Table 2. Effect of foliar spray with zinc and boron on vegetative growth characteristics of strawberry plants during 2009 /2010 and 2010/2011 seasons

Treatments	Number of leaves/ plant		Leaf area (cm^2)		Fresh weight / plant (gm)		Dry weight / plant (gm)	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***							
0	5.49	5.42	90.12	94.61	36.38	38.77	8.38	8.02
150	6.73	6.66	118.01	114.15	50.72	50.56	9.34	9.75
200	6.42	6.56	113.43	113.38	50.69	50.18	9.20	9.34
LSD at 0.05 level	**0.17**	**0.21**	**3.94**	**2.03**	**2.77**	**2.38**	**0.71**	**0.59**
H_3BO_3 (mg/ l)	***Effect of boron***							
0	5.71	5.67	94.52	97.92	41.78	40.67	8.48	8.46
100	6.07	6.13	101.03	107.38	45.29	45.54	9.13	8.69
150	6.84	6.83	116.01	120.40	50.73	54.29	9.25	9.95
LSD at 0.05 level	**0.09**	**0.04**	**2.29**	**1.51**	**1.74**	**2.87**	**0.34**	**0.24**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 3: Effect of interaction between foliar spray with zinc and boron on vegetative growth characteristics of strawberry plants during of 2009 /2010 and 2010/2011 seasons.

Treatments		Number of leaves/ plant		Leaf area (cm^2)		Fresh weight / plant (gm)		Dry weight / plant (gm)	
		1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)								
0	0	5.41	5.27	88.28	91.10	33.58	35.81	7.72	7.48
	100	5.42	5.35	85.72	94.50	34.35	35.90	9.36	7.18
	150	5.63	5.67	96.37	98.23	41.23	44.57	7.77	9.40
150	0	6.19	6.18	98.54	104.00	44.38	42.35	8.83	8.54
	100	6.35	6.27	98.28	102.46	50.95	52.49	9.93	9.87
	150	7.63	7.50	127.27	136.00	56.87	56.85	9.45	10.84
200	0	5.52	5.57	96.77	98.67	47.37	43.85	8.89	9.35
	100	6.45	6.75	119.13	126.53	50.59	48.22	8.48	9.03
	150	7.27	7.35	124.45	126.97	54.13	51.47	9.27	9.33
LSD at 0.05 level		**0.15**	**0.07**	**3.97**	**2.621**	**3.02**	**4.95**	**0.59**	**0.42**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 4. Effect of foliar spray with zinc and boron on photosynthetic pigments in strawberry leaf tissues during of 2009 /2010 and 2010/2011 seasons

Treatments	Photosynthetic pigments (mg/gm FW)							
	Chlorophyll a		Chlorophyll b		Total Chl (a+b)		Carotenodes	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***							
0	180	174	60	63	240	237	177	172
150	224	223	77	79	301	302	289	288
200	213	219	73	74	286	293	286	279
LSD at 0.05 level	**1.2**	**2.6**	**2.9**	**2.1**	**5.5**	**4.0**	**5.1**	**3.2**
H_3BO_3 (mg/ l)	***Effect of boron***							
0	197	196	63	61	260	257	238	235
100	225	208	74	72	299	280	255	250
150	226	212	86	80	312	292	267	267
LSD at 0.05 level	**2.3**	**1.7**	**2.2**	**1.5**	**1.1**	**2.7**	**2.9**	**2.2**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 5: Effect of interaction between foliar spray with zinc and photosynthetic pigments in strawberry leaf tissues during of 2009 /2010 and 2010/2011 seasons

Treatments		Photosynthetic pigments (mg/gm FW)							
		Chlorophyll a		Chlorophyll b		Total Chl (a+b)		Carotenodes	
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
0	0	165	163	55	53	220	216	175	167
	100	198	188	59	56	257	244	175	171
	150	177	172	66	67	243	239	181	179
150	0	214	213	65	65	279	278	262	267
	100	222	218	71	74	297	292	288	280
	150	236	237	95	93	331	340	312	318
200	0	212	212	69	70	281	282	277	271
	100	254	218	78	77	312	235	301	300
	150	264	228	83	82	327	310	306	304
LSD at 0.05 level		3.9	3.1	3.5	2.5	1.9	4.6	5.0	3.8

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 6: Effect of foliar spray with zinc and boron on the chemical constituents in branch and fruits of strawberry at harvesting time during 2009 /2010 and 2010/2011 seasons

