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EFFECT OF SOME WEED CONTROL METHODS ON YIELD AND QUALITY OF SUGARCANE UNDER SOHAG CONDITIONS

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ABSTRACT

Two filed trials were carried out in Shandaweel Agricultural Research Station, Sohag Governorate during 2006/2007 and 2007/2008 seasons. Each trail included 12 treatments represent, hand hoeing once at 45 days after planting (DAP), hand hoeing twice at 45 and 65 DAP and hand hoeing thrice at 25, 45 and 65 DAP, using herbicides, Garlon at rate 200 cm/fed, Derby at rate 30 cm/fed, Starane at the rate of 200 cm/fed and Karmex at the rate of 2 kg/fed, and the use of these herbicides separately plus one hand hoeing at 65 DAP and unweeded (control). Treatments were arranged in a randomized complete block design with four replicates. Sugarcane var Ph. 8013 was used. The obtained results revealed that weed control treatments had a significant affected on narrow, broad leaved and total weeds (g/m^2) in both seasons. Hand hoeing thrice, hand hoeing twice and Garlon + one hand hoeing gave the best weed control as compared to unwedded treatment in the first and second seasons, respectively. Also, weed control treatments significantly affected stalk height and diameter, number of internodes/stalk, brix, sucrose and sugar recovery percentages as well as millable cans, cane and sugar yields in both seasons. Using hand hoeing thrice resulted in the highest values of the studied traits in both seasons, except brix, sucrose and sugar recovery percentages in the second season. Using Karmex + one hand hoeing resulted in the highest values of these traits as compared to the unwedded treatment.

Under conditions of the present study, it can conclude that hand hoeing thrice achieved the highest values for cane and sugar yields.

INTRODUCTION

Sugarcane (*Sacmharum spp L.*) is considered the main crop for sugar industry in Egypt as well as the world. The competition of weeds to sugar cane plants resulted in a 40.01% reduction in cane yield from weed-free control values of 97.07 t/ha. However yields were not influenced significantly when the crop was kept weedy up to 60 DAS, Phogat *et al.* (1990). Weed control in sugarcane field in the early stage is very important since hearty in gestation, duration of weed infestation, competing ability of crop plant and climatic conditions which affect weed and crop growth. Generally, the increase in by weed growth one kilogram corresponds to a reduction in one kilogram of crop. Abdalla *et al.* (1990) indicated that hand hoeing 3 times, at 25, 50 and 75 DAS reduced dry weight of weeds relative to the unweeded control. Abd El-Rahman *et al.* (1990) found that the application of Asulam (Atrazine) at 1.4 kg/fed and Hexazinone/Karmex at 1.2 and 1.8 kg/fed of post-emergence resulted in higher control of weeds and gave higher

