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EFFECT OF SOWING AND WEED CONTROL METHODS ON YIELD AND ITS COMPONENTS OF SOME BREAD WHEAT CULTIVARS

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ABSTRACT

The present study aimed to find out the effect of three sowing methods i.e. drilling , terracing and furrows , and three weed control methods (Hand weeding, chemical control and unweeded control) on yield and its components of three wheat cultivars (Masr2, Sids12 and Giza 168).Two field experiments were conducted at Faculty of Agriculture Farm of Minia university, during two successive seasons of 2013 / 2014 and 2014 / 2015 . The obtained results revealed that drilling sowing method gave the highest values of No. of spikelets / spike , No. of grains/ spike, spike grain weight (g.) , 1000- grain weight (g.), grain yield (ard. / fed.) and straw yield (ton/fed.) in both seasons . Masr-$_2$ cultivar surpassed both sids12 and Giza 168 cultivars in yield and its components. The maximum grain yield/ fed. was recorded for Masr-$_2$ cultivar in both seasons. Both hand weeding and chemical control(Pallas , 160 m^3 / fed.) increased significantly grain and straw yields/ fed. compared to unweeded check in the two seasons The interaction effect between sowing , weed control methods and bread wheat cultivars indicated that the highest grain yield (ard. / fed.) was obtained by drill method with Masr2 and sids12 cultivars, respectively when hand – weeding followed by chemical control were conducted in both seasons.

INTRODUCTION

Wheat (*Triticum aestivum L.*) is a member of family Poaceae which includes major cereal crops of the world such as maize , wheat and rice . Among the food crops, wheat is one of the most abundant sources of energy and proteins than any other cereal crop for the world population. It is consumed in many different forms like

bread, cakes, biscuits bakery products and many other confectionery products. Moreover, its straw is used as animal feed and also in the manufacturing of papers.

Wheat is the most important cereal crop in the world, as well as, in Egypt since it is stable food for human. The total consumption of wheat is about 13 million tons , while the total wheat production is about 8.27 million tons (produced from 3.00 million fed.) with average grain yield of 18.20 ard./ fed. (FAO, 2010 / 11). Therefore, there is a gap between the national need and the local wheat production, which means that Egypt still imports about 4.73 million tons annually. So, it is necessary to conduct research on wheat to improve the productivity through cultivating hight yielding cultivars with proper cultural practices. Sowing methods applied on the best regional cultivars with the suitable weed control will help to improve wheat productivity.

In Egypt, sowing wheat crop broadcasting and drilling methods are common practices. Recently, sowing wheat grains Afir in furrows consider new method. Eissa *et al.,* (1993) found that sowing Afir drill method gave the highest yield compared to Afir broadcasting method in wheat fields. So, broadcasting method increased spike length , No. of grains/spike and grains weight/ spike. The highest grains yield/ fed. was obtained from seeded plant in rows at 15cm part.

Salem *et al.* (1993) declared that Afir drill method increased significantly wheat grain yield compared to Afir broadcasting method. El- Far and Allam (1995) stated that sowing by drilling method increased significantly the 1000 – grain weight and grain yield/ fed. compared to broadcasting method. (Mobark 2008) revealed that Afir in furrows sowing method gave the highest values of spike length, spike weight, No. of grains/spike, grains weight/spike, No. of spikes/m^2. and 1000 – grain weight as compared with Afir drill and Afir broadcast sowing methods. Whereas, Afir drill method gave the highest values of No. of spikelets/ spike, grain and straw yields/fed. With regard to the cultivar differences, grain and straw yields/fed. as well as, number and weight of spikes of wheat varied according to the genotypes (El-Karamity 1998) . The differences between tested wheat cultivars were significant in number and weight of grains/spike (El-Hefnawy *et al*., 1991), spike length (Shalaby *et al.,* 1993).

Weeds are one of the major constraints of wheat production and weed control is the key factor in increasing yield. Weed control has been observed as one of the most important practice in crop production because good weed control will ensure maximum yield and high quality of farm product (Mobarak, 2008).

