



FACULTY OF AGRICULTURE

Minia J. of Agric. Res. & Develop.
Vol. (28) No. 2 pp 245 -261 , 2008

EVALUATION OF SOME NEW SUGAR CANE VARIETIES AS AFFECTED BY HARVESTING DATES UNDER MIDDLE AND UPPER EGYPT CONDITIONS.

***E. M. Taha, *Sh. A. Mokadem, **K.S. El-Sogheir and **Y. M. Abd El-Azez**

*Agron. Dept., Fac., Agric., El-Minia Univ. , Minia, Egypt.

**Sugar Crops Res. Inst., Agric. Res. Center , Giza, Egypt.

Received 30 April 2008 Accepted 25 May 2008

ABSTRACT

The present investigation was carried out at Mallawi Agricultural Research Station, El-Minia Governorate and El-Mattana Agricultural Research Station, Qena Governorate during 2005/2006 and 2006/2007 seasons to evaluate six sugarcane varieties ; five promising ones namely; Ph.8013, G.98-28, G.98-87, G.99-103 and G.84-47 in addition to the commercial variety G.T.54-9 as a control . The effect of three harvesting dates on yield and quality traits of these varieties were studied.

A split plot design with four replications was used in both seasons, where harvest dates were allocated in the main plots, while sugarcane varieties were randomly distributed in the sub plots.

The results indicated that harvesting date had significant influence on cane and sugar yields. Sugarcane harvested at 12 months showed the highest values of these traits in both locations.

Planting G.84-47 or Ph.8013 varieties in Upper Egypt on mid March and harvesting after 12 months from planting is highly recommended to obtain highest cane and sugar yields (ton/fed.). However, in Middle Egypt, planting sugarcane variety Ph.8013 on mid March and harvesting it after 12 months from planting is highly recommended to get the highest cane and sugar yields (ton/fed.).

INTRODUCTION

Sugar industry depends largely on sugarcane crop. However, growing sugarcane in Egypt depends on the commercial variety G.T.54-9 only since more than twenty years, which represents a high risk that may face sugar industry. Therefore, releasing new cane varieties is considered a vital need. Recently, Sugar Crops Research Institute succeeded in selecting some promising sugarcane varieties, among them G.84-47, G.99-103, G.98-28, G.98-87 and Ph.8013. It is a well known fact that sugarcane varieties are broadly different in their growth characters, quality traits as well as cane and sugar yields. These differences are due to great variation in gene make-up and prevailing meteorological factors throughout the growing season. Therefore, it is of great importance to evaluate varietal performance under the conditions of various regions to obtain the highest qualitative and quantitative criteria.

Sugarcane varieties with different maturity periods are needed throughout the crushing season which extends from late December to late May and sometimes to early June(Abo El-Ghait (2000), Ismail (1997), Gomaa (2000), Yousef, *et al.* (2000), Mohamed and Ahmed (2002) and Nasser *et al.* (2006)

Therefore, this work was carried out to study the effect of harvest date on yield and juice quality of six sugarcane varieties grown at different locations.

Evaluation of new sugar cane varieties

MATERIALS AND METHODS

This investigation was carried out at Mallawi Agricultural Research Station, El-Minia Governorate and El-Mattana Agricultural Research Station, Qena Governorate during 2005/2006 and 2006/2007 seasons to evaluate six sugarcane varieties (five promising ones namely Ph.8013, G.98-28, G.98-87, G.99-103 and G.84-47 in addition to the commercial variety G.T.54-9 as a control) and the effect of three harvesting dates on yield and quality traits of these varieties.

Each experiment at El-Mattana and Mallawi included 18 treatments representing combination between the following factors:

Harvesting dates: after 11 months from planting, after 12 months from planting and after 13 months from planting.

Sugarcane varieties: G.T.54-9, G.84-47, G.99-103, G.98-87, G.98-28 and Ph.8013

A split plot design with four replications was used in both seasons, where harvest dates were allocated in the main plots, while sugarcane varieties were randomly distributed in the sub plots. Sub-plot area was 28 m² which comprised 4 ridges with 7 m in length and 1 m in width. The dry method of sugarcane planting was used. The tested sugarcane varieties were planted in spring season on the middle of March in both seasons. Overall applications of the recommended NPK fertilization were added at rates of 240 kg N (as urea 46% N), 60 kg P₂O₅ (as calcium super phosphate 15.5 % P₂O₅) and 50 kg K₂O (as potassium sulphate 50 % K₂O). Phosphorus fertilizer was added during land preparation, nitrogen and potassium fertilizers were added in two equal doses after two and three months from planting. Other agricultural practices were carried out as recommended by Sugar Research Institute.

