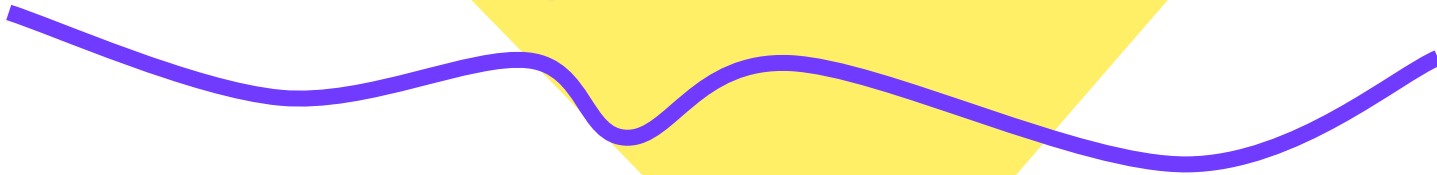




# DATEPALAM

Dr. P. K. Yadav  
Professor and Head

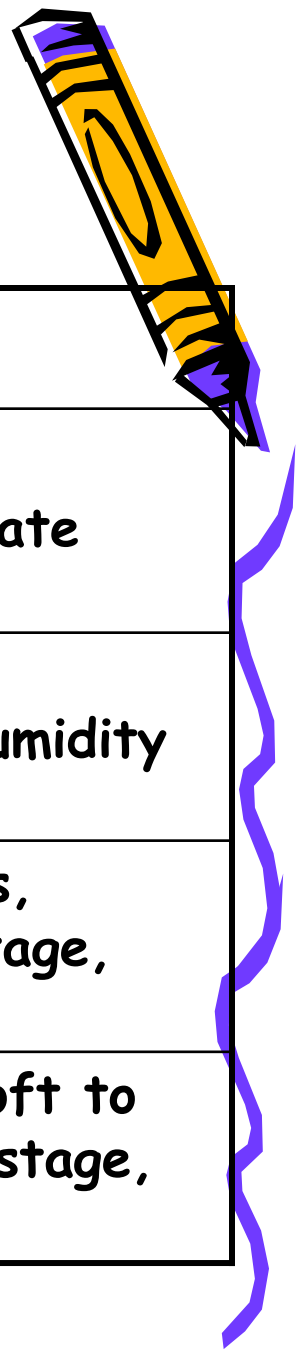


# Importance of crop

- Date palm is a arid irrigated crop.
- It is very hardy and salinity tolerant.
- Harsh conditions and rain free season are suitable
- Demand and consumption of date palm in India is much more than production.
- Cultivation area :Thar Desert of Rajasthan and Kacchch area of Gujarat.
  - In Western Rajasthan, Bikaner, Jaisalmer and Barmer districts



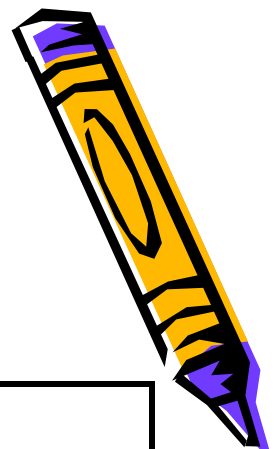
# Characteristics of date palm cultivars



Cultivars	Characteristics
Halawy	Berry colour - light orange yellow shade Sweet at doka stage (hard ripe), Soft date cultivar, Fresh fruits of dang stage
Medjool	Soft date cultivar, excellent Chuhhara, relatively tolerant to rainfall and high humidity
Barhee	Soft date cultivar, suitable as raw dates, golden yellow at doka, max. pulp percentage, heavy fruit yield
Shamran	Soft dates and synonymous to Sayar, Soft to semi-dry date cultivar, slightly at doka stage, early ripening and prolific bearer



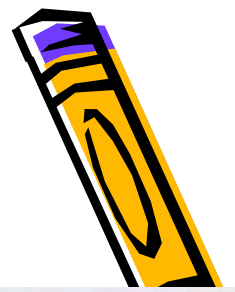
# Characteristics of date palm cultivars