The objectives of this investigation were to study the response of wheat plant to different sowing methods namely ; Afir drill, Afir terracing and Afir in furrows method with different weed control treatments on yield and its components

of three wheat cultivars under middle Egypt conditions .

MATERIALS AND METHODS

Two field experiments were carried out at Faculty of Agriculture, Minia university, El- Minia Governorate, Egypt, during the two successive seasons of 2013 / 2014 and 2014/2015, to investigate the effect of three sowing methods, three weed control treatments on yield and its components of three bread wheat cultivars (*Triticum aestivum valgare L.*) . The preceding summer crop was maize in both seasons.

The sowing dates of wheat were on 24th and 26th of November in the first and second seasons, and the harvesting dates were on 10th and 14th of May in the first and second seasons, respectively.

Nitrogen fertilizer was applied in the form of urea (46.5% N) at the rate of 70 kg. N/fed. added in two equal doses after first and second irrigation. Phosphorus fertilizer was applied as calcium super phosphate (15.5% P_2O_5) during soil preparation at the rate of 100kg./ fed. The soil texture of the field was clay loam .The other agricultural practices of wheat growing were done as recommended. Each experiment included 81 plots (Experimental units); the plot area was 10.5m^2, (3m. length x 3.5m. width).

The experimental design was split-split plot in three replicates. The sowing methods (drilling, terracing and furrows) were allocated in the main plots , wheat cultivars i.e., Masr2 , sids12 and Giza 168 were assigned to sub-plots and weed control treatments; hand weeding- chemical control (Pallas 4.5% OD at rate of 160cm^3/fed.) and unweeded control were distributed in sub-sub plots .

At harvest, ten wheat plants were chosen at random from each plot to study No. of spikes /m^2, spike length (cm.), No. of spikelets / spike, No. of grains / spike , spike weight (g.) , spike grains weight (g.) ,1000 – grain weight (g.) , grain yield (ard./fed.) and straw yield (ton/fed.).

The obtained data in each season were statistically analyzed according to procedure outlined by Gomez and Gomez (1984), by means of "MSTAT-C" computer software package and Least Significant Differences test (L.S.D.) at 5% level of probability was used to compare among treatment means .

RESULTS AND DISCUSSION

Effect of sowing methods:

Data in Table 1 revealed that, sowing method significantly affected No. of spikes/m^2, spike length (cm.), No., of spikelets / spike, No. of grains / spike, spike weight (g.) , grains weight / spike (g.). 1000 – grain weight (g.) , grain yield (ard./fed.) and straw yield (ton/fed) as compared the other two sowing methods in both seasons. Sowing Afir drilling method surpassed Afir terracing and Afir in furrows methods in their effects on yield and yield components.

Table (1)**:** Yield and yield components of wheat as influenced by sowing methods in both seasons (2013 / 2014 and 2014 /2015) .

Sowing methods	No .of Spikes/ m^2	Spike length (cm.)	No. of spikelets / spike	No. of grains / spike	Spike weight (g.)	Grain weight/ spike (g.)	1000 – grain weight (g.)	Grain yield (ard./fed.)	Straw yield (ton. / fed.)
First season (2013 / 2014)									
Drilling	481.51	10.78	17.33	52.85	3.57	2.56	47.76	20.15	4.56
Terracing	474.70	10.48	16.82	50.70	3.13	2.63	47.02	19.31	4.21
Furrows	463.48	10.19	16.07	48.37	2.75	2.41	45.63	18.52	3.82
L.S.D 0.05	4.23	0.19	0.21	0.72	0.17	0.12	1.81	0.15	0.15
Second season (2014 / 2015)									
Drilling	448.51	11.13	18.30	54.89	4.20	3.08	48.46	19.71	4.31
Terracing	440.74	10.86	17.44	52.59	3.49	2.80	47.3	19.21	4.12
Furrows	431.85	10.67	16.70	50.11	3.10	2.56	45.88	18.39	3.91
L.S.dat. 0.05	4.02	0.20	0.33	0.82	0.18	0.11	1.91	1.18	0.17

$L.S.D._{0.05}$ = Least significant difference at 5 % level of probability.