Chemical Analysis of the experimental soil at the two locations was carried out and the data are show in Table1. Also temperature during both seasons of study at the two locations was recorded and the data are shown in Table 2.

Table 1: Chemical analyses of the upper 40 cm of the soil at El-Mattana and Mallawi Agricultural Research Stations

Season		2005/2006		2006/2007	
Location		Mallawi	Mattana	Mallawi	Mattana
Chemical analysis	pH	8.45	8.58	8.59	8.07
	Av. N (ppm)	39.69	35.22	41.01	38.24
	Av. P (ppm)	10.12	8.12	11.95	8.07
	Av. K (ppm)	185.11	170.12	190.13	168.23

Table 2: Maximum and minimum temperature degrees, C⁰ at Mattana and Mallawi Agricultural Research Stations in 2005/2006 and 2006/2007 growing season.

Months	T-max (2005/2006)		T-min (2005/2006)		T-max (2006/2007)		T-min (2006/2007)	
	Mallawi	Mattana	Mallawi	Mattana	Mallawi	Mattana	Mallawi	Mattana
	March	19.7	29.6	14.1	10.4	24.1	34.0	9.5
April	29.2	36.6	12.6	15.2	28.3	37.0	12.7	13.0
May	33.3	40.5	15.9	21.0	35.6	41.3	18.1	18.1
June	34.8	41.6	31.2	22.6	34.7	40.6	19.7	19.7
July	36.0	40.8	20.7	26.5	36.8	41.8	22.0	22.0
August	36.8	40.7	21.8	21.3	35.3	40.0	21.9	21.9
September	33.6	40.1	19.9	17.7	34.5	42.3	19.2	19.2
October	31.4	38.1	16.8	20.7	30.6	37.5	17.0	17.0
November	24.9	31.7	12.6	10.9	26.2	31.3	11.3	11.3
December	19.9	25.9	5.2	5.8	20.6	26.6	8.9	8.9
January	18.8	23.9	5.4	4.1	20.2	24.2	5.6	5.6
February	19.5	28.8	4.7	4.7	20.9	27.9	5.9	5.9
March	24.1	34.0	9.5	9.5	24.6	34.3	9.5	9.5
April	28.3	37.0	12.7	13.0	28.4	37.5	12.6	12.6

Evaluation of new sugar cane varieties

At harvest, a sample of ten millable stalks was randomly collected from each sub-plot to determine the following characters:

Millable cane yield (ton/fed) was determined from millable canes of two guarded rows of each sub-plot which were harvested, topped, cleaned, weighed and cane yield in tons/fed was calculated.

Recoverable sugar yield (ton/fed) was estimated according to the following equation:

$$\text{Sugar yield (tons/fed)} = \text{cane yield (ton/fed)} \times \text{sugar recovery \%}$$

Technological quality parameters:

Total soluble solids percentage (TSS %): was determined using "Brix hydrometer" according to A.O.A.C. (1995).

Sucrose percentage was determined using Sacharometer according to A.O.A.C. (1995).

Purity percentage was calculated as given by Satisha *et. al* (1996) using the following formula :

$$\text{Purity \%} = \text{Sucrose \%} \times 100 \div \text{TSS \%}$$

Recovery sugar percentage was calculated by using the following formula:

$$\text{Recovery sugar \%} = \text{richness \%} \times \text{purity \%}$$

$$\text{Where: richness} = (\text{sucrose in 100 grams juice} \times \text{factor}) / 100$$

Factor = $100 - [(\text{Fiber \%} + \text{physical impurities \%} + \text{percent water free sugar})]$

Statistical analyses:

The collected data were analyzed by two methods:

Randomized complete block design combined over locations and years (for data pre harvesting) with four replications and Randomized complete block design with split, combined over locations and years (for data after harvesting). The harvest dates were allocated in the main plots while sugar cane varieties were randomly distributed in the sub plots.