Cultivars	Characteristics
Zahidi	Semi dry cultivar, suitable for pind khajoor, less tolerant to rains, mid season
Khalas	Soft date cultivar, slightly astringent at doka
Zagloul	oblong oblique and asymmetrical in shape, dull reddish in colour, astringent at doka stage
Khadrawy	High astringency at doka stage, not suitable as fresh, suitable for processing (Chuhara and Pind Khajoor), palm are smaller



# Fruiting of different cultivars



*Date Palm Cultivar Medjool*





*Date Palm Cultivar Zahidi*



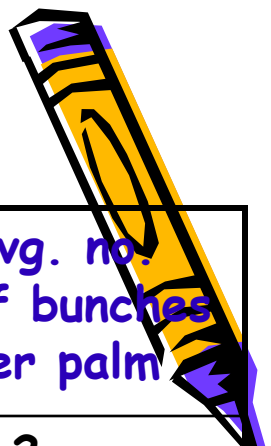
*Date Palm Cultivar Barhee*



# Fruits of Halawy and Khuneizi



## A. Vegetative characteristics of date palm cvs. at Bikaner



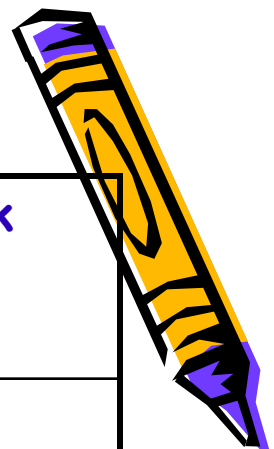
Cultivars	No. of Scars per palm	No. of leaves per palm	Leaf length (m)	Length of mid rib (cm)	No. of thorny leaflets	Avg. no. of bunches per palm
Medjool	97.3	47.0	2.7	38.3	18.7	5.2
Halawy	121.7	37.7	3.03	45.0	22.7	7.7
Khadrawy	29.7	30.0	2.8	63.3	16.0	5.2
Shamran	96.0	30.7	2.7	65.0	21.3	3.9
Zahidi	91.7	27.0	2.3	46.7	25.3	3.9
Khalas	54.0	27.0	2.5	45.0	18.7	4.9
Zagloul	99.0	28.3	2.4	43.4	13.3	4.0
Sewi	140.7	29.3	2.4	46.7	19.3	3.8
Barhee	29.0	22.7	2.6	17.3	25.3	7.0
Khuneizi	4.7	0.9	1.2	26.7	10.0	-

Chandra and Chaudhary (1990)





## A. Vegetative characteristics of date palm cvs. at Bikaner



Cultivars	Height of palm (mts)	Spread of palm (mts)		Trunk (mts)
		E to W	N to S	
Medjool	2.2	5.0	4.9	1.6
Halawy	<b>2.5</b>	<b>5.2</b>	<b>5.4</b>	<b>2.0</b>
Khadrawy	1.2	4.1	4.3	1.7
Shamran	1.6	4.7	4.8	1.7
Zahidi	0.9	3.4	3.4	1.3
Khalas	1.2	3.4	4.0	1.0
Zagloul	1.5	3.9	3.7	1.22
Sewi	2.0	4.6	4.5	1.5
Barhee	0.8	4.7	5.0	1.2



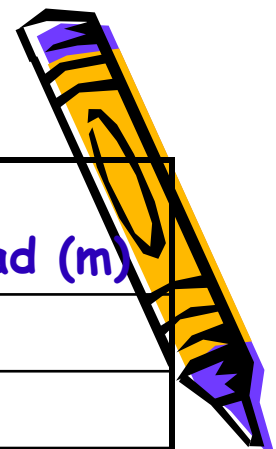
Chandra et al. (1990)

## A. Vegetative characteristics of date palm cvs. at Bikaner

Cultivar	Height of palm (m)	Growth of trunk	No. Of leaves/palm	Palm spread (m)
Medjool	6.68	1.24	58	5.60
Halawy	5.47	1.50	56	5.40
Khadrawy	3.10	1.57	54	5.15
Shamran	4.30	1.54	57	5.55
Zahidi	3.55	1.62	53	5.45
Khalas	3.52	1.43	51	6.25
Zagloul	3.87	1.43	57	6.34
Sewi	3.78	1.39	52	5.40
Barhee	3.53	1.95	68	6.65
Khuneizi	2.36	1.70	46	6.35
Nagal	2.16	1.95	45	5.45



