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RESPONSE OF GIZA 90 COTTON CULTIVAR TO SOWING DATES AND FIRST IRRIGATION(AL-MOHAYAT) TIME

Hamed, F. S.
Cotton Research Institute, Agric. Res. Cent. Giza, Egypt.

ABSTRACT

Two field experiments were carried out at Shandweel Agricultural Research Station in 2009 and 2010 seasons to study the effect of sowing dates and first irrigation(Al-Mohayat) on growth, earliness, seed cotton yield and its components of Giza 90 (*Gossypium barbadense* L.). A split-plot design with four replications was used. The main plots were assigned to sowing dates (March 25, April 10 and April 25). Al-Mohayat irrigation time i.e., two, three and four weeks after sowing were assigned in the sub-plots. The results indicated that early sowing (March 25) significantly increased days to first flower, days to first open boll, number of open bolls/plant, seed cotton yield per plant and per feddan in both seasons. While, plant height at harvest and location of first fruiting node branch were decreased. Meanwhile, number of fruiting branches/plant, boll weight and number of plants at harvest/feddan were not significantly affected by sowing dates in both seasons. Delaying Al-Mohayat irrigation to four weeks after sowing significantly increased plant height at harvest, location of first fruiting node branch and days to first open boll in both seasons. While,delaying Al-Mohayat irrigation to three weeks after sowing significantly increased number of open bolls/plant, seed cotton yield per plant and per feddan in both seasons. Meanwhile, number of fruiting branches/plant, days to first flower, boll weight and number of plants at harvest/feddan were not significantly affected by Al-Mohayat irrigation. The interaction between sowing dates and Al-Mohayat irrigation had a significant effect on plant height at harvest, boll weight, number of open bolls/plant, seed cotton yield per plant and per feddan in both seasons. While, number of fruiting branches/plant, days to first open boll and number of plants at harvest/feddan were not affected in both seasons. Generally, best results were obtained when cotton plants were sown early (25 March) and Al-Mohayat irrigation (three weeks).

INTRODUCTION

It is well known that the reduction in cotton yield is mainly due to applying unproper cultural practices. The suitable sowing date may play a vital role in this field. Where, it recognizes the requirement of necessary heat units overall the cotton plant life .In this respect, early sowing increased seed cotton yield (El-Shahawy *et al.,* 1994 and Makram *et al.,* 1994). Abdel-Aal (1997) stated that sowing date had an insignificant effect on plant height. However, early sowing in March significantly increased period to flowering. Abou El-Nour *et al.* (2000) found that early sowing increased yield of seed cotton and its components , while, it decreased plant height and position of first sympodium .But, it delayed the first flower appearance. However, sowing dates had no effect on boll weight. Ali and El-Sayed (2001) revealed that early sowing (25 March) significantly increased number of sympodia on the main-stem, number of open bolls per plant, boll weight, number of days to the first flower, days to the first open boll, seed cotton yield per plant and per