brix than unweeded or hand hoeing treatment. Chauhan and Das (1990) stated that the highest millable cane yields were obtained with 2 manual weedings. Pol% in cane was not affected by the treatments. Mehra *et al.* (1990) showed that applying Atrazine at the rate of 1 kg/ha, 2,4-D + Atrazine at 0.8 + 1.0 kg/ha, respectively, Metribuzin at 1.05-1.4 kg/ha and Karmex at 1.6 kg/ha + 2 hoeings reduced dry weight of weeds and increased cane yield compared to the untreated control. Integration of one hoeing (10 weeks after sowing) with hand sprays of Atrazine at 0.33 kg/ha and 2,4-D + Atrazine at 0.27 kg/ha increased the spectrum of weeds controlled and increased cane yields by 87.18 and 85.67%, respectively, over the unweeded control. Johari and Singh (1991) reported that 4 hoeing and Atrataf [Atrazine] at 1.5 kg/ha or Sencor [thiobencarb] at 1.5 kg/ha combined with post-emergence. 2,4-D at 1 kg/ha increased yields of sugarcane, number and length of millable canes but decreased dry weight of weeds. The use of herbicides did not effect sugarcane quality. Saini and Chakor (1992) noted that hand hoeing with Atrazine (1.5, 2.0 and 2.5 kg/ha) increased extraction percentage, sucrose content, purity%, available sugar content and commercial cane sugar yield compared with sugarcane from unweeded plots. Patil (1993) indicated that hand weeding performed 4 times monthly was an effective weed control method. Moreover the maximum sugar yield was produced with hand weeding method (13.56 t/ha), and 2,4-D and Paraquat (1.0 + 0.5 kg/ha) produced the next greatest yield value (13.30 t/ha). Mahadevaswamy *et al.* (1994) found that hand hoeing at 45, 60 and 90 DAP and Atrazine at 2.0 kg/ha or Metribuzin at 1.0 kg/ha + hoeing at 60 DAP resulted in the greatest cane and sugar yields. None of the weed control treatments affected sugar quality significantly. Mehra *et al.* (1995) applied Simazine and Atrazine at 1.0 kg/ha, Metribuzin at 1.4 kg/ha and Karmex at 1.6 kg/ha as pre-emergence. They showed that significant reduction in the dry matter accumulation of weeds compared to the untreated control. The increase in cane yield over a weedy check (no weeding) under these treatments were 108.0-120%. Brar and Mehra (1995) found that Simazine, Atrazine, Karmex and Metribuzin gave good control of weeds and increased cane yields as a result of herbicide treatments. The best treatment resulted from Metribuzin compared with the weedy control and with hand weeding. Singh *et al.* (1995) stated that hoeing and weeding 3 times, Gramoxone [paraquat dichloride] or 2 kg/ha 2,4-D, 1 kg/ha Atrazine + 1 kg/ha 2,4-D or 1 kg/ha Sencor [Metribuzin] controlled weeds successfully. Dry weight of weeds reduction was greatest with hoeing and weeding (60.1-62.3%), followed by Atrazine + 2,4-D (55.8-56.7%), with Gramoxone and 2,4-D and total field TM next. Tillering was also increased by weed control treatments, and most millable canes were achieved with 2,4-D or Gramoxone and hoeing. Ismail (1997) found that hand hoeing twice at 30 and 45 DAP, Stomp at the of rate 0.85 kg active ingredient/fed + one hand hoeing at 45 DAP and Senecor at the rate of 0.21 kg a.i/fed + one hand hoeing at 45 DAP decreased significantly all weeds and increased stalk height, diameter, internodes/stalk, millable cane/fed, sugar yield, brix, sucrose, and purity percentages. Sinha *et al* (1998) noted that weeds dry weight was the lowest with 2 hand weeding. Cane yield increased with hand weeding or Metribuzin plus 2,4-D. Weed density was the lowest with three

hoeings (13.60 weeds/m^2). Sprouting of sugar buds at 45 DAP ranged from 30 to 32.8% with the different weed control measures. Mahender *et al.* (2002) mentioned that using of 1.0 kg Metribuzin/ha, 6 weeks after planting and 2.0 kg Atrazine/ha Pre-emergence + 1.0 kg 2,4-D/ha, 3 weeks after planting resulted in higher weed control efficiency and lower weed index values. Atrazine + 2,4-D gave higher cane yield than Metribuzin but lower yield than trash mulch. None of the weed control methods significantly affected brix values and percentages of sucrose, purity, pol, and commercial cane sugar. Attalla and Sogheir(2003) studies the effect of Metribuzin at 300 g/fed. (applied at 30 days after planting), Glufosinate at 2 litre/fed. (30 DAP) + 2 litre/fed. (60 DAP), hand hoeing 4 times (45, 75, 105 and 140 DAP) compared to the untreated plots. They found that hand hoeing 4 times was the best control treatment broadleaved weeds at 90 and 150 DAP, followed by Metribuzin and Glufosinate. They added that hand hoeing 4 times gave the highest yield of sugarcane (49.67 t/fed., which was higher than the control by 26.71% in the first season, and by 24.96% in the second one. Saini *et al.* (2003) found that hand weeding at 30, 60 and 90 DAP had the lowest weed population/m^2 and weed dry matter but had the highest weed control efficiency as well as gave the highest millable canes and cane yield/ha. Srivastava *et al.* (2003) found that the highest cane yield (84.7 t/ha) obtained with 3 hoeings (30, 60 and 90 DAP), was matched by tank-mix applications of Glyphosate (1.0 litre/ha) and 2,4-D (0.5 kg/ha) at 75 DAP (77.3 t/ha). The various treatments did not affect the juice quality. Manuel and Panneerselvam (2005) found that hand hoeing at 30 DAP, Pendimethalin (15 kg a.i./ha) and Atrazine (2 kg a.i./ha) were good controlling for all weeds.