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of Date Palm Research Centre (SKRAU),  
Bikaner



## A. Vegetative characteristics of date palm cvs. at Bikaner

Cultivar	Height of palm (m)		Growth of trunk (m)		No. of leaves/palm	
	2008	2009	2008	2009	2008	2009
Medjool	7.10	7.40	1.34	1.40	58	60
Halawy	5.70	5.95	1.68	1.73	55	57
Khadrawy	3.38	3.50	1.72	1.78	56	58
Shamran	4.65	4.80	1.65	1.70	54	56
Zahidi	3.85	4.00	1.76	1.81	55	56
Khalas	3.85	4.00	1.77	1.82	50	51
Zagloul	4.10	4.30	1.54	1.60	59	60
Sewi	4.00	4.35	1.50	1.55	53	55
Barhee	3.81	4.00	1.77	1.85	72	74
Khuneizi	2.42	2.80	2.07	2.15	42	44
Najaf	2.62	2.65	1.86	1.92	42	44

AICRP on Arid Zone Fruits Report (2008-09) of  
Date Palm Research Centre (SKRAU), Bikaner

## A. Vegetative characteristics of date palm cvs. at Abohar

Characteristics	Khadrawy	Medjool	Zahidi	Halawy	Barhee
Height of palm (cm)	827.8	1060.4	885.2	889.6	795.8
Palm spread (cm)	720.4	688.6	670.4	770.2	759.2
Trunk Girth (cm)	143.4	134.2	145.2	147.4	157.6
No. of leaves/ palm	16.8	20.6	19.4	15.5	16.4
Length of leaf (cm)	390.6	378.8	404.6	438.6	446.4
No. of thorns/ leaf	12.2	18.6	18.4	15.2	18.2

AICRP on Arid Zone Fruits  
Report (2006-07) of Abohar



## A. Vegetative characteristics of date palm cvs. at Abohar

Characteristics	Khadrawy	Medjool	Zahidi	Halawy	Barhee
Height of palm (cm)	835.40	1069.70	894.59	895.00	804.90
Palm spread (cm)	720.90	688.20	669.40	771.30	760.20
Trunk Girth (cm)	144.60	136.20	146.70	148.80	159.00
No. of leaves/ palm	16.80	20.00	18.70	15.70	16.70
Length of leaf (cm)	390.80	380.20	400.40	437.70	446.20
No. of thorns/ leaf	11.90	17.80	18.30	15.30	17.90



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Report (2008-09) of Abohar



## A. Vegetative characteristics of date palm cvs. at Mundra

Cultivar	Plant height (m)		Stem girth (m)		No. of leaves		Survival per cent	
	2008	2009	2008	2009	2008	2009	2008	2009
Barhee	1.19	1.23	0.34	0.45	2.20	6.00	75.00	62.50
Halawy	<b>1.40</b>	<b>1.50</b>	0.35	0.53	3.88	6.63	<b>87.50</b>	<b>87.50</b>
Khuneizi	1.26	1.33	<b>0.39</b>	0.53	3.25	5.88	62.50	62.50
Khalas	1.08	1.23	<b>0.39</b>	<b>3.31</b>	3.88	7.63	<b>87.50</b>	<b>87.50</b>
Sel-3	1.39	1.39	0.36	0.55	<b>4.25</b>	<b>8.00</b>	<b>87.50</b>	<b>87.50</b>