RESULTS AND DISCUSSION

Millable cane and recoverable sugar yields:

Effect of harvesting dates, sugar cane varieties, locations and their interaction on millable cane and recoverable sugar yields (ton/fed) are presented in Tables 3 and 4. The data show that harvesting date had a significant effect on millable cane and recoverable sugar yields (ton/fed) for evaluated sugar cane varieties at both locations. Data pointed out that the second harvesting date (after 12 months) recorded the highest values of millable cane and recoverable sugar yields; 62.57 and 7.14 ton per fed respectively, while the lowest values (61.01 and 6.33 ton per fed) were found with the first harvesting date (after 11 months). The present findings are completely in accordance with those of Nigade *et al.* (1999), Khandagave (1999) and Arumugam *et al.* (2002) who studied the effect of harvest dates (10, 11, and 12 months) on yield and quality of 6 sugarcane cultivars and found that cane yield increased with the increase in crop age from 11 to 12 month.

Data in Tables 3 and 4 revealed significant variation among the tested sugarcane varieties in millable cane yield at both locations and combined. Sugarcane varieties G.99-103 and Ph.8013 recorded the highest values of cane yield ton /fed (65.17 and 64.76 ton per fed respectively), while the lowest one was recorded by G.84-47 variety with a value of 55.44 ton per fed. Sugarcane variety Ph.8013 produced the highest sugar yield/fed (7.55 ton per fed), while G.99-103 variety, gave the lowest value (6.57 ton per fed). The increase in sugar yield in Ph.8013 variety could be attributed to their superiority in yield and sucrose percentage, while G.99-103 variety had lowest value in sucrose percentage. In this connection, Nasser *et al.* (2006) evaluated five sugarcane varieties (Ph8013, G84/47, G98/28, G98/87 and G.T54/9) and found that these varieties significantly differed in millable cane and sugar yields; variety Ph8013 gave the highest

Evaluation of new sugar cane varieties

millable cane and sugar yields, while the other varieties ranked in between.

Also, locations had a significant effect on millable cane and sugar yields (Tables 3 and 4) El-Mattana location surpassed Mallawi location in millable cane and sugar yields. This result could be due to the fact that El-Mattana is characterized by fertile soil and suitable environmental conditions than Mallawi (Tables 1 and 2). These results are in agreement with those reported by Hapase *et al.* (1995), Channabasappa *et al.* (1997) and Kadam *et al.* (2004).

Technological quality parameters:

Results given in Tables 5, 6, 7, and 8 show significant differences in the percentage of total soluble solids, sucrose purity and sugar recovery among harvesting dates of sugarcane varieties in both locations and combined, with third harvesting date (after 13 months) gave the highest values. The lowest values of total soluble solids, sucrose, purity and sugar recovery percentages were obtained with the first harvesting date (after 1 month). This could be attributed mainly to the effect of high temperatures especially night temperature prevailing during May, also when the harvesting date was delayed the sugarcane plant became more mature. This finding is in agreement with those recorded by Nassar (1996), Ramesh and Mahadevaswamy (1996) and El-Sogheir and Besheit (2003) who reported that total soluble solids, sucrose, purity and sugar recovery percentages increased gradually as harvesting delayed until 13 months.

Table 3: Millable cane yield (ton per feddan) of the studied sugar cane varieties as affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)	Location(L)		Combined			
		Mallawi	Mattana				
11 months	G.T.54/9	57.17	64.93	61.05			
	G. 84-47	49.94	59.98	54.96			
	G.99-103	62.97	70.52	66.75			
	G. 98-28	53.75	63.68	58.72			
	G. 98-87	57.20	62.86	60.03			
	Ph. 8013	62.16	66.92	64.54			
Mean		57.20	64.82	61.01			
12 months	G.T.54/9	57.23	67.00	62.12			
	G. 84-47	52.92	62.82	57.87			
	G.99-103	62.19	70.41	66.30			
	G. 98-28	60.47	64.23	62.35			
	G. 98-87	58.99	62.04	60.51			
	Ph. 8013	63.54	68.98	66.26			
Mean		59.22	65.91	62.57			
13 months	G.T.54/9	56.09	65.08	60.58			
	G. 84-47	49.55	57.41	53.48			
	G.99-103	59.78	65.14	62.46			
	G. 98-28	58.77	62.65	60.71			
	G. 98-87	59.29	63.40	61.35			
	Ph. 8013	61.48	65.49	63.49			
Mean		57.49	63.19	60.35			
Mean of varieties	G.T.54/9	56.83	65.67	61.25			
	G. 84-47	50.80	60.07	55.44			
	G.99-103	61.65	68.69	65.17			
	G. 98-28	57.66	63.52	60.59			
	G. 98-87	58.49	62.77	60.63			
	Ph. 8013	62.39	67.13	64.76			
Mean		57.97	64.64	61.31			
LSD at 5% level	H 0.510	V 1.038	L 0.416	HV 1.798	HL 0.721	VL 1.468	HVL NS