Therefore, this work was conducted to study the effects of some weed control methods on yield and quality of sugarcane under conditions of Sohag Governorate.

MATERIALS AND METHODS

Two field experiments are carried out in Shandaweel Agricultural Research Station, Sohag Governorate of 2006/2007 and 2007/2008 seasons to study the effect of some weed control methods on yield and quality of sugarcane under the conditions of Sohag Governorate. The preceding crop was maize followed by fallow. The studied treatments were as follows:

1. Hand hoeing once at 45 days after planting.
2. Hand hoeing twice at 45 and 65 days after planting.
3. Hand hoeing thrice at 25, 45 and 65 days after planting.
4. Garlon 48 % E.C. (Triclopyr) at the rate of 200 cm/fed as post-emergence at 30 days after planting
5. Derby 17.5 % S.C (Florasulam + Flumetsulam) at the rate of 30cm/fed as post-emergence at 30 days after planting
6. Starane 20% E.C (Fluroxypyr)) at the rate of 200 cm/fed as post-emergence at 30 days after planting
7. Karmex 90% D.F (Dioron) at the rate of 2 kg/fed after planting and before irrigation.

8. Garlon + one hand hoeing at 65 days after planting.
9. Derby + one hand hoeing at 65 days after planting.
10 Starane + one hand hoeing at 65 days after planting.
11. Karmex + one hand hoeing at 65 days after planting.
12. Unweeded (control).

A complete randomized block design with four replications was used. Plot area was 21 m^2 including 6 ridges of 3.5 m in length and 1.0 m apart. Sugarcane variety vis Ph. 8013 was planted on the 20 of March in the first season and the 10 of March in the second season and harvested after 12 months in both seasons.

Mechanical and chemical properties of the experimental soil are presented in Table 1.

Table 1: Mechanical and chemical properties of the upper 40 cm of soil of the experimental sites during 2006/2007 and 2007/2008 seasons.

Season		2006/2007	2007/2008
Mechanical analysis	Sand%	56.34	51.57
	Silt	28.44	26.30
	Clay	15.22	22.13
Soil texture		Sandy loam	Sandy loam
Chemical analysis	N Available(ppm)	0.20	0.17
	$CaCO_3$%	1.20	1.34
	CO_3 Meq/100g	0	0
	HCO_3 Meq/100g	0.30	0. 26
	CL^- Meq/100g	0.89	0.79
	$SO_4^=$ Meq/100g	1.02	1.02
	Ca^{++} Meq/100g	0.53	0.50
	Mg^{++} Meq/100g	0.27	0.23
	Na^+ Meq/100g	1.25	1.19
	K^+ Meq/100g	0.16	0.15
	EC(ds/m) (1:5)	0.24	0.23
	pH	7.5	7.6

Calcium super phosphate (15% P_2O_5) was applied during land preparation at 30 kg P_2O_5/fed. Nitrogen fertilizer (210 kg N/fed as urea 46.5%) was added in two equal doses after 60 days from planting and 30 days later. Potassium fertilizer was applied once as potassium sulphate (48% K_2O) with the second dose of nitrogen fertilizer at the rate of 96 kg K_2O/fed Other cultural practices were carried out as recommended.

Recorded data:

I. Weed traits:

Weeds from one m^2 in each plot were pulled out after 95 days from planting, separated to broad and narrow leaved weeds and air dried for seven days then oven dried at 70 C° until a constant weight to record the following items:

1. Dry weight of narrow leaved weeds (g/m^2).
2. Dry weight of broad leaved weeds (g/m^2).
3. Dry weight of total weeds (g/m^2).

The dominant weed species in the experimental plots in both seasons are shown in Table 2.

Table 2: Family, scientific name and common name of accompanied weeds of sugarcane during 2006/07 and 2007/08 seasons.