These results are in harmony with the findings of Soomro *et al*. (2009) , Nasrullah *et al*. (2010) and Rahman *et al*., (2010) .

Wheat cultivars performance:

Data presented in Table 2 showed that wheat cultivars significantly affected No. of spikes /m^2 , spike length , No. of spikelets / spike , No. of grains / spike, spike weight (g.) grains weigh / spike (g.) , 1000 – grain weight(g.), grain yield (ard. / fed.) and straw yield (ton/ fed.) .

Masr2 cultivar recorded the highest values for all studied characteristics followed by sids12 and Giza168 in both seasons. The cultivars differences for all studied characters may be due to gentical factors and environmental conditions which affected on yield attributes. These results are in harmony with those reported by Hassan and Gaballah (2000), Munir *et al*., (2000), Ashoush and Abdel – Meniem (2001).

Effect of weed control:

Results presented in Table 3 declare that hand- weeding or chemical control (Pallas 4.5% OD at rate of 160cm^3/ fed.) significantly increased grain and straw yields per unit area as well as their contributing characters as compared to the unweeded control in both seasons . The present findings may be due to the greater competition between weeds and wheat plants in unweeded plots which reduce yield and its attributes. These results are in harmony with

those mentioned by Singh and Saha (2001), Halal (2003), Nassar (1998), Tesfay Amare *et al.,* (2016) and Areeb *et al.,* (2016).

Table (2): yield and yield components of wheat as influenced by wheat cultivars in both seasons (2013/2014 and 2014/ 2015) .

Cultivars	No .of Spikes/ m^2	Spike length (cm.)	No. of spikelets / spike	No. of grains / spike	Spike weight (g.)	Grain weight spike (g.)	1000 – grain weight (g.)	Grain yield (ardab/fed.)	Straw yield (ton. / fed.)
First season (2013 / 2014)									
Masr2	480.85	11.10	17.44	52.33	3.60	2.85	48.11	20.14	4.54
Sids 12	470.22	10.21	16.70	50.40	3.15	2.66	46.61	19.17	4.12
Giza 168	468.63	10.15	16.07	48.33	2.71	2.43	45.68	18.66	4.92
L. S. D $_{0.05}$	2.76	0.11	0.30	1.55	0.14	0.06	1.13	0.23	0.06
Second season (2014 / 2015)									
Masr2	443.89	11.23	18.04	54.22	3.74	3.08	48.7	19.90	4.53
Sids 12	440.78	10.86	17.78	53.25	3.57	2.76	47.28	19.66	4.00
Giza 168	436.11	10.57	16.63	50.11	3.30	2.60	45.67	18.21	3.80
L. S. D $_{0.05}$	2.87	0.10	0.52	10.66	0.15	0.08	1.19	0.24	0.08

Table (3)**:** yield and yield components of wheat as in influenced by weed control treatments in both seasons . (2013 /2014 and 2014 /2015).

Weed control	No .of Spikes/ m^2	Spike length (cm.)	No. of spikelets / spike	No. of grains / spike	Spike weight (g.)	Grain weight /spike (g.)	1000 – grain weight (g.)	Grain yield (ardab/fed.)	Straw yield (ton. / fed.)
First season (2013 / 2014)									
Hand. Weeding	490.25	10.91	18.04	54.04	3.41	2.89	50.70	21.27	4.61
Chemical control (Pallas)	487.18	10.70	17.44	52.11	3.28	2.74	49.80	20.73	4.47
Un weeded control	442.0	9.84	14.74	44.93	2.76	2.31	39.90	15.98	3.51
L. S. D $_{0.05}$	5.64	0.14	0.30	1.64	0.14	0.03	0.88	0.29	0.10
Second season (2014 / 2015)									
Hand. Weeding	490.53	11.26	18.78	56.44	4.04	3.16	50.41	20.84	4.53
Chemical control (Pallas)	487.59	11.03	17.67	53.18	3.79	2.90	47.84	20.37	4.25
Un weeded control	342.59	10.37	16	47.96	2.79	2.38	42.79	1.06	3.57
L. S. D $_{0.05}$	5.7	0.15	0.40	1.64	0.14	0.46	0.96	0.28	0.11