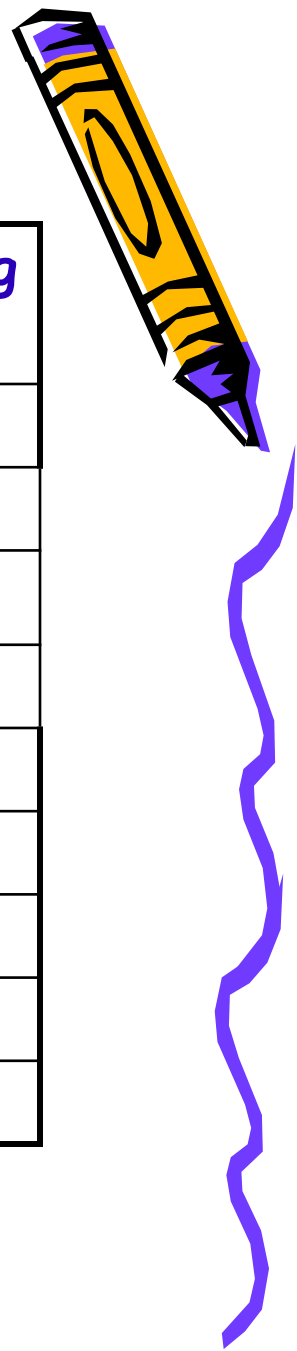


AICRP on Arid Zone Fruits Report (2008-09)  
of Mundra

**B. Flowering characteristics of date palm cvs. at Bikaner:**

Cultivars	Duration of spathe emergence (Days)	Duration of flowering (Days)
Halawy	48	27
Medjool	38	34
Khadrawy	21	36
Shamran	45	24
Zahidi	<b>53</b>	45
Khalas	45	25
Zagloul	32	13
Barhee	46	<b>55</b>
Khuneizi	49	44

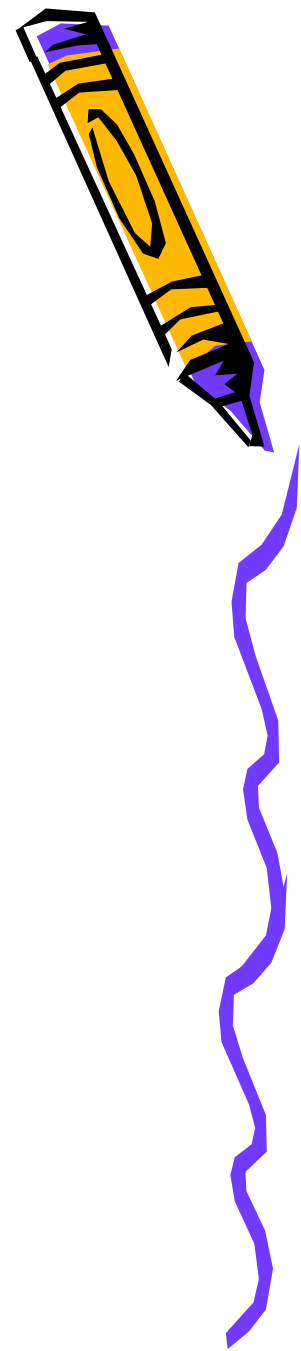
Chandra *et al.* (1994)



## C. Bunch characteristics of date palm cvs. at Bikaner

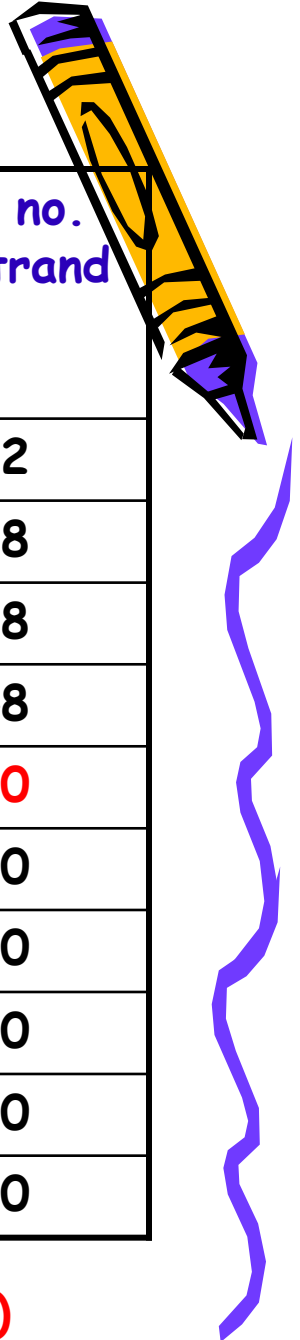
Cultivars	Avg. no. of bunches per palm
Medjool	5.2
Halawy	7.7
Khadrawy	5.2
Shamran	3.9
Zahidi	3.9
Khalas	4.9
Zagloul	4.0
Sewi	3.8
Barhee	7.0
Khumaizi	-