feddan. Makram *et al.* (2001) showed that the highest yield components and yield per unit area were produced from early sowing. Saleh *et al.* (2004) found that late sowing increased plant height. However, early sowing may help the plants to have at their disposal a longer period to flowering. While, delaying sowing date from March to April decreased days to both first flower and open boll. However, increasing number of open bolls per plant, boll weight, seed cotton yield per plant and per feddan occurred with early sowing (on the last week of March). El Hindi *et al.* (2006) found that number of days to both first flower and open boll were decreased with delaying sowing to 10th April. While, early sowing in March increased seed cotton yield per feddan and its components i.e. number of open bolls per plant, boll weight and seed cotton yield per plant in varieties related to (*Gossypium barbadense* L.). El Sayed and El- Menshawi (2006) found that sowing cotton in 25th March significantly decreased final plant height, while number of sympodia per plant, nodal position of the first sympodium, days to first flower and first open boll, number of open bolls per plant, boll weight, seed cotton yield per plant and per feddan were increased. Abd El-All (2011) found that plant height, number of fruiting branches per plant and boll weight were significantly decreased as planting date was delayed. However, location of the first sympodium on plant main stem tended to be higher as planting date was delayed. While, the average number of days from planting to first flower and first open boll tended to be significantly decreased as planting date was delayed. Also, the maximum number of bolls per plant and yield of seed cotton per plant and per feddan were produced from planting on the first of March. Hamed (2011) found that early sowing (25March) significantly increased number of days to first flower, number of open bolls/plant, seed cotton yield per plant and per feddan in both seasons. While, final plant height at harvest was significantly affected by sowing dates in 2010season only and number of days to first flower in 2009 season only .Meanwhile, number of sympodia /plant ,boll weight and number of plants at harvest /feddan were not significantly affected by sowing dates in both seasons. In addition, the timing of Al-Mohayat irrigation is still subject to some differences of opinions. One opinion is in favour of delaying Al-Mohayat irrigation on the bases that the weather in early spring is relatively cool, and the longer this Al-Mohayat irrigation is postponed the more quickly the tap root grow down is search of water, to the advantage of the plant in its later life. This assumption, however is true with the growth of the root deep in soil and the consequences of a strong root system, it does not take in consideration the future possibility of rise in groundwater-table in late summer months and the injury it causes to the roots. Besides, this practice apparently causes a check, which contradicts the understanding, that the crop should be pushed to mature as early as possible. In the concern, Basilious and Abdel-Malak (1992), Ibrahim (1995) and Abou-El-Nour *et al.* (2001) reported that applying the first irrigation after 21 days from sowing date increased the number of open bolls/plant and seed cotton yield /fed. El-Menshawi *et al.,* (2006) found that application the first irrigation after 28 days from sowing gave the tallest plants, however,the highest number of open bolls per plant, boll weight and seed cotton yield /fed were obtained when the first irrigation was applied at 21 days after sowing. In contrast, Attia *et al.*

(2008) found that application of the first irrigation after 30 days from planting gave the highest values of all yield and yield components, except boll weight which recorded highest values with application of the first irrigation after 20 days from planting. On the other hand, the lowest values of all growth, yield and yield components were recorded by application of the first irrigation after 20days from planting in the two seasons, except boll weight which recorded the lowest values with application of the first irrigation after 30 days from planting in the two seasons.

MATERIALS AND METHODS

Two field experiments were carried out at Shandweel Agricultural Research Station in 2009 and 2010 seasons to study the effect of sowing dates and Al-Mohayat irrigation time on growth, earliness, seed cotton yield and its components of Giza 90 (*Gossypium barbadense* L.). The experimental design was split-plot with four replications. The main plots were allocated to the three sowing dates (25 March, 10 and 25 April), while, the sub-plots were assigned to Al-Mohayat irrigation timing (after two, three and four weeks from sowing). The sub-plot size was 17.55 m^2 (4.5m length and 3.9 m width) and included 6 ridges of 65 cm apart. Cotton seeds were sown in hills spaced 20 cm apart leaving two vigorous seedlings per hill at thinning time without replanting. The maximum and minimum air temperature and relative humidity in the two seasons are presented in Table 1 and maximum and minimum soil temperature in the two seasons are presented in Table (2).

Five guarded hills (every hill contained two plants) were randomly chosen from the three inner rows in order to study the following characters:

A-Growth and earliness traits:

Plant height at harvest (cm), number of fruiting branches/plant, location of first fruiting node, No. of days from planting to the first flower and No. of days to the first open boll.

B- Yield and yield component:

Number of open bolls /plant; boll weight in grams; seed cotton yield /plant in grams, No. of plants /fed at harvest and seed cotton yield in kentars/fed. Seed cotton yield/plot in kilograms was recorded and converted to kentars /fed. (one kentar =157.5 kg).

The collected data were subjected to analysis of variance outlined by Snedecor and Cochran (1967) and the mean values were compared using L.S.D at 5%.

Table 1: Minimum and maximum values of air temperature and relative humidity (R.H) as means of ten-day intervals through 2009 and 2010 seasons.