Effect of interactions:

Data recorded in Table 4 reveal the effect of interaction between sowing methods and wheat cultivars . Sowing Masr2 cultivar in drill method produced the highest values of spike weight (g.) , grains weight / spike (g.) and No. of spikes /m^2 in both seasons, while sowing Giza 168 cultivar in furrow method produced the lowest values of these characters in both seasons.

The results in Tables 5 indicate that , the interaction between sowing methods (drilling , terracing and on furrows) and different weed control methods (hand weeding , chemical control, unweeded control) was significant in both seasons for spike weight , grains weight/ spike, and grain yield (ard./ fed.) in both seasons , No. of spikelets / spike and straw yield / fed. in the first season , No. of spikes/m^2 and grains /spike in the second season. The highest values for these characters were obtained from sowing drilling with hand–weeding, followed by chemical control (Pallas), while the lowest values for these characters were obtained from sowing in furrows and unweeded control in both seasons .

The obtained results in Table 6 indicate that , the interaction between wheat cultivars and weed control treatments was significant in the first season for the spike length , No. of spikelets / spike , spike weight , grains weight/ spike and straw yield (ton. / fed.) in the first season in addition to No. of grains/ spike , spike weight , grain yield (ard. / fed.) and straw yield (ton / fed.) in the second season. The maximum grain and straw yields were recorded for $Masr_{-2}$ cultivar with hand–weeding and chemical control (Pallas) in both seasons.

Results in Table 7 indicate that the studied traits did not significantly affected by the interaction between sowing methods , wheat cultivars and weed control treatments in both seasons except of spike weight (g.) in the first season and No. of spikes/m^2 and No. of grains / spike in the second season .

Recommendation:

From the previous results, it appears that, (drilling, terracing) methods and hand–weeding followed by chemical control (Pallas) 4.5% OD at rate of 160 cm^3/fed. at 35 days after sowing with (Masr2) cultivar was recommended to produce the maximum yield.

Table (4): Effect of the interaction between sowing methods and wheat cultivars on yield and yield components of wheat in both seasons (2013 / 2014 and 2014 / 2015).

Treatments		No .of Spikes/ m^2	Spike weight (g.)	Grains weight/ spike (g.)	Straw yield (ton. / fed.)
Sowing methods	Cultivars				
First Season (2013 / 2014)					
drilling	Masr2	485.11	4.23	3.27	4.81
	Sids 12	481.55	3.56	2.87	4.50
	Giza 168	477.88	2.93	2.56	4.36
Terracing	Masr2	433.11	3.62	2.8	4.56
	Sids 12	471.88	3.08	2.7	4.21
	Giza 168	469.70	2.69	2.38	3.87
Furrows	Masr2	474.33	2.93	2.48	4.27
	Sids 12	457.22	2.81	2.42	3.66
	Giza 168	458.88	2.51	2.34	3.53
L.S.D. $_{0.05}$		13.76	0.87	0.59	0.40
second season (2014/ 2015)					
Treatments		No .of Spikes/ m^2	No. of grains/ spike	Spike weight (g.)	Grains weight/ spike (g.)
Sowing methods	Cultivars				
drilling	Masr2	452.0	56.33	4.26	3.46
	Sids 12	448.67	55.67	4.0	2.98
	Giza 168	443.78	52.67	3.80	2.80
Terracing	Masr2	445.11	54	3.68	3.12
	Sids 12	440.56	52.78	3.6	2.71
	Giza 168	436.56	51	3.2	2.58
Furrows	Masr2	434.44	52.33	3.3	2.66
	Sids 12	433.11	51.33	3.1	2.58
	Giza 168	428.0	46.67	2.91	2.43
L.S.D. $_{0.05}$		13.32	3.25	0.99	0.64