Chandra and Chaudhary (1990)

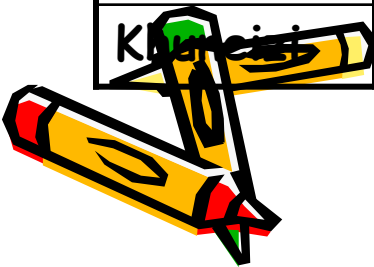




## Bunch characteristics of date palm cvs. at Bikaner



Cultivars	Length of bunch (cm)	Length of bunch stalk (cm)	No. of strands per bunch	No. of berries per strand	Avg. no. of strand
Medjool	48.34	52.98	63.60	40.00	15.22
Halawy	58.80	44.36	71.20	33.00	24.18
Khadrawy	48.34	41.34	47.40	29.20	21.98
Zahidi	62.48	52.66	41.00	38.40	31.48
Shamran	75.40	57.50	54.00	41.60	27.50
Barhee	73.30	39.70	55.80	55.80	25.10
Khalas	50.90	42.09	42.70	42.70	23.10
Sewi	61.50	46.10	29.30	30.50	20.50
Nagal	57.90	32.90	35.00	21.50	11.50
Khaneisi	36.50	31.70	35.00	21.00	08.60

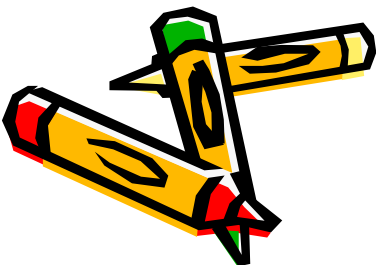


Chandra and Chaudhary (1992)

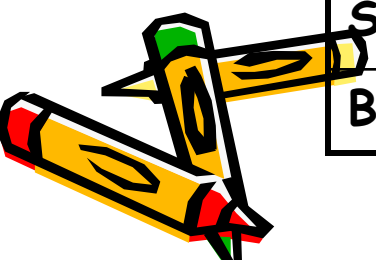
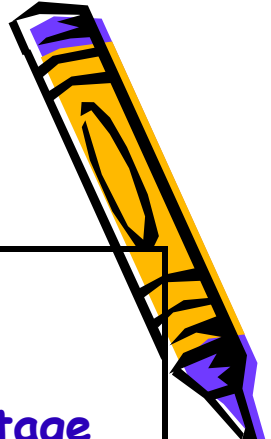
## Bunch characteristics of date palm cvs. at Abohar

Characteristics	Khadrawy	Medjool	Zahidi	Halawy	Barhee
Av. No. of strand/ bunch	50.4	55.2	51.4	56.6	8.8
Av. length of strand/ bunch	37.2	58.2	45.4	43.2	58.6
Av. Length of bunch	112.8	164.2	129.3	126.2	182.6
Av. No. of bunch/ palm	9.2	11.6	10.4	12.2	9.8

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## D. Heat Summation Units of date palm cvs. At Bikaner



Cultivars	Heat Summation Units (base 10°C)	
	Colour turning stage	Pind stage
Medjool	2648	3650
Halawy	1951	3101
Khadrawy	2213	3342
Shamran	2111	3567
Zahidi	2322	3479
Khalas	2357	3281
Zagloul	2227	3631
Sewi	2244	3281
Barhee	2323	Not attained

Chandra *et al.* (1990 )

## E. Physical characteristics of date palm cvs. at Bikaner



Cultivars	Average fruit weight (gm)	Fruit size (cm X cm)	Pulp thickness (cm)
Halawy	9.2	3.56 X 2.15	0.69
Medjool	10.8	3.65 X 2.65	0.82
Khadrawy	6.7	2.95 X 2.07	0.55
Shamran	6.3	3.34 X 1.67	0.61
Zahidi	11.0	3.61 x 2.45	0.77
Khalas	11.0	3.74 X 2.39	0.88
Zagloul	9.4	3.90 X 2.20	0.69
Barhee	8.6	3.03 x 2.28	0.77
Khuneizi	10.0	3.39 X 2.26	0.85