Intervals	2009				2010			
	Air temp. C°		R.H %		Air temp. C°		R.H %	
	min	max	min	max	min	max	min	max
21/3 – 31/3	9.00	26.10	31.80	96.00	11.80	27.60	17.50	42.00
1/4 – 10/4	10.60	30.80	28.70	74.50	14.30	34.00	22.40	50.20
11/4 -20/4	12.20	36.22	29.60	79.20	21.50	34.90	28.50	51.90
21/4 – 30/4	14.20	34.40	33.00	79.00	22.70	35.30	23.50	41.90
1/5 – 10 /5	15.35	32.20	33.40	85.80	20.10	37.40	25.00	48.20
11/5 – 20/5	20.10	39.60	26.60	83.00	29.60	42.70	48.10	69.90
21/5 – 31/5	22.40	38.80	37.60	97.20	21.50	37.10	28.40	58.50
1/6 – 10/6	22.00	41.00	25.60	73.80	18.70	34.40	29.30	59.70
11/6 -20/6	22.90	38.20	28.80	88.70	20.10	36.10	28.00	62.90
21/6 – 30/6	26.70	42.80	22.30	90.30	24.30	41.20	29.00	61.80
1/7 – 10/7	27.10	36.90	27.00	88.00	24.00	36.40	22.10	47.30
11/7- 20/7	29.80	41.70	38.30	88.90	27.00	40.50	32.40	64.40
21/7 -31/7	31.60	45.50	34.20	91.63	30.30	44.20	37.30	68.40
1/8 – 10/8	25.00	40.00	29.90	89.60	30.00	42.00	36.40	71.50
11/8 – 20/8	21.50	37.20	21.00	83.20	32.00	41.20	35.50	72.70
21/ 8 – 31/8	24.60	41.00	27.60	89.80	31.40	45.70	36.60	73.20
1/9 – 10/9	21.65	36.80	25.50	81.50	26.40	39.70	33.60	61.00
11/9 – 20/9	22.30	37.80	24.90	81.50	25.40	37.35	38.60	70.80
21/9 – 30/9	21.90	37.00	25.20	82.60	27.20	39.80	35.80	62.90
1/10 – 10/10	20.20	36.40	22.80	77.40	22.50	36.60	29.70	61.30
11/10 – 20/10	18.70	35.70	27.70	75.70	20.60	39.50	23.70	68.40
21/10 – 31/10	18.90	35.30	26.70	69.60	19.70	36.90	19.20	66.20

Source: Sohag Agrometeorological station.

Table 2: Minimum and maximum values of soil temperature as means of ten-day intervals through 2009 and 2010 season.

Intervals	2009		2010	
	soil		soil	
	Min	Max	Min	Max
21/3 – 31/3	29.31	32.35	16.80	19.80
1/4 – 10/4	28.35	34.27	22.20	26.40
11/4 -20/4	33.30	36.12	17.20	22.50
21/4 – 30/4	34.62	40.44	16.80	25.10
1/5 – 10 /5	33.75	36.59	13.80	21.80
11/5 – 20/5	38.22	38.50	18.60	25.60
21/5 – 31/5	41.30	43.80	14.40	18.80
1/6 – 10/6	39.80	43.60	14.40	18.90
11/6 -20/6	38.10	39.10	17.90	23.80
21/6 – 30/6	42.50	45.40	20.50	27.10
1/7 – 10/7	44.70	47.00	17.70	21.70
11/7- 20/7	46.25	48.25	18.70	22.60
21/7 -31/7	46.00	48.40	17.40	23.50
1/8 – 10/8	44.70	46.90	18.20	23.10
11/8 – 20/8	36.10	38.45	16.30	21.70
21/ 8 – 31/8	41.22	47.60	18.50	23.40
1/9 – 10/9	33.70	42.60	15.00	21.00
11/9 – 20/9	30.70	40.50	13.30	18.90
21/9 – 30/9	27.65	39.45	17.60	20.80
1/10 – 10/10	23.60	34.80	13.40	20.60
11/10 – 20/10	17.90	28.30	11.50	22.30
21/10 – 31/10	13.80	29.10	9.40	19.60

Source: Sohag Agrometeorological station.