Table (5) : Effect of the interaction between sowing methods and weed control treatments on yield and yield components of wheat in both seasons (2013 / 2014 and 2014 / 2015)

Treatments		No. of spikes / m^2	Spike length (cm.)	No. of spikelets / spike	No. of grains / spike	Spike weigh (g.)	grains weight / spike (g.)	1000 – grain weight (g.)	grain yield (ardab / fed.)	Straw yield (ton/fed.)
Sowing methods	Weed control									
				First season						
Drilling	Hand. Weeding	495.55	11.23	18.89	56.67	3.98	3.22	51.94	22.22	4.94
	Chemical control	443.66	11.10	18.22	54.67	3.87	3.06	50.77	21.77	4.82
	Un weeded control	455.33	10.01	14.89	44.67	2.88	2.41	40.56	16.44	3.90
Terracing	Hand. Weeding	492.55	10.90	18.11	53.67	3.33	2.86	50.67	21.28	4.70
	Chemical control	488.44	10.63	17.67	52.33	3.21	2.69	50	20.71	4.54
	Un weeded control	443.11	9.93	14.67	46.11	2.84	2.33	40.39	15.99	3.39
Furrows	Hand. Weeding	482.66	10.61	17.11	51.78	2.92	2.6	49.50	19.31	4.18
	Chemical control	479.44	10.39	16.44	49.33	2.77	2.47	48.61	19.70	4.03
	Un weeded control	428.33	9.59	14.67	44	2.52	1.18	38.78	15.56	3.24
L.S.D. $_{0.05}$		N.S.	N.S	1.83	N.S	0.92	0.44	N.S	1.28	0.41
				Second season						
Drilling	Hand. Weeding	499.49	11.52	19.56	58.67	4.53	3.41	51.56	21.57	4.77
	Chemical control	497.78	11.29	18.67	56	4.34	3.21	50.11	21.16	4.42
	Un weeded control	347.22	10.57	16.67	50	3.18	2.61	43.72	16.38	3.73
Terracing	Hand. Weeding	491.22	11.22	18.78	56.67	4	3.17	50.33	21.02	4.54
	Chemical control	487.78	10.96	17.67	53.56	3.78	2.90	48.49	20.56	4.26
	Un weeded control	343.22	10.40	15.89	47.56	2.7	2.34	43.11	16.09	3.57
Furrows	Hand. Weeding	481	11.03	18	54	3.58	2.89	49.33	19.93	4.26
	Chemical control	477.22	10.83	16.67	50	3.23	2.60	46.78	19.38	4.07
	Un weeded control	337.33	10.16	15.44	46.33	2.50	2.18	41.53	15.75	3.4
L.S.D. $_{0.05}$		11.13	N.S	N.S	2.693	0.455	0.1897	N.S	1.288	N.S

Table (6): Effect of interaction between wheat cultivars and weed control treatments on yield and yield components of wheat in both seasons (2013 / 2014 and 2014 / 2015).