Weed species	Family	Scientific name	Common name
Broad leaved	Asteraceae	*Zanthium strumarium* L.	Spiny cock lebur
	Solanaceae	*Datura stramonium* L.	Jimson weed
	Portulaceae	*Portulaca oleracea*, L.	Common puslane
	Tiliaceae	*Corchorus olitorius*, L.	Malta jute
	Amaranthaceae	*Amaranthus hybridus*, L.	Pig weed
	Asclepiadaceae	Cynanchum acutum L.	Montpelier scamong plant
	Cleomaceae	Gynandropsis gynandra (L.) brig	Spider flower
Narrow leaved	Poaceae	*Echinochloa colonum*, L.	Jungle-rice
	Poaceae	*Digitaria sanguinalis*, L	Hairy finger grass

II. Sugarcane traits:

At harvest, a sample of 20 stalks from each treatment was taken at random and the following data were recorded:

I. Growth traits:

Stalk height (cm), stalk diameter (cm) and number of internodes/stalk.

II. Quality traits:

1. Brix % of juice was determined in the laboratory using brix hydrometer.
2. Sucrose % of juice was determined using Sacharemeter according to A.O.A.C. (1995).
3. Purity percentage was calculated according to the following equation:

Purity % = sucrose%/brix% x 100

4. Sugar recovery percentage was calculated as follows:

Sugar recovery % = richness % x purity %

Where, richness = (sucrose in 100 grams x factor) /100

Factor = 100- [fiber% + physical impurities% + percent water free from sugar].

III. Yield and its components:

Millable cane stalks of four guarded ridges were harvested cleaned, topped and the following parameters were recorded: number of millable cane per feddan, cane yield (ton/fed) and sugar yield (ton/fed) was estimated according to the following equation:

Raw sugar production = cane yield (tons /fed) x sugar recovery %.

The collected data were statistically analyzed according to the method of Snedecor and Cochran (1981).

RESULTS AND DISCUSSION

1. Weeds:

Results in Table 3 showed that weed control treatments significantly affected dry weight of narrow, broad and total leaved weeds in 2006/07 and 2007/08 seasons. Hand hoeing thrice at 25, 45 and 65 DAP; hand hoeing twice at 45 and 65 DAP; Garlon + hand hoeing once at 65 days DAP and

Derby + hand hoeing once at 65 days DAP reduced narrow-leaved weeds by 95.8, 93.9, 92.6 and 90.1% as well as by 94.9, 92.0, 90.5 and 88.4% in the first and second seasons, respectively. These four treatments gave the highest reduction in dry weight of broad-leaved weeds by 97.0, 95.1, 94.6 and 93.3% and by 95.3, 94.3, 93.7 and 93.1% in the first and second seasons, respectively, as compared with the unweeded. Weed control treatments had a significant effect on dry weight of total weeds in both seasons. The highest reduction was obtained by hand hoeing thrice, hand hoeing twice, Garlon + hand hoeing once and Derby + hand hoeing once, while the single application of Starien, Karmex, Derby and Garlon herbicides resulted in little effects on weed control. These results may be due to the high efficiency of hand hoeing in controlling all spices of weeds, while the used herbicides were selective to control the broad-leaved weeds only. So, the mechanical weed control was more efficient than herbicides in weed control. These results are in full agreement with those obtained by Abdalla *et al.* (1990), Mehra *et al.* (1995), Sinha *et al.* (1998), Attalla and Sogheir (2003) and Manuel and Panneerselvam (2005).

Table 3: Dry weight of narrow, broad and total weeds (g/m^2) at 95 days after planting of sugarcane as affected by weed control treatments during 2006/2007 and 2007/2008 seasons.

Weed control treatments	2006/2007 season			2007/2008 season		
	Narrow leaved weeds	Broad leaved weeds	Total of weeds	Narrow leaved weeds	Broad leaved weeds	Total of weeds
Hand hoeing once at 45 DAP	42.37	20.53	62.90	70.77	25.17	95.93
Hand hoeing twice at 45 and 65 DAP	22.03	8.87	30.90	34.23	12.40	46.33
Hand hoeing thrice at 25, 45 and 65 DAP	14.97	5.40	20.37	25.67	10.25	35.92
Garlon at rate 200 cm/fed	46.90	25.50	72.10	84.07	30.30	114.37
Derby at rate 30 cm/fed	48.57	28.20	76.77	78.47	30.83	109.30
Starane at rate 200 cm/fed	52.13	32.13	84.27	86.57	37.90	124.47
Karmex at rate 2 kg/fed	50.07	44.63	94.70	112.80	53.87	166.67
Garlon + hand hoeing once at 65 DAP	26.60	9.73	36.33	40.53	13.67	53.90
Derby + hand hoeing once at 65 DAP	33.33	12.20	45.53	49.83	15.23	65.07
Starane + hand hoeing once at 65 DAP	38.33	15.23	53.57	56.40	18.20	74.60
Karmex + hand hoeing once at 65 DAP	39.70	17.37	57.07	59.93	20.80	80.73
Un-weeded	361.03	181.64	542.67	428.43	217.20	645.63
LSD at 0.05	10.82	8.98	12.12	8.93	6.10	13.48