RESULTS AND DISCUSSION

A- Growth and earliness traits:

The results in Table (3) show that early sowing (25 March) had significantly increased number of days to first flower and number of days to first open boll and decreased plant height at harvest and location of first fruiting node. These results may be due to that sowing cotton early on 25 March fit cotton plants to full seasons in order to obtain complete heat units requirements for good growth (Young *et al.,* 1980) which reflected in developing lower location of first fruiting branch (Table 3). Also, these results may be due to relatively high temperature of air and soil in case of late sowing which pushed the cotton plants to form excessive vegetative growth with few fruiting branches through short plant life, while in case of early sowing, the heat units accumulation was slowly, that helped cotton plants to form lower of location of first fruiting node .Similar results were obtained by El-Beily *et al.,* (1996), Makram *et al.,* (2001) and Hamed (2011). But, number of fruiting branches /plant was not affected by sowing dates.

Table (3): Effect of sowing dates, Al-Mohayat irrigation and their interaction on growth and earliness in 2009 – 2010 seasons

Treatments	Plant height at harvest		No. of fruiting branches/ plant		Location of first node		First flower appearance		First open boll	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
A: Sowing dates										
25March	156.89	161.42	21.09	25.60	6.01	7.27	78.56	74.83	134.38	129.52
10April	165.11	164.75	21.73	26.12	6.58	7.55	69.02	70.23	123.73	127.19
25April	182.10	172.16	26.00	67.77	6.63	7.61	67.74	67.52	120.31	124.28
F. test	*	*	NS	NS	*	*	*	*	*	*
L.S.D. at 0.05	0.76	0.44	NS	NS	0.27	0.40	2.13	1.69	3.04	2.03
B: First irrigation										
2weeks	165.89	160.33	22.60	26.33	6.16	7.61	72.35	70.45	124.93	124.08
3weeks	166.56	162.25	22.91	28.83	6.46	6.93	71.08	71.17	126.18	126.87
4weeks	171.65	175.75	23.31	25.32	6.56	7.88	71.89	70.96	127.31	130.03
F. test	*	*	NS	NS	*	*	NS	NS	*	*
L.S.D. at 0.05	0.67	0.36	NS	NS	0.37	0.29	NS	NS	1.75	3.37
Interaction (A)x(B)	155.67	155.00	20.67	24.35	5.76	7.30	80.20	76.15	133.33	125.10
	152.68	151.25	21.20	28.85	6.13	6.90	78.60	73.90	134.27	129.15
	162.33	178.00	21.40	23.60	6.13	7.60	76.87	74.45	135.53	134.30
	166.00	163.25	21.40	26.45	6.17	8.10	68.33	68.85	123.80	123.95
	162.00	166.55	21.73	24.85	6.96	7.25	67.40	69.20	123.53	126.82
	167.33	164.50	22.07	27.05	6.60	7.30	71.33	72.65	123.87	130.80
	176.00	162.75	25.73	28.20	6.63	8.15	68.53	66.35	117.67	123.20
	185.00	169.00	25.80	29.80	6.30	6.65	67.23	70.40	120.73	124.65
	185.30	184.75	26.47	25.30	6.96	8.05	67.47	65.80	122.53	125.00
F. test	*	*	NS	NS	*	*	*	*	NS	NS
L.S.D. at 0.05	1.16	0.62	NS	NS	0.64	0.51	2.02	2.94	NS	NS

With respect to Al-Mohayat irrigation time, the results illustrated in Table (3) show that, plant height at harvest , location of first fruiting node and number of days to first open boll significantly increased as Al-Mohayat

irrigation increased up to 28 days after sowing in both seasons .These results could be explained on the basis that delay Al-Mohayat irrigation up to four weeks after sowing caused excessive vegetative growth which in turn increased the shedding of fruiting bodies on lower fruiting branches as a result of the shading of excessive vegetative growth and consequently resulted in delaying maturity. Similar findings were obtained by El-Menshawi *et al.,* (2006), and Attia *et al.,* (2008). But, number of fruiting branches/plant and number of days to first flower appearance were not affected by Al-Mohayat irrigation in both seasons.

The interaction between sowing date and Al-Mohayat irrigation time significantly affected plant height at harvest, location of first fruiting node and number of days of first flower, where the highest values of these traits were obtained from early sowing date (25 April) and applying Al-Mohayat irrigation after four weeks from sowing. While, the interaction had not significant effects on the number of fruiting branches /plant and number of days to first open boll in both seasons.