Chandra *et al.* (1994)

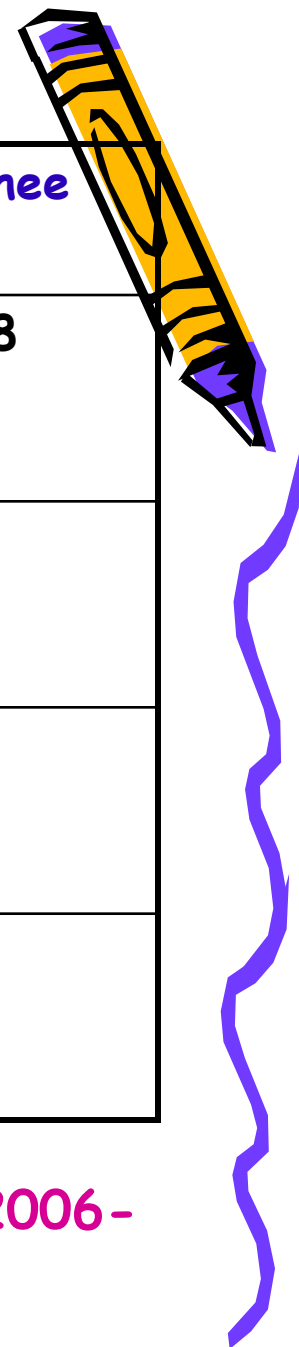


## E. Physical characteristics of date palm cvs. at Abohar

Characteristics	Khadrawy	Medjool	Zahidi	Halawy	Barhee
Av. Fruit weight (g)	11.4	19.6	13.8	14.4	12.8
Av. Seed weight (g)	1.3	2.4	1.3	1.5	1.6
Av. Fruit length (cm)	3.3	4.6	3.5	3.7	2.9
Av. Fruit breadth (cm)	2.2	3.3	2.2	2.2	2.4



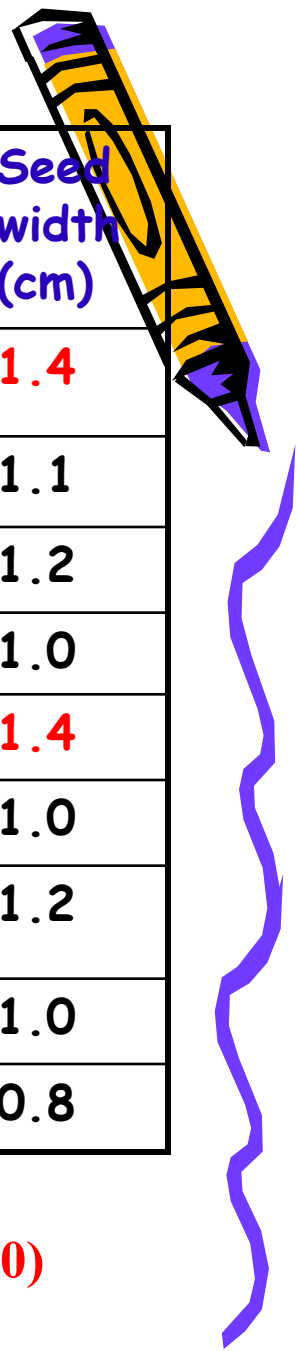
AICRP on Arid Zone Fruits Report (2006-07) at Abohar



## E. Physical characteristics of date palm cvs. at Bikaner

Cultivars at Doka stage	Berry weight (g)	Berry length (cm)	Berry width (cm)	Pulp thickness (mm)	Seed weight (g)	Seed length (cm)	Seed width (cm)
Medjool	16.2	3.9	2.9	8.5	1.7	2.5	1.4
Halawy	8.8	3.8	2.1	5.8	1.4	2.6	1.1
Khadrawy	8.8	3.2	2.2	7.5	1.2	2.2	1.2
Shamran	6.5	3.6	1.8	5.2	1.0	2.4	1.0
Zahidi	10.4	3.2	2.0	6.8	1.4	2.2	1.4
Khalas	8.0	2.1	2.1	6.9	1.0	2.3	1.0
Zagloul	10.4	3.8	6.4	6.4	2.0	2.6	1.2
Sewi	4.8	2.6	5.1	5.1	0.9	1.7	1.0
Barhee	5.4	2.8	2.4	6.2	0.8	1.9	0.8