Evaluation of new sugar cane varieties

Table 4: Sugar yield (ton per feddan) of the studied sugar cane varieties a affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)		Location(L)		Combined		
			Mallawi	Mattana			
11 months	G.T.54-9		5.91	7.07	6.49		
	G. 84-47		5.48	6.63	6.06		
	G.99-103		5.79	6.69	6.24		
	G. 98-28		5.43	6.67	6.05		
	G. 98-87		5.86	6.49	6.18		
	Ph. 8013		6.66	7.23	6.94		
Mean			5.86	6.80	6.33		
12 months	G.T.54-9		6.38	7.90	7.14		
	G. 84-47		6.34	7.96	7.15		
	G.99-103		6.00	6.91	6.46		
	G. 98-28		6.68	7.62	7.15		
	G. 98-87		6.66	7.22	6.94		
	Ph. 8013		7.66	8.34	7.99		
Mean			6.62	7.66	7.14		
13 months	G.T.54-9		6.41	7.81	7.11		
	G. 84-47		6.03	7.25	6.64		
	G.99-103		6.71	7.32	7.01		
	G. 98-28		6.58	7.40	6.99		
	G. 98-87		6.84	7.57	7.21		
	Ph. 8013		7.49	7.91	7.69		
Mean			6.68	7.54	7.11		
Mean of varieties	G.T.54-9		6.23	7.59	6.91		
	G. 84-47		5.95	7.28	6.62		
	G.99-103		6.17	6.97	6.57		
	G. 98-28		6.23	7.23	6.73		
	G. 98-87		6.46	7.09	6.78		
	Ph. 8013		7.27	7.82	7.55		
Mean			6.39	7.33	6.86		
LSD at 5%level	H 0.08	V 0.13	L 0.06	HV 0.23	HL NS	VL 0.18	HVL NS

Table 5: Total soluble solids of the studied sugar cane varieties as affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)		Location(L)		Combined		
			Mallawi	Mattana			
11 months	G.T.54-9		19.25	20.12	19.68		
	G. 84-47		20.02	20.62	20.33		
	G.99-103		18.50	19.55	19.03		
	G. 98-28		18.87	20.15	19.51		
	G. 98-87		19.12	19.76	19.44		
	Ph. 8013		19.56	20.14	19.85		
Mean			19.22	20.06	19.64		
12 months	G.T.54-9		20.75	20.81	20.78		
	G. 84-47		20.93	21.25	21.09		
	G.99-103		19.62	20.31	19.97		
	G. 98-28		19.68	20.44	20.06		
	G. 98-87		20.31	20.28	20.30		
	Ph. 8013		20.31	20.56	20.68		
Mean			20.35	20.61	20.48		
13 months	G.T.54-9		21.31	20.56	21.24		
	G. 84-47		21.75	21.80	21.77		
	G.99-103		20.12	20.61	20.37		
	G. 98-28		20.43	20.88	20.66		
	G. 98-87		20.93	20.94	20.94		
	Ph. 8013		21.16	21.17	21.17		
Mean			20.95	21.09	21.03		
Mean of varieties	G.T.54-9		20.43	20.70	20.57		
	G. 84-47		20.90	21.22	21.06		
	G.99-103		19.41	20.16	19.79		
	G. 98-28		19.66	20.49	20.08		
	G. 98-87		20.12	20.33	20.23		
	Ph. 8013		20.51	20.62	20.57		
Mean			20.18	20.59	20.38		
LSD at 5% level	H	V	L	HV	HL	VL	HVL
	0.09	0.19	0.08	NS	0.14	0.27	NS