C : Yield and yield components:

The results in Table (4) show that number of open bolls/plant, seed cotton yield per plant and per feddan significantly increased by early sowing date (25 March).These results could be explained on the basis that early sowing (25 March) encourage cotton plants to form more bolls and give the highest yield /plant which reflected on seed cotton yield /fed. Similar results were concluded by Abdel-Malak *et al.* (1996), Abou El-Nour *et al.* (2000), Makram *et al.* (2001), Saleh *et al.* (2004), El-Hindi *et al.* (2006), El-Sayed and El-Menshawi (2006), Abd El-All (2011) and Hamed (2011). But, boll weight and number of plants at harvest /fed were not affected by sowing dates in both seasons.

With respect to timing of Al-Mohayat irrigation, the results illustrated in Table (4) show that, number of open bolls/plant, seed cotton yield per plant and per feddan significantly increased by applying Al-Mohayat irrigation after three weeks from sowing. These results may be due to the sufficient water irrigation supply which was necessary to provide the cotton plants with its requirements of water to active vital processes such as metabolism which reflected on yield and its component. Similar results were obtained by Basilious and Abdel-Malak (1992), Ibrahim (1995), Abou-El-Nour *et al.,* (2001) and El-Menshawi *et al.,* (2006). But, boll weight and number of plants at harvest/fed were not affected by Al-Mohayat irrigation in both seasons.

The interaction between sowing dates and Al-Mohayat irrigation significantly affected number of open bolls, seed cotton yield/plant.Generally, best results were obtained when cotton plants were sown early on 25 March and applying Al-Mohayat irrigation after three weeks from sowing.

Table (4): Effect of sowing dates, Al-Mohayat irrigation time and their interaction on yield and yield components in 2009 – 2010 seasons

Treatments	No. of open bolls/ plan		Boll weight(g)		Seed cotton yield / plant(g)		No. plants at harvest(thousand plant / fed)		Seed cotton yield (kentar/ fed)	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
A: Sowing dates										
25March	20.85	17.72	1.77	1.91	36.81	34.41	46057	44523	7.38	6.56
10April	20.02	15.53	1.72	1.79	34.24	28.03	46183	45171	6.23	4.79
25April	10.07	14.03	1.59	1.55	15.97	21.79	45706	44835	3.39	3.93
F. test	*	*	NS	NS	*	*	NS	NS	*	*
L.S.D. at $_{0.05}$	0.49	0.44	NS	NS	0.40	2.65	NS	NS	0.20	1.25
B: Al-Mohayat irrigation time										
2weeks	15.75	15.95	1.64	1.69	25.66	27.37	46012	44528	5.59	5.34
3weeks	17.47	17.47	1.77	1.74	31.14	30.88	46051	44756	5.96	5.46
4weeks	16.89	13.42	1.67	1.77	28.52	24.02	45883	45246	5.46	4.48
F. test	*	*	NS	NS	*	*	NS	NS	*	*
L.S.D. at $_{0.05}$	0.32	0.40	NS	NS	0.37	2.29	NS	NS	0.34	0.21
Interaction (A)x(B)	19.40	19.00	1.55	1.82	30.07	34.82	46142	44045	7.31	6.98
	21.87	19.35	2.07	1.93	45.27	37.67	45851	44628	7.54	7.52
	21.27	15.40	1.67	1.99	35.10	30.73	46179	44897	7.29	5.17
	19.73	14.60	1.72	1.58	33.86	23.08	46306	44410	6.28	5.20
	21.33	17.40	1.63	1.84	34.39	32.02	46235	44951	6.99	5.10
	19.00	12.65	1.82	1.85	34.47	23.33	46010	46154	5.43	4.07
	8.13	14.25	1.61	1.69	13.05	24.21	45588	45129	3.17	3.85
	11.67	15.65	1.62	1.45	18.86	22.88	46068	44691	3.34	3.76
	10.40	12.20	1.53	1.48	16.00	18.29	45462	44687	3.65	4.19
F. test	*	*	*	*	*	*	NS	NS	*	*
L.S.D. at $_{0.05}$	0.55	0.69	0.21	0.21	0.65	3.97	NS	NS	0.59	0.36

REFERENCES

Abdel-Aal, S.A.I. (1997). Response of Giza 86 cotton cultivar to sowing date and pix (Mepiquate chloride) application. J. Agric. Sci., Mansoura Univ., 27(12): 4187- 4195.