* DAP: Days after planting.

2. Sugarcane growth traits:

Data in Table 4 showed that weed control treatments increased significantly stalk height, stalk diameter and number of internodes/stalk in both seasons. Hand hoeing thrice, hand hoeing twice, Garlon + hand hoeing once and Derby + hand hoeing once increased the stalk height, stalk diameter and number of internodes/stalk by (26.1, 23.3, 22.1 and 20.4 %), (16.2, 12.9, 12.0, and 10.4%) and (11.2, 10.4, 9.4 and 8.7%), and (29.7, 25.5, 20.8 and 19.8%), (20.8, 20.4, 17.0 and 17.0%) and (13.4, 12.7, 12.5 and 11.3%) in the first and second seasons, respectively as compared with unweeded treatment. In addition, there were insignificant differences among hand hoeing twice and hand hoeing thrice in their effect on weeds. The

highest values of these three traits, attained by the superiority of hand hoeing, may be due to that hoeing is very important not only to control weed but also to create suitable edaphic environmental conditions i.e. good aeration, high biotic activity and increase availability of some nutrients for sugarcane plants to grow well away from weed competition for growth factors such as nutrients, water and solar radiation. These results are in harmony with those obtained by Johari and Singh (1991) and Ismail (1997)

Table 4: Stalk height, diameter and number of internodes/stalk of sugarcane as affected by weed control treatments during 2006/2007 and 2007/2008 seasons.

Weed control treatments	2006/2007 season			2007/2008 season		
	Stalk height (cm)	Stalk diameter (cm)	No. internod-es/stalk	Stalk height (cm)	Stalk diameter (cm)	No. internod-es/stalk
Hand hoeing once at 45 DAP	281.67	2.63	19.60	275.37	2.66	19.70
Hand hoeing twice at 45 and 65 DAP	289.67	2.72	20.35	297.40	2.83	20.97
Hand hoeing thrice at 25, 45 and 65 DAP	296.33	2.80	20.50	307.30	2.84	21.12
Garlon at rate 200 cm/fed	280.00	2.61	19.13	272.13	2.56	19.60
Derby at rate 30 cm/fed	279.00	2.60	19.03	269.90	2.54	19.50
Starane at rate 200 cm/fed	277.67	2.59	19.03	269.67	2.53	19.43
Karmex at rate 2 kg/fed	277.00	2.57	18.69	267.57	2.50	19.20
Garlon + hand hoeing once at 65 DAP	287.00	2.70	20.17	286.20	2.75	20.93
Derby + hand hoeing once at 65 DAP	283.00	2.66	20.03	283.77	2.75	20.70
Starane + hand hoeing once at 65 DAP	282.67	2.64	20.03	277.80	2.73	20.53
Karmex + hand hoeing once at 65 DAP	282.00	2.63	19.83	277.43	2.66	19.73
Un-weeded	235.00	2.41	18.43	236.93	2.35	18.60
LSD at 0.05	6.99	0.11	0.72	10.67	0.10	0.40

