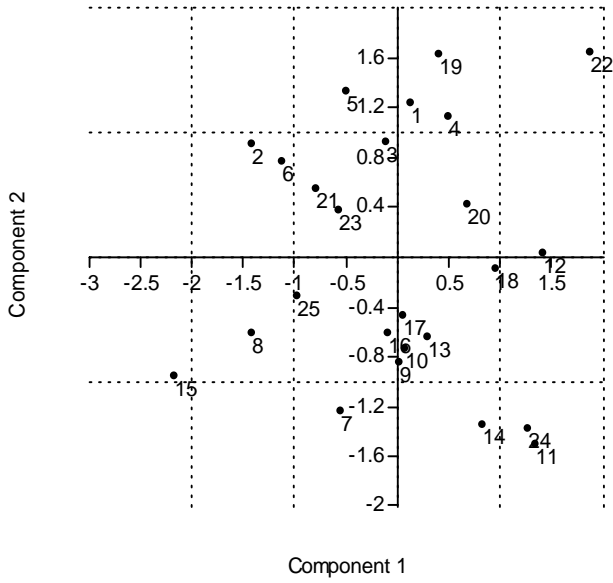
51.80
 :
 21.84
 (0.759 0.863)
 11.12
 (11)
 (0.007-)
 (0.0090-)
 .(0.175-)
 .(0.036-)

(9)

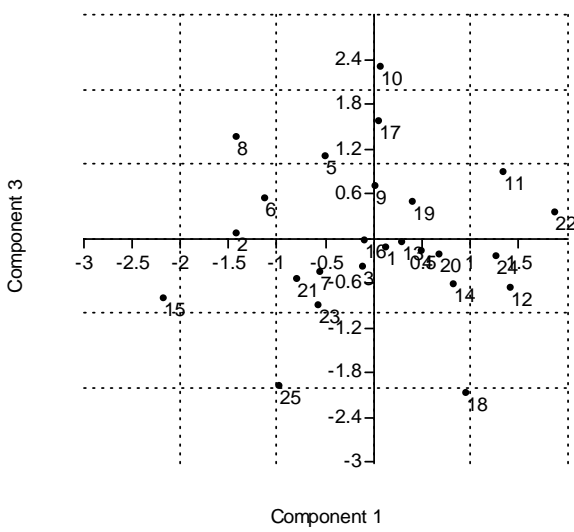
0.758	0.886	0.954
0.741	0.850	0.953
0.735	0.822	0.931

(10)

11.12	21.84	51.80
0.821	0.863 0.759	0.794 0.889 0.675 0.773 0.912 0.946



(8)
(2+1)

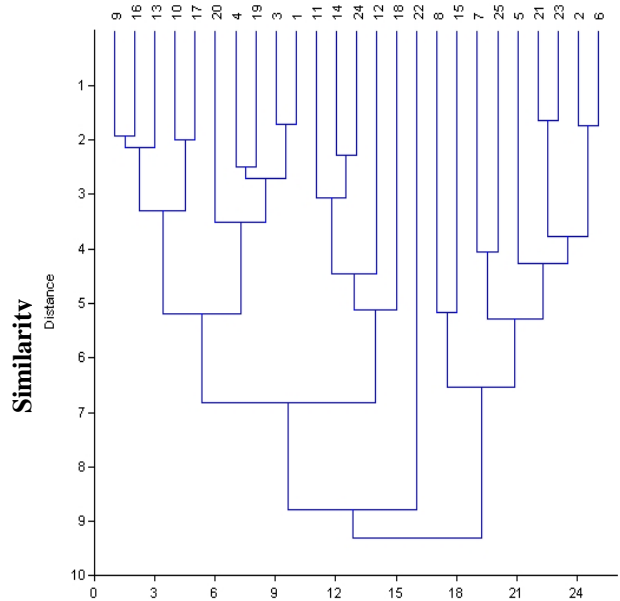


(9)
(3+1)

(12)

(15)

(6) (2)
%(0.96)
(22)
17 20 4 19 3 1 11 14 24 12 18)
. (9 16 13 10
(8)
(22) (8)
24 11) (8) (2) (11)
. (4 1) (6 2) (14
(9)
(8) (18) (15) (11)
. (2x1)



(7)

...