Abd El-All, M.T.S. (2011). Physiological response of the Egyptian cotton to some cultural practices in Assiut governorate. Ph.D. Thesis, Fac. of Agric., Assuit Univ., Egypt.

Abdel-Malak, K.K.I.; E.A. Makram and R.S.H. Makram (1996). Effect of potassium fertilizer at higher nitrogen doses under different hill spacing on Egyptian cotton (Giza 80) in middle and upper Egypt. Zagazig. J. Agric. Res., 23(6): 957-968.

Abou El-Nour, M.S.; M.A. Saeed and M.A. Morsy (2000). Effect of fertilization under two planting dates on yield, yield components and some technological and chemical properties of Giza 80 cotton cultivar. Egypt. J. Agric. Res., 78 (3):1219-1231.

Abou El-Nour, M.S.H., O.M.M. Wassel and S.M. Ismail (2001) Response of Giza 80 cotton cultivar some cultural practices to control excessive vegetative growth J. Agric. Res., 79:191-204

Ali, S.A. and E. El-Sayed (2001). Effect of sowing dates and nitrogen levels on growth, earliness and yield of Egyptian cotton 88. Agric. Rev., 79(1): 221-232.

Attia, A.N., M.S. Sultan, E.M.Said., A.M.Zina and A.E.Khalifa(2008) Effect of the first irrigation time and fertilization treatments on growth, yield, yield component and fiber traits of cotton.J.Agron, 7:70-75

Basilious, S.I., K.K.I. Abdel-Malak (1992) Effect of irrigation intervals, nitrogen levels and their interaction on seed cotton yield of Giza 83 and its component.MiniaJ.Agric.Res.Rev.,14(3):699-713.

El-Beily, M.A.; S.A. Ali and E.A. Makram (1996). The reliable soil temperature for sowing cotton early . Egypt. J. Appl. Sci., 11(3): 73-78.

El-Hindi, M.H.; M. Said, M.H. Ghonema and A.E. Khalifa (2006). Studies on the effect of some cultural practices on the growth and the yield of Egyptian cotton. J. Agric. Sci., Mansoura Univ., 31 (7): 4087-4095.

El-Menshawi, M.E., E.A. El–Sayed and S.A. Abdel-Aal (2006) Effect of first and last irrigation considering irrigation intervals on yield , yield components and some chemical constituents of Giza 89 X Giza 86 hybrid cotton. J. Agric. Sci., Mansoura Univ., 31:1201 -1212

El-Sayed, E.A.; and M. El-Menshawi (2006). Influence of indole acetic Acid (IAA) application under different planting dates on growth and yield of Giza 88 cotton cultivar. Egypt. J. Agric. Res., 84(2): 505-521.

El-Shahawy, M.I.; S.M. El-Gahel and E.A. Makram (1994). Effect of planting dates, hill spacing and nitrogen levels on Giza76 cotton cultivar. J. Agric. Res., Tanta Univ., 20(4): 631-642.

Hamed,F.S.(2011) Air thermal units in relation to growth and development of cotton plants through different sowing dates J. Agric. Sci., Mansoura Univ., 2 (11):1409 -1419.

Ibrahim, M.K. (1995)Effect of the first post planting irrigation timing and when to stop watering on cotton production. Ph.D., Thesis, Fac. Agric., El-Minia Univ., Egypt.

Makram, E.A.; H.A. Abd El-Aal, K.A. Ziadah and A.A. Drawish (1994). The interrelationship between planting date and each of hill spacing and nitrogen fertilization doses for the Egyptian cotton cultivar Giza 75. Annals. Agric., Ain Shams Univ., Cairo, 39(2): 609-622.

Makram, EA.; H.A. Abd El-Aal, A.A. Drawish and W.M. El-Shazly (2001). Air the thermal units in relation to growth and development of cotton plants through different sowing dates. Minufiya, J. Agric. Res., 26 3: 659-671.