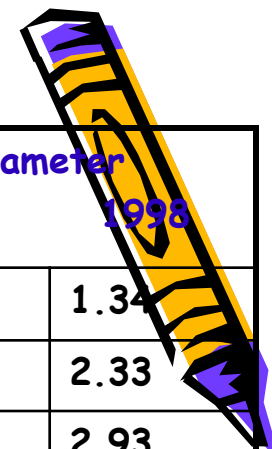
Chandra *et al.* (1990)



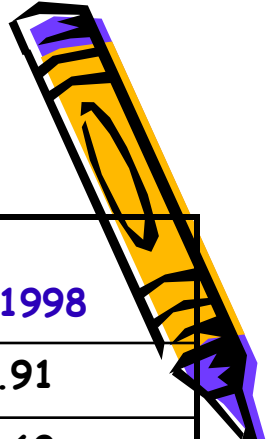
## E. Physical characteristics of date palm cvs. at Egypt

Cultivars	Stage of maturity	Date of picking	Fresh weight		Fruit length		Fruit diameter	
			1997	1998	1997	1998	1997	1998
Zagloul	Hababouk	June, 15	0.83	1.71	1.31	1.79	1.01	1.34
	Kimmri	July, 15	7.97	12.86	3.17	3.85	2.02	2.33
	Khalal	Oct., 15	25.93	25.15	5.92	5.83	2.77	2.93
Samany	Hababouk	June, 15	0.60	0.81	1.29	1.41	0.98	1.09
	Kimmri	July, 15	8.09	7.48	3.27	3.19	2.33	2.22
	Khalal	Oct., 15	32.86	30.65	5.62	5.55	3.47	3.32
Bent Aisha	Hababouk	June, 15	0.72	0.98	1.39	1.41	1.07	1.06
	Kimmri	July, 15	6.06	4.85	2.88	2.53	1.88	1.85
	Khalal	Oct., 15	17.18	15.46	4.24	4.31	2.51	2.59
Halawy	Hababouk	June, 15	1.42	2.92	1.69	1.84	1.41	1.54
	Kimmri	July, 15	8.76	8.22	3.34	3.23	2.28	2.23
	Khalal	Oct., 15	24.05	18.06	4.69	4.71	3.07	2.86


Ibrahim et al. (2001)



## F. Chemical Characteristics of date palm cvs. At Egypt



Cultivars	Stage of maturity	Date of picking	Sugars (%)		Tannins (%)	
			1997	1998	1997	1998
Zagloul	Hababouk	June, 15	8.29	8.82	3.52	3.91
	Kimmri	July, 15	20.87	19.80	2.02	2.60
	Khalal	Oct., 15	70.64	70.63	1.09	1.09
Samany	Hababouk	June, 15	13.11	15.78	3.27	3.71
	Kimmri	July, 15	33.17	32.10	1.93	2.77
	Khalal	Oct., 15	79.74	81.87	0.84	0.79
Bent Aisha	Hababouk	June, 15	14.18	15.24	3.69	3.51
	Kimmri	July, 15	32.90	31.03	1.86	2.79
	Khalal	Oct., 15	72.78	73.57	1.06	0.98
Halawy	Hababouk	June, 15	15.78	16.85	3.39	3.48
	Kimmri	July, 15	36.65	31.57	1.86	2.59
	Khalal	Oct., 15	77.33	79.73	1.02	0.83



Ibrahim et al. (2001)

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## F. Chemical Characteristics of date palm cvs. At Egypt