Treatments		No. of spikes / m2	Spike length (cm.)	No. of spikelets / spike	No. of grains / spike	Spike weigh (g.)	grains weight / spike (g.)	1000 – grain weight (g.)	grain yield (ard. / fed.)	Straw yield (ton/fed.)
Wheat Cultivars	Weed control									
				First season						
Masr 2	Hand. Weeding	497.00	11.62	19.00	57.00	3.98	3.17	52.22	22.28	5.0
	Chemical control	492.44	11.47	18.22	54.67	3.84	2.99	50.89	21.54	4.90
	Un weeded control	453.11	10.22	15.11	45.33	2.97	2.39	41.22	16.62	3.72
Sids 12	Hand. Weeding	486.66	10.61	18.00	54.44	3.43	2.92	50.67	21.14	4.52
	Chemical control	484.77	10.42	17.94	51.67	3.28	2.78	50.06	20.64	4.38
	Un weeded control	439.22	9.60	14.67	45.11	2.73	2.29	39.11	15.74	3.47
Giza 168	Hand. Weeding	487.11	10.50	17.11	50.07	2.82	2.59	49.22	20.40	4.29
	Chemical control	484.33	10.23	16.67	50.00	2.72	2.44	48.44	20.00	4.12
	Un weeded control	434.44	9.71	14.44	44.35	2.58	2.24	39.39	15.58	3.34
L.S.D. $_{0.05}$		N.S	0.77	1.25	N.S	0.87	0.49	N.S	N.S.	0.43
				Second season						
Masr 2	Hand. Weeding	493.56	11.60	19.44	58.47	4.24	3.43	52.22	21.99	5.01
	Chemical control	490.56	11.43	18.33	55.00	4.02	3.14	50.11	21.31	4.84
	Un weeded control	347.44	10.67	16.33	49.00	2.97	2.66	43.76	16.42	3.74
Sids 12	Hand. Weeding	490.56	11.20	19.00	57.00	4.08	2.11	50.33	20.99	4.39
	Chemical control	488.11	10.37	18.00	53.89	3.78	2.84	48.50	20.45	4.04
	Un weeded control	343.67	10.41	16.33	48.89	2.84	2.31	42.44	16.07	3.58
Giza 168	Hand. Weeding	487.56	10.98	17.89	53.64	3.79	2.92	48.67	19.55	4.18
	Chemical control	484.11	10.68	16.67	50.67	3.56	2.72	46.67	19.38	3.86
	Un weeded control	336.67	10.04	15.33	46.00	2.56	2.17	41.67	15.70	3.38
L.S.D. $_{0.05}$		N.S.	N.S.	N.S.	2.097	0.13	N.S	N.S	1.74	0.74

Table (7): Effect of the interaction among sowing methods , wheat cultivars and weed control on yield and yield components of wheat in both seasons (2013 / 2014 and 2014/ 2015) .

Treatments			Spike weight (g.)	No. of spikes/m^2	No. of grains / spike
Sowing methods	Wheat cultivars	Weed control			
			First season	Second season	
Drilling	Masr2	Hand. Weeding	4.77	481.33	61
		Chemical control (Pallas)	4.63	477.67	58
		Un weeded control	3.37	344.33	50
	Sids 12	Hand. Weeding	4.5	482.0	59
		Chemical control(Pallas)	4.27	477.67	57
		Un weeded control	3.23	339.67	51
	Giza 168	Hand. Weeding	4.33	479.67	56
		Chemical control(Pallas)	4.13	476.33	53
		Un weeded control	2.93	328.0	49
Terracing	Masr2	Hand. Weeding	4.17	496.67	59
		Chemical control(Pallas)	3.97	492.0	55
		Un weeded control	2.9	346.67	48
	Sids 12	Hand. Weeding	4.13	490.0	57
		Chemical control(Pallas)	3.87	487.0	53.67
		Un weeded control	2.8	344.67	47.67
	Giza 168	Hand. Weeding	3.7	487.0	54
		Chemical control(Pallas)	3.5	484.33	52
		Un weeded control	2.4	338.33	47
Furrows	Masr2	Hand. Weeding	3.8	502.61	56
		Chemical control(Pallas)	3.47	502.0	52
		Un weeded control	2.63	351.33	49
	Sids 12	Hand. Weeding	3.6	499.67	55
		Chemical control(Pallas)	3.2	499.67	51
		Un weeded control	2.5	346.67	48
	Giza 168	Hand. Weeding	3.33	496.0	51
		Chemical control(Pallas)	3.03	491.67	47
		Un weeded control	2.37	343.67	42
L.S. D. $_{0.05}$			0.26	9.52	3.29

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تأثير طرق الزراعة ومقاومة الحشائش علي المحصول ومكوناته لبعض أصناف قمح الخبز

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أجريت تجربتان حقليتان بمزرعة كلية الزراعة – جامعة المنيا خلال موسمي 2013/ 2014، 2014/ 2015 م، وذلك لدراسة تأثير طرق الزراعة ومقاومة الحشائش علي المحصول أو مكوناته لثلاثة أصناف من قمح الخبز .