Saleh, M.E.; S.A.I. Ghunem, O.A.A. Zeiton and G.I.M.A. Rashed (2004). Effect of planting date, density and nitrogen fertilization on shedding, earliness, yield and fiber quality of Egyptian cotton. Zagazig J. Agric. Res., 31(6): 2597-2620.

Snedecor, D.M. and M.G. Cochran (1967). Statistical methods.6th Ed. Iowa state Univ., Press, Aimas, Iowa USA.

Young. E.F.; R.M. Teler and H.D. Petarson (1980). Day-degree units and time in relation to vegetative development and fruiting for three cultivars of cotton. Crop Sci., 20: 370-375.

استجابة صنف القطن جيزة ٩٠ لمواعيد الزراعة وميعاد الرية الاولى (المحاياة)

فكرى سيد حامد
معهد بحوث القطن – مركز البحوث الزراعية – الجيزة – مصر.

أقيمت تجربتان حقليتان بمحطة البحوث الزراعية جزيرة شندويل محافظة سوهاج فى موسمى ٢٠٠٩ ،٢٠١٠م لدراسة تأثير مواعيد الزراعة(٢٥ مارس ،١٠ ابريل ،٢٥ ابريل) وميعاد الرية الاولى(المحاياة) بعد اسبوعين ، ثلاثة اسابيع ،اربع اسابيع من الزراعة على النمو والتبكير والمحصول ومكوناته فى صنف القطن المصرى جيزة ٩٠ .

تم استخدام تصميم ا لقطع المنشقة مرة واحدة فى أربعة مكررات حيث خصصت مواعيد الزراعة فى القطع الرئيسية ، بينما خصصت القطع المنشقة لمواعيد رية المحاياة .

وكانت النتائج المتحصل عليها كالآتى :-

١- أدت الزراعة فى الميعاد المبكر (٢٥ مارس) الى زيادة معنوية فى عدد الايام لتفتح اول زهرة وعدد الايام لتفتح اول لوزة وعدد اللوز المتفتح على النبات ومحصول القطن الزهر للنبات وللفدان فى كلا الموسمين، كما ادت الزراعة المبكرةالى نقص فى طول النبات عند الحصاد وموقع اول فرع ثمرى، بينما لم يكن لمواعيد الزراعة تاثير معنوى على الافرع الثمرية على النبات ووزن اللوزة وعدد النباتات عند الحصاد فى كلا الموسمين.

٢- أدت رية المحاياة بعد اربع اسابيع من الزراعة الى زيادة معنوية فى طول النبات عند الحصاد وموقع اول فرع ثمرى وعدد الايام لتفتح اول لوزة فى كلا الموسمين ،بينما ادت رية المحاياة بعد ثلاث اسابيع من الزراعة الى زيادة معنوية فى عدد اللوز المتفتح على النبات ومحصول القطن الزهر للنبات وللفدان فى كلا الموسمين ، بينما لم يكن لميعاد رية المحاياة اى تاثير معنوى على عدد الافرع الثمرية على النبات وعدد الايام لتفتح اول زهرة ووزن اللوزة وعدد النباتات عند الحصاد فى كلا الموسمين .

٣- كان للتفاعل بين ميعاد الزراعة وميعاد رية المحاياة تاثير معنوى على كل من طول النبات عند الحصاد وموقع اول فرع ثمرى وعدد الايام لتفتح اول زهرة وعدد اللوز المتفتح على النبات ومحصول القطن الزهر للنبات وللفدان فى كلا الموسمين،بينما لم يكن للتفاعل تاثير معنوى على كل من عدد الافرع الثمرية على النبات وعدد الايام لتفتح اول لوزة وعدد النباتات عند الحصاد فى كلا الموسمين .

٤- وتوضح الدراسة ان زراعة صنف القطن جيزة ٩٠ مبكرا فى٢٥ مارس مع اعطاء رية المحاياة بعد ثلاث اسابيع من الزراعة تؤدى الى تحقيق افضل النتائج تحت ظروف الدراسة.

قام بتحكيم البحث

أ.د / عبد الرحيم عبد الرحيم ليله — **كلية الزراعة – جامعة المنصورة**
أ.د / وجدى محمد الشاذلى — **مركز البحوث الزراعية**