(Sakr,2010((37.15)
 (24.95) (2)
 (2001 ((29) (24.34)
 (17) 34 33 26)
 (25 27 25 29
 (Mohamed ,2011)
 0.89 25.31 3 4.16)
 (7.95 3 0.89 1.35 9.24

()

) (Hopkins ,2008)
 .(2008

(25) (12)

			3			3				
21.13	29.86	7.017	0.513	0.850	6.167	3.76	8.873	19.63	1	1
18.05	24.95	4.467	0.513	0.433	4.033	1.90	7.540	16.25	2	2
20.36	29.25	6.310	0.534	0.975	5.400	3.90	9.750	19.31	3	3
21.64	31.42	7.367	0.363	0.967	6.400	4.00	9.980	20.15	4	4
19.97	28.88	6.233	0.363	0.733	5.500	2.83	7.597	16.65	5	5
18.05	26.38	4.933	0.453	0.600	4.333	2.36	7.070	16.78	7	6
16.38	29.42	3.883	0.497	0.767	3.117	2.06	9.303	20.56	10	7
15.19	27.45	3.350	0.557	0.617	2.733	2.13	7.390	16.11	12	8
17.35	31.90	5.133	0.520	0.683	4.450	3.10	8.443	20.51	13	9

			3			3				
16.91	33.25	5.567	0.473	0.567	5.000	3.10	6.720	19.09	14	10
19.27	37.15	5.850	0.343	0.833	5.017	3.73	8.513	24.18	15	11
21.49	34.66	7.750	0.350	1.117	6.633	4.90	10.227	24.37	17	12
18.57	31.93	5.583	0.433	1.033	4.550	3.70	9.003	21.84	18	13
18.46	33.87	6.000	0.497	1.100	4.900	2.70	9.337	24.39	19	14
13.77	23.25	2.183	0.403	0.667	1.517	1.10	9.020	16.80	20	15
18.35	30.98	4.833	0.383	1.100	3.733	3.10	9.500	20.35	21	16
17.35	32.64	5.817	0.510	0.683	5.133	3.33	8.527	18.94	24	17
20.64	31.98	7.953	0.670	1.350	6.603	1.10	9.687	25.02	25	18
22.01	30.80	7.667	0.667	0.700	6.967	4.16	7.747	19.67	26	19
20.25	31.98	7.473	0.893	0.910	6.563	4.10	8.840	22.12	27	20
18.06	26.44	5.463	0.527	0.617	4.847	3.10	8.130	19.09	28	21
24.34	35.75	10.210	0.563	0.970	9.240	3.93	8.210	23.20	29	22
18.85	27.27	5.200	0.517	0.817	4.383	3.16	8.810	19.89	30	23
18.84	35.50	6.633	0.473	0.867	5.76	2.90	8.743	25.31	33	24
17.77	26.29	4.267	0.393	1.283	2.983	1.06	10.897	19.67	34	25
1.522	2.471	1.050	0.230	0.300	1.035	0.463	0.863	2.130		RLSD

-4

(25 24 6 5) :

(8) (7) (13)

.%(0.97)

(20) (4) %(14.55)

%(13.55)