1- طرق الزراعة وهي (تسطير – مصاطب – خطوط) .

2- الأصناف وهي (مصر 2 – سدس 12 وجيزة 168) .

3- طرق مقاومة الحشائش (يدوي – مبيد بلاس تركيز 5ر4 % بمعدل 160 سم^3/ فدان – بدون مقاومة) .

واستخدم في هذه الدراسة تصميم القطع المنشقة مرتين في ثلاث مكررات ، حيث وزعت طرق الزراعة عشوائياً في القطع الرئيسية ووزعت الأصناف عشوائياً فى القطع الشقية الأولي ، ووزعت طرق مقاومة الحشائش في القطع تحت الشقية وبينت هذه الدراسة ما يلي :

1- تفوقت طريقة الزراعة في سطور علي باقي الطرق الأخري في صفات المحصول ومكوناته في موسمي الزراعة ،حيث أعطت طريقة التسطير أعلي القيم لعدد حبوب السنبلة ووزن السنبلة وعدد السنيبلات / سنبلة ووزن الألف حبة ومحصول الحبوب (أردب / فدان) والقش (طن / فدان) .

2- إختلفت الأصناف معنوياً فى عدد السنابل /م2 وطول السنبلة وعدد السنيبلات / سنبلة وعدد حبوب السنبلة ووزن السنبلة ووزن حبوب السنبلة ووزن الألف حبة ومحصول الحبوب (أردب / فدان) والقش (طن / فدان) حيث تفوق الصنف (مصر2) علي الصنفين (سدس12) و(جيزة 168) في جميع الصفات تحت الدراسة .

3- تأثرت الصفات محل الدراسة تأثراً معنوياً بمعاملات مقاومة الحشائش حيث تفوقت المقاومة اليدوية والمعاملة بمبيد بلاس 5ر4 % علي القطع الغير معاملة في جميع الصفات تحت الدراسة .

4- أدت زراعة الصنف مصر 2 بطريقة التسطير إلي الحصول علي أعلي القيم لوزن السنبلة ووزن الحبوب / سنبلة وعدد السنابل في المتر المربع في كلا الموسمين، بينما اعطى الصنف (جيزة 168) مع طريقة الزراعة علي خطوط إلي الحصول علي أقل القيم لجميع صفات الدراسة (عدد السنابل في المتر المربع – وزن السنبلة – عدد حبوب السنبلة – عدد السنيبلات / سنبلة – طول السنبلة – ووزن الألف حبة ومحصولي الفدان من الحبوب والقش) .

5- كان للتفاعل بين طرق الزراعة ومقاومة الحشائش تأثيراً معنوياً على وزن السنبلة ووزن حبوب / سنبلة ومحصول الحبوب بالأردب / فدان في كلا الموسمين ، وأوضحت النتائج أن طريقة الزراعة بالتسطير مع مقاومة الحشائش يدوياً أو بمبيد بلاس أدت إلي الحصول علي أعلي القيم لتلك الصفات .

6- أدت زراعة صنف القمح مصر 2 مع مبيد الحشائش بلاس إلي الحصول علي أعلى القيم لمكونات المحصول خلال موسمي الزراعة ، بينما أدت زراعة صنف القمح (مصر 2) مع مقاومة الحشائش يدوياً للحصول علي أعلى محصول من الحبوب والقش .

توصي الدراسة بزراعة الصنف (مصر2) بالتسطير مع المقاومة اليدوية للحشائش للحصول علي أعلي إنتاجية من محصول القمح تحت ظروف منطقة المنيا .