Cultivars	Stage of maturity	Date of picking	Nitrogen (%)		Phosphorus (%)		Potassium (%)	
			1997	1998	1997	1998	1997	1998
Zagloul	Hababouk	June, 15	2.16	3.10	0.23	0.28	1.6	1.5
	Kimmri	July, 15	2.53	2.98	0.19	0.29	1.4	1.3
	Khalal	Oct., 15	1.79	1.57	0.12	0.17	1.3	0.8
Samany	Hababouk	June, 15	2.16	2.53	0.22	0.26	1.5	1.5
	Kimmri	July, 15	2.47	2.05	0.20	0.24	1.0	1.3
	Khalal	Oct., 15	1.56	1.56	0.16	0.17	0.9	0.9
Bent Aisha	Hababouk	June, 15	2.54	2.31	0.19	0.25	1.3	1.4
	Kimmri	July, 15	2.16	1.86	0.16	0.21	1.0	1.1
	Khalal	Oct., 15	1.34	0.74	0.10	0.13	0.8	0.6
Halawy	Hababouk	June, 15	2.47	2.91	0.21	0.28	1.1	1.1
	Kimmri	July, 15	2.02	2.01	0.19	0.24	1.2	1.3
	Khalal	Oct., 15	1.12	1.04	0.12	0.19	0.8	0.6

Ibrahim et al. (2001)

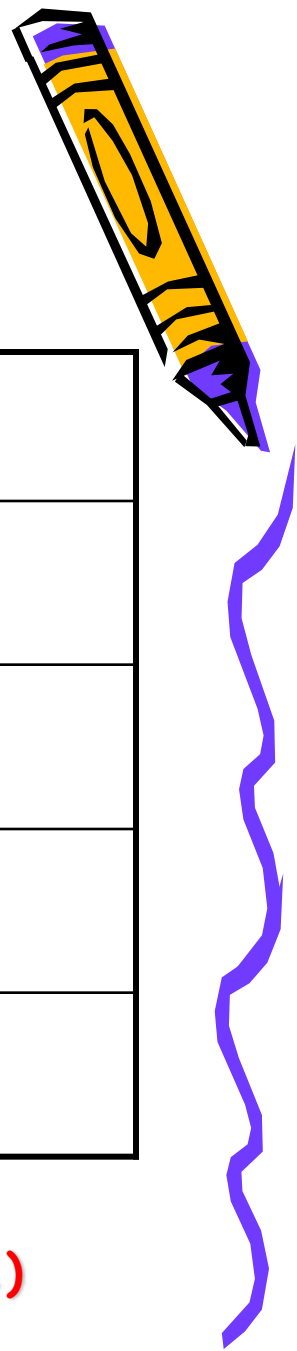
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## F. Chemical Characteristics of date palm cvs. At Egypt

Cultivars	Stage of maturity	Date of picking	Calcium (ppm)		Iron (ppm)		Zinc (ppm)	
			1997	1998	1997	1998	1997	1998
Zagloul	Hababouk	June, 15	1.08	1.08	78	78	72	66
	Kimmri	July, 15	0.89	1.03	88	77	57	61
	Khalal	Oct., 15	0.76	0.81	55	60	23	27
Samany	Hababouk	June, 15	0.97	0.98	96	89	71	76
	Kimmri	July, 15	0.86	0.96	87	86	39	47
	Khalal	Oct., 15	0.71	0.81	77	75	27	23
Bent Aisha	Hababouk	June, 15	1.08	0.98	98	94	74	75
	Kimmri	July, 15	1.00	0.94	45	46	43	39
	Khalal	Oct., 15	0.80	0.81	66	66	30	27
Halawy	Hababouk	June, 15	0.99	0.99	97	96	56	59
	Kimmri	July, 15	1.01	1.00	52	56	44	36
	Khalal	Oct., 15	1.00	0.81	73	74	33	43

Ibrahim et al. (2001)

## G. Yield of date palm cvs. at Egypt



Cultivars	Yield (kg/palm)	
	1997	1998
Zagloul	142.84	138.50
Samany	308.16	287.40
Bent Aisha	146.34	171.20
Halawy	145.42	109.22



Ibrahim *et al.* (2001)

## G. Yield of date palm cvs. at Bikaner

Cultivars	Yield (kg/palm)	
	2008	2009
Medjool	60	40
Halawy	55	40
Khadray	40	30
Shamran	35	20
Zahidi	35	30
Khalas	50	30
Nagal	42	30
Khuneizi	35	30
Barhee	65	45
Barshi	26	20

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