Evaluation of new sugar cane varieties

Table 6: Sucrose percentage of the studied sugar cane varieties as affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)			Location(L)		Combined	
				Mallawi	Mattana		
11 months	G.T.54-9			16.65	17.59	17.12	
	G. 84-47			17.70	18.01	17.86	
	G.99-103			15.35	15.72	15.54	
	G. 98-28			16.46	16.64	16.55	
	G. 98-87			16.96	16.92	16.94	
	Ph. 8013			17.34	17.82	17.58	
Mean			16.74	17.12	16.93		
12 months	G.T.54-9			17.75	18.46	18.11	
	G. 84-47			18.67	18.70	18.69	
	G.99-103			16.00	16.14	16.07	
	G. 98-28			17.84	18.075	17.96	
	G. 98-87			18.00	17.90	17.95	
	Ph. 8013			18.64	18.55	18.59	
Mean			17.82	17.97	17.89		
13 months	G.T.54-9			18.68	18.81	18.75	
	G. 84-47			18.50	18.86	18.68	
	G.99-103			16.07	16.40	16.24	
	G. 98-28			18.19	18.27	18.23	
	G. 98-87			18.50	18.16	18.33	
	Ph. 8013			19.00	19.11	19.05	
Mean			18.16	18.27	18.22		
Mean of varieties	G.T.54-9			17.69	18.28	17.99	
	G. 84-47			18.29	18.52	18.41	
	G.99-103			15.81	16.09	15.95	
	G. 98-28			17.49	17.66	17.58	
	G. 98-87			17.82	17.66	17.74	
	Ph. 8013			18.32	18.49	18.41	
Mean			17.57	17.79	17.68		
LSD at 5% level	H 0.08	V 0.11	L 0.06	HV 0.19	HL 0.11	VL 0.15	HVL 0.27

Table 7: Purity percentage of the studied sugar cane varieties as affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)			Location(L)		Combined	
				Mallawi	Mattana		
11 months	G.T.54-9			80.52	81.92	81.22	
	G. 84-47			83.39	83.70	83.54	
	G.99-103			72.37	74.09	73.23	
	G. 98-28			80.51	81.52	81.02	
	G. 98-87			80.28	82.71	81.50	
	Ph. 8013			81.50	81.17	81.34	
Mean			79.76	80.85	80.31		
12 months	G.T.54-9			83.76	86.09	84.93	
	G. 84-47			83.61	86.32	84.97	
	G.99-103			77.43	77.04	77.23	
	G. 98-28			82.51	82.11	82.31	
	G. 98-87			82.25	83.65	82.95	
	Ph. 8013			84.58	84.92	84.75	
Mean			82.36	83.36	82.86		
13 months	G.T.54-9			85.64	87.65	86.64	
	G. 84-47			85.87	86.00	85.94	
	G.99-103			77.47	77.97	77.72	
	G. 98-28			83.50	85.12	84.31	
	G. 98-87			84.50	84.46	84.48	
	Ph. 8013			87.66	88.32	87.99	
Mean			84.11	84.92	84.52		
Mean of varieties	G.T.54-9			83.31	85.22	84.26	
	G. 84-47			84.29	85.34	84.82	
	G.99-103			75.76	76.37	76.06	
	G. 98-28			82.17	82.92	82.55	
	G. 98-87			82.35	83.61	82.98	
	Ph. 8013			84.58	84.81	84.69	
Mean			82.08	83.04	82.56		
LSD at 5% level	H 0.25	V 0.38	L 0.20	HV 0.66	HL NS	VL 0.54	HVL 0.93

Evaluation of new sugar cane varieties

Table 8: Sugar recovery percentage of the studied sugar cane varieties as affected by different harvesting dates and different locations.