3. Sugarcane quality:

The studied weed control treatments affected significantly sugarcane quality in terms of brix, sucrose, and sugar recovery percentages in both seasons in Table 5. Hand hoeing thrice at 25, 45 and 65 DAP; hand hoeing twice at 45 and 65 DAP; and Starane + hand hoeing once at 65 days DAP; increased brix, sucrose, and sugar recovery percentages by (17.4, 16.6, and 15.7%), (21.8, 21.6 and 20.7%) and (22.7, 21.9 and 22.6%), in first season respectively. In the second season, hand hoeing thrice at 25, 45 and 65 DAP, Starane + hand hoeing once at 65 days DAP and Karmex + hand hoeing once at 65 days DAP increased birx% by 17.1, 17.2 and 18.6%, but Karmex + hand hoeing once, Starane + hand hoeing once and Karmex alone increased the sucrose and sugar recovery percentages by (20.3, 18.1 and 18.0%) and by (18.2, 15.5 and 15.4%), respectively as compared with unweeded treatment. In addition, there were insignificant differences among hand hoeing thrice, hand hoeing twice, Garlon at rate 200 cm/fed and derby at rate 30 cm/fed in their effect on weeds. The distinct influence of hoeing on quality of sugarcane may be due to the encouraged effect of hoeing on growth and to the pronounced increase in assimilation organs (leaves), consequently increasing the assimilation and storage process which in turn reflected on the amount of stored sugar in stalk tissue. Similar results were reported by Saini and Chakor (1992) and Ismail (1997).

Table 5: Brix, sucrose and sugar recovery percentages of sugarcane as affected by weed control treatments during 2006/2007 and 2007/2008 seasons.

Weed control treatments	2006/2007 season			2007/2008 season		
	Brix%	Sucrose %	Sugar recovery %	Brix%	Sucrose %	Sugar recovery %
Hand hoeing once at 45 DAP	21.97	19.32	11.54	22.50	19.71	11.67
Hand hoeing twice at 45 and 65 DAP	22.60	20.08	12.06	22.35	19.27	11.24
Hand hoeing thrice at 25, 45 and 65 DAP	22.75	20.25	12.15	22.65	19.85	11.74
Garlon at rate 200 cm/fed	22.20	19.88	12.07	22.57	19.77	11.70
Derby at rate 30 cm/fed	22.35	19.69	11.74	22.25	19.53	11.61
Starane at rate 200 cm/fed	22.40	20.23	12.37	22.35	19.55	11.57
Karmex at rate 2 kg/fed	21.57	18.67	11.00	22.65	20.06	11.99
Garlon + hand hoeing once at 65 DAP	22.15	19.13	11.20	22.30	19.29	11.30
Derby + hand hoeing once at 65 DAP	22.00	19.66	11.93	22.36	19.35	11.33
Starane + hand hoeing once at 65 DAP	22.42	20.06	12.14	22.67	20.08	12.00
Karmex + hand hoeing once at 65 DAP	22.05	18.96	11.06	22.93	20.45	12.28
Un-weeded	19.38	16.63	9.90	19.34	17.00	10.39
LSD at 0.05	0.65	0.97	0.90	0.79	0.93	0.74

4. Yield and its components:

Results in Table 6 indicated that weed control treatments had a significant effect on number of millable cane, cane and sugar yields /fed in both seasons. Hand hoeing thrice at 25, 45 and 65 DAP, hand hoeing twice at 45 and 65 DAP, and Garlon + hand hoeing once at 65 days DAP gave the highest increase in number of millable cane//fed, cane and sugar yields/fed by (22.2, 21.7 and 21.5%), (32.0, 26.6 and 26.1%) and (61.9, 54.1 and 54.0%), respectively, in the first season and by (20.5, 20.3 and 20.2), (27.4, 25.3 and 23.1%) and (44.0, 42.7 and 40.7%), respectively in the second season as compared with unweeded treatment. Such effect can be attributed to the increase in stalk length and stalk diameter with hoeing treatments (Table 4). In addition, there were insignificant differences among hand hoeing thrice, hand hoeing twice, Garlon at rate 200 cm/fed + hand hoeing once and derby at rate 30 cm/fed + + hand hoeing once in their effect on weeds. This finding is alogic since three hoeings treatment exerted the highest reduction in fresh weight of cane weeds, and minimized considerably the hazardous effect of weed interference on growth and productivity of sugarcane. In addition, to fruitful impact of hoeing practices on physical and biotic properties of soil, i.e. soil aeration breaking up compacted soil, minimize crust formation, enhancing water downward movement and increasing biotic activity, and availability of nutrients from decomposed organic matter. These results are in agreement with those obtained by Brar and Mehra (1995), Sinha *et al.* (1998), Attalla and Sogheir (2003) and Srivastava *et al.* (2003).