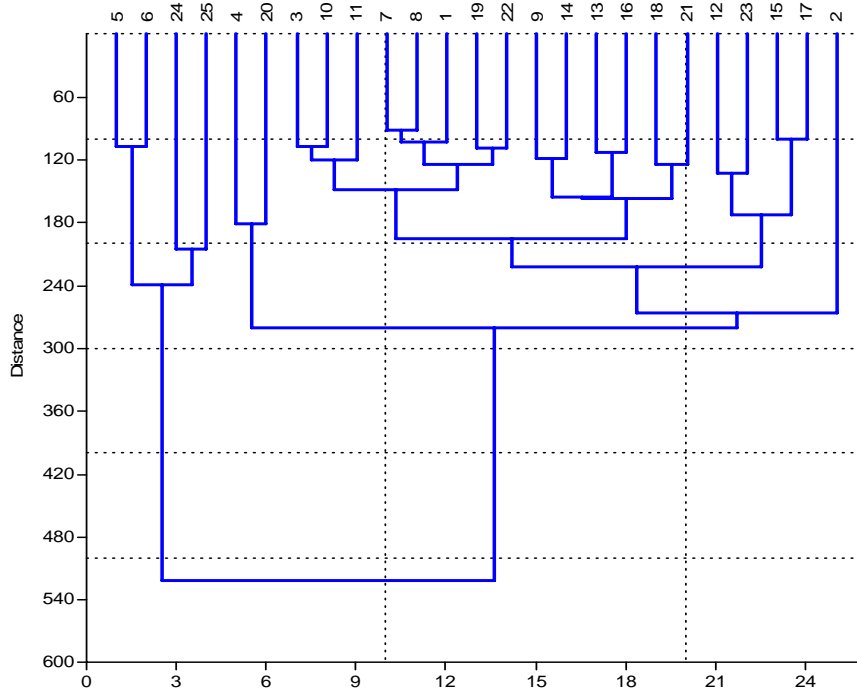
(10) .%(12.62)

%(0.97) (15) (17)

.%(0.94) (4) (20) ()

(13)

12.62	13.55	14.55
0.602	0.643	0.771
0.605	0.579	0.767
0.646	0.696	0.639
0.542	0.652	0.602
0.527	0.827	0.723
	0.824	0.634
		0.661
		0.739



(10)

(13) (12 8 4) .
 .(24 22 20 19 18 12 4 3 2)
 (1989)
 (1987)
 .25-24:(1)8
 (1993) . 156 – 137 : 6
 L (2008)
Phoenix dactylifera
 50-17 ()
 (2003) 217-199
Phoenix
dactylifera L. (2001)
 : - - 137 .6-1:1 1
 (2009) (1988)
 (Phoenix dactylifera L) :
 . 1076-1057 26-24 . 33-21
 (2003)
 (2001) SPSS
 . 170-159
 .18 – 3 :13 (1972)
 (1986)
 .1085 :
 (1998)
 . 105
 (2005) -169: 1998/2/16-18
 .163

SPSS	- 88 : 4	
.813-756		.110
(1998)		(2005)
	. 55-31	
- 19		
.180-1998:170/2/18		(2003)
(1971)		
. 84-50	.9 - 1 : 1	(2006)
(1998)	-	
.162-1998:147/2/18-16		(2005)

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A Morphological Study of Date Palm Seeds Strains (*Phoenix dactylifera* L.) Grown in Basra of Region Using Principal Component Analysis

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ABSTRACT

The present study was carried of date palm seeded strains, grown in Basrah of region to investigate certain the characteristic of them. The study included 59 characteristic, included 29 characteristic for the vegetation of growth for 34 strains, 21 characteristic for the flowering of growth, 9 characteristic for the fruits of 25 strains selected, out of 34 strain using principal component analysis and cluster analysis, to investigate of similarity and different between study strains. The result indicated of cluster analysis was difference between strains and divided into two groups in the vegetation of characteristic, has been recoded strains (3) convergence more with strains (4) the degree (0.98)% and strains (16) with (11) the degree (0.97)%. Showed cluster analysis was also convergence strains (5) with (6) the degree (0.98)%, for the flowering of characteristic, while fruits of characteristic the recoded of strains (21) convergence with (23) the degree (0.97)%, divided of strains to groups and under groups for strain each. The principal component analysis showed that, morphological characters for leaves and fruits could be used for identification and description of date palm cultivars. Those traits included leaf length, leaf base width, spines length, percentage of pinnae base distance were considered the most important vegetative characters and represented 25.75% from the variance between cultivars. From flower characters, length and weight of spathe, length of strand, and mean number of flowers on strand represented about 32.92% from the variance among cultivars. Fruit properties such as weight and length of fruit represented 51.33% from the variance.

Keywords: Date Palm, Seeded Strains, Morphological Characterization, Principal Component Analysis.

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