Harvesting dates(H)	Varieties(V)		Location(L)		Combined		
			Mallawi	Mattana			
11 months	G.T.54-9		10.34	10.94	10.64		
	G. 84-47		11.01	11.09	11.05		
	G.99-103		9.20	9.50	9.35		
	G. 98-28		7.74	10.49	9.11		
	G. 98-87		7.77	10.35	9.06		
	Ph. 8013		8.22	10.81	9.52		
Mean			9.05	10.53	9.79		
12 months	G.T.54-9		9.90	11.80	10.85		
	G. 84-47		10.74	12.68	11.71		
	G.99-103		9.66	9.84	9.75		
	G. 98-28		11.04	11.88	11.46		
	G. 98-87		11.30	11.66	11.48		
	Ph. 8013		12.06	12.11	12.08		
Mean			10.78	11.66	11.22		
13 months	G.T.54-9		11.45	12.01	11.73		
	G. 84-47		12.18	12.80	12.49		
	G.99-103		11.25	11.26	11.25		
	G. 98-28		11.32	11.94	11.63		
	G. 98-87		11.53	11.95	11.74		
	Ph. 8013		12.11	12.08	12.09		
Mean			11.64	12.01	11.82		
Mean of varieties	G.T.54-9		10.56	11.58	11.07		
	G. 84-47		11.31	12.19	11.75		
	G.99-103		10.04	10.20	10.12		
	G. 98-28		10.03	11.44	10.73		
	G. 98-87		10.20	11.32	10.76		
	Ph. 8013		10.80	11.67	11.23		
Mean			10.49	11.40	10.94		
LSD at 5% level	H 0.58	V 0.48	L 0.47	HV 0.83	HL NS	VL NS	HVL 1.17

Data in Tables 5, 6, 7 and 8 indicated that the evaluated sugarcane varieties differed significantly in total soluble solids percentage, sucrose, purity and sugar recovery percentages at both locations and combined. Varieties Ph.8013 and G.84-47 recorded the highest values, while sugarcane variety G.99-103 recorded the lowest. This finding could be possibly probably due to genetic variation among varieties. The same results were reported by Gomaa (2000), Ahmed (2003), and Abd El- Razek *et al* (2007).

It is also, noticed that locations significantly affected this trait. Sugarcane planted at El-Mattana location recorded higher values of this trait, while the lower values of this trait was found at Mallawi location. These results could be due to higher temperature at El-Mattana than Mallawi.

REFERENCES

- Abd El- Razek, A.M and K.S. El- Sogheir (2007).** Effect of bioferylization and seeding rate on yield and quality of four sugarcane varieties. E gypt J. Agric. Res.,85(2):587-602.
- Abo El-Ghait; R.A.M. (2000).** Estimation of stability parameter for some sugar cane varieties. Ph. D. Thesis, Fac. of Agric. Minoufiya Univ., Egypt.
- Ahmed A.Z. (2003).** Harvesting age with relation to yield and quality of some promising sugarcane varieties. Egypt. J. Appl. Sci., 18(7):114-124.
- Anonymous (1981).** Chemical Control in the Egyptian sugar factories. Jan., pp.232.
- Association of Official Agriculture Chemist (1995).** Official methods of analysis published by the A.O.A.C., Box 540, Washington.

Evaluation of new sugar cane varieties

- Arumugam, K; Arul, J.S; Prabhakar, C.. (2002).** Studies on identification of suitable sugarcane varieties, months of planting and ages at harvest for maximizing cane yield and sugar recovery in late season. Proceedings-of-the-64th-Annual-Convention-of-the-Sugar-Technologists'--Association-of-India,-Cochin-Kerala,-India,-17th-19th-August, A156-A172.
- Channabasappa, K.S; Kumar, M.D; Reddy, B.G.M; Patil, S.G. (1997).** Effect of varieties, planting dates and harvesting period on yield and quality of sugarcane. Karnataka-Journal-of-Agricultural-Sciences, 10(1): 19-24.
- El-Sogheir, K.S and Besheit,S.Y. (2003).** Effect of Harvesting dates on quality and yield of some promising sugarcane varieties under south Egypt conditions. Annals of Agric. Sc. Moshtohor, vol. 41(3): 1057-1069.
- Gomaa, A.M.EL-S. (2000).** Physiological studies on the response of sugarcane to irrigation. Ph.D. Thesis, Fac. of Agric. AL-Azhar, Univ., Egypt.
- Hapase,-R-S; Doule,-R-B; Repale,-J-M (1995).** A study of evaluation of some early and mid-late maturing sugarcane varieties in pre-season planting. Cooperative-Sugar. 26(10): 771-775.
- Ismail, A.M. (1997).** Effect of some agricultural treatments on yield of Sugar cane. Ph.D. Thesis, Fac.of Agric., Al-Azhar Univ.
- Kadam,-U-A; Hasure,-R-R; Patil,-J-P; Kanse,-B-R. (2004).** Response of sugarcane varieties for different dates of harvesting under pre-seasonal conditions. Cooperative-Sugar. 35(6): 471-473.
- Khandagave,-R-B. (1999).** Effect of age of harvest, variety and month of planting on cane and sugar yield. Indian-Sugar. 49(4): 287-289.