Table 6: Millable cane, cane and sugar yields/fed of sugarcane as affected by weed control treatments during 2006/2007 and 2007/2008 seasons.

Weed control treatments	2006/2007 season			2007/2008 season		
	Millabe cane (thousand/fed)	Cane yield (ton/fed)	Sugar yield (ton/fed)	Millabe cane (thousand/fed)	Cane yield (ton/fed)	Sugar yield (ton/fed)
Hand hoeing once at 45 DAP	44.57	50.97	5.88	45.09	53.13	6.20
Hand hoeing twice at 45 and 65 DAP	45.39	52.63	6.34	45.97	55.37	6.22
Hand hoeing thrice at 25, 45 and 65 DAP	45.56	54.87	6.67	46.03	56.27	6.61
Garlon at rate 200 cm/fed	44.53	49.50	5.97	45.02	53.10	6.22
Derby at rate 30 cm/fed	44.47	49.40	5.79	44.95	52.90	6.14
Starane at rate 200 cm/fed	44.20	48.53	6.00	44.88	51.77	5.99
Karmex at rate 2 kg/fed	42.47	47.63	5.23	44.47	51.63	6.19
Garlon + hand hoeing once at 65 DAP	45.29	52.37	5.87	45.93	54.37	6.13
Derby + hand hoeing once at 65 DAP	45.27	52.37	6.24	45.77	54.10	6.13
Starane + hand hoeing once at 65 DAP	45.12	52.27	6.35	45.76	53.80	6.46
Karmex + hand hoeing once at 65 DAP	44.87	52.23	5.77	45.74	53.33	6.55
Un-weeded	37.28	41.57	4.12	38.22	44.17	4.59
LSD at 0.05	2.42	3.66	0.56	0.73	2.41	0.53

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تأثير بعض طرق مكافحة الحشائش على محصول وجوده قصب السكر تحت ظروف محافظه سوهاج

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أجريت تجربتان حقليتان فى موسمى 2007/2006 و 2008/2007 بمحطة البحوث الزراعية بشندويل محافظة سوهاج بهدف دراسة تأثير بعض طرق مكافحة الحشائش على محصول وجودة قصب السكر باستخدام الصنف Ph8013 واشتملت التجربة على 12 معاملة تتمثل فى (أجراء العزيق مرة واحدة بعد 45 يوما من الزراعة و العزيق مرتين بعد 45 و 65 يوما من الزراعة و العزيق ثلاثة مرات بعد 25و45 و 65 يوما من الزراعة واستخد مبيد الجارلون بمعدل 200سم للفدان و مبيد دربى بمعدل 30سم^3 للفدان ومبيد ستارين بمعدل 200 سم^3 للفدان ومبيد الكارمكس بمعدل 2كجم للفدان واستخدمت المبيدات السابقة بجانب عزقة بعد 65 يوما من الزراعة بالاضافة الى معاملة المقارنة بدون مكافحة للحشائش . تم توزيع المعاملات فى تصميم القطاعات الكاملة العشوائية.

أظهرت النتائج مايلى:

أثرت معاملات الحشائش المستخدمة تاثيرا معنويا على وزن الحشائش ضيقة وعريضة الاوراق والحشائش الكلية فى الموسمين وكانت أفضل المعاملات هى استخدام العزيق على ثلاث مرات تلاها العزيق مرتين ثم استخدام مبيد الجارلون + عزقة.

أظهرت النتائج أن طول وقطر العود وعدد السلاميات بالعود والبركس والسكروز وناتج السكر وعدد العيدان القابلة للعصر فى الفدان ومحصولى العيدان والسكر للفدان قد تأثرت معنويا بمعاملات الحشائش المستخدمة وأعطى العزيق ثلاث مرات أعلى القيم لتلك الصفات ماعدا النسبة المئوية لكل من البركس والسكروز وناتج السكر فى الموسم الثانى حيث أعطى استخدام الكارمكس + عزقة أعلى القيم لتلك الصفات فى الموسم الثانى بدون فروق معنوية.

توصى هذه الدراسة باستخدام معاملة العزيق ثلاث مرات للحصول على أعلى محصول وأفضل جودة من قصب السكر تحت ظروف محافظة سوهاج.