- Mohammed, B.D. and A.Z. Ahmed (2002).** Influence of planting seasons and nitrogen fertilizer levels on productivity of three sugarcane varieties. Egypt. Appl. Sci; 17 (3) 64-77.
- Nassar, A.M. (1996).** Yield and quality response of some sugarcane (*saccharum spp.*) cultivars to potassium nutrition and date of harvest. Ph.D. Thesis, Fac. Agric. Cairo. Univ., Egypt.
- Nasser, A. M;K.S.El- Sogheir and A. A Abazaid (2006).** Evaluation of some promising sugar cane varieties under different seeding rates. Egypt J. of Appl. Sci., 21 (12B): 446-462.
- Nigade,-R-D; Farpat,-B-N; Ankalkope,-M-N; Patil,-J-P; Jadhav,-B-S; Hasabnis,-A-B. (1999).** Performance of sugarcane varieties under pre-seasonal condition for different dates of harvesting. / cane varieties. Egypt. J. Agric. 78 (5) 20-27.

تقييم بعض أصناف قصب السكر الجديدة تحت تأثير مواعيد الحصاد في مصر الوسطى و العليا

إيمان محمد طه* . شكري عبد السلام مقدم*

كمال سيد الصغير** . ياسر محمد عبد العزيز**

*قسم المحاصيل - كلية الزراعة - جامعة المنيا ** معهد بحوث المحاصيل السكرية - مركز البحوث الزراعية - الجيزة.

أقيمت تجربتان حقليتان بكل من محطة بحوث المطاعة بمحافظة قنا ومحطة بحوث ملوى بمحافظة المنيا خلال موسمي الزراعة ٢٠٠٥/٢٠٠٦ و ٢٠٠٦/٢٠٠٧. اشتملت كل تجربة على ثمانية عشر معاملة تمثل التوافقات بين ثلاثة مواعيد للحصاد

Evaluation of new sugar cane varieties

(١١، ١٢، ١٣ شهرًا من تاريخ الزراعة) وستة أصناف من قصب السكر هي: الصنف التجارى G.T. 54-9 وخمسة أصناف مبشرة - (G. 84-47, G.98-28 , G.98-87, G.99-103, Ph.8013) المنزرعة كقصب غرس. استخدم تصميم القطع المنشقة مرة واحدة فى أربع مكررات حيث وضعت مواعيد للحصاد فى القطع الرئيسية ووزعت الأصناف فى القطع الشقية الأولى ، وكانت مساحة القطعة التجريبية ٢٨ م^٢ تحتوى على ٤ خطوط طول كل منها ٧ م والمسافة بين الخطوط ١٠٠سم.

أوضحت النتائج أن ميعاد الحصاد الثانى (١٢ شهر) أدت الى زيادة معنوية فى محصول العيدان والسكر فى كلاً من الموقعين.

إتضح من النتائج تفوق جميع الأصناف المنزرعة فى منطقة المطاعنة على مثيلتها المنزرعة بمنطقة ملوي و للحصول على أعلى محصول من العيدان بالطن للفدان ينصح بزراعة الصنف جيزة ٨٤-٤٧ أو الصنف المبشر الفلبيني (بي إتس ٨٠١٣) فى منتصف مارس و يتم الحصاد بعد ١٢ شهر من الزراعة فى منطقة مصر العليا، أما فى منطقة مصر الوسطى فينصح بزراعة الصنف المبشر الفلبيني (بي إتس ٨٠١٣) فى منتصف مارس و يتم الحصاد بعد ١٢ شهر من الزراعة للحصول على أعلى محصول من العيدان و السكر بالطن.