Treatments	Branches						Fruit					
	N		P		K		N		P		K	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***											
0	2.26	2.21	0.20	0.20	1.38	1.46	2.13	2.14	0.19	0.18	2.14	2.17
150	2.48	2.46	0.28	0.24	1.82	1.88	2.33	2.28	0.24	0.23	2.50	2.47
200	2.28	2.47	0.27	0.21	1.88	1.68	2.25	2.34	0.22	0.21	2.46	2.44
LSD at 0.05 level	**0.04**	**0.12**	**0.04**	**0.05**	**0.04**	**0.16**	**0.08**	**0.04**	**0.05**	**0.08**	**0.06**	**0.05**
H_3BO_3 (mg/ l)	***Effect of boron***											
0	2.17	2.25	0.20	0.20	1.43	1.47	2.15	2.21	0.20	0.20	2.26	2.27
100	2.86	2.36	0.22	0.22	1.56	1.68	2.24	2.25	0.21	0.21	2.34	2.33
150	2.62	2.49	0.23	0.29	1.88	1.87	2.34	2.30	0.23	0.22	2.49	2.49
LSD at 0.05 level	**0.03**	**0.74**	**0.006**	**0.015**	**0.03**	**0.17**	**0.06**	**0.05**	**0.06**	**0.005**	**0.05**	**0.03**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 7: Effect of interaction between foliar spray with zinc and boron on the chemical constituents in branch and fruits of strawberry at harvesting time during 2009 /2010 and 2010/2011 seasons

Treatments		Branches						Fruits					
		N		P		K		N		P		K	
		1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)												
0	0	2.14	2.20	0.15	0.14	1.35	1.41	2.13	2.14	0.18	0.17	2.07	2.08
	100	2.34	2.23	0.20	0.21	137	1.48	2.13	2.12	0.24	0.28	2.18	2.12
	150	2.32	2.21	0.21	0.22	1.45	1.50	2.17	2.15	0.29	0.24	2.24	2.32
150	0	2.14	2.03	0.21	0.24	1.46	1.49	2.12	2.10	0.23	0.29	2.67	2.34
	100	2.14	2.56	0.24	0.26	1.67	1.91	2.27	2.33	0.23	0.29	2.39	2.44
	150	3.15	2.62	0.25	0.24	2.24	2.23	2.60	2.41	0.25	0.24	2.73	2.64
200	0	2.06	2.51	0.20	0.20	1.47	1.51	2.27	2.38	0.22	0.29	2.42	2.39
	100	2.37	2.27	0.28	0.26	1.60	1.67	2.34	2.29	0.27	0.25	2.47	2.43
	150	2.40	2.64	0.27	0.23	1.97	1.87	2.22	2.34	0.23	0.22	2.50	2.57
LSD at 0.05 level		**0.05**	**0.12**	**0.04**	**0.02**	**0.05**	**0.29**	**0.10**	**0.13**	**0.14**	**0.09**	**N S**	**N S**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 8: Effect of foliar spray with zinc and boron on early yield and its components of strawberry plants during 2009 /2010 and 2010/2011 seasons

Treatments	Average fruit weight (g)		No. of fruit/ plant		Fruit yield plant (g)		Fruit yield / fed. (ton)	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***							
0	15.46	13.47	2.11	2.31	32.62	30.57	0.983	0.920
150	18.77	16.55	3.06	3.16	57.50	52.94	1.729	1.589
200	20.76	21.13	2.33	2.45	48.31	51.95	1.450	1.559
LSD at 0.05 level	**2.44**	**3.45**	**0.48**	**0.56**	**6.58**	**1.77**	**0.206**	**0.053**
H_3BO_3 (mg/ l)	***Effect of boron***							
0	16.56	15.87	2.22	2.35	38.93	39.26	1.172	1.179
100	17.13	17.01	2.44	2.52	40.73	39.61	1.224	1.191
150	20.31	18.28	2.84	3.05	58.76	56.60	1.767	1.559
LSD at 0.05 level	**3.41**	**1.67**	**0.50**	**0.30**	**0.88**	**0.12**	**0.262**	**0.038**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 9: Effect of interaction between foliar spray with zinc and boron on early yield and its components of strawberry plants during 2009 /2010 and 2010/2011 seasons

Treatments		Average fruit weight (g)		No. of fruit/ plant		Fruit yield plant (g)		Fruit yield / fed. (ton)	
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
0	0	14.70	12.26	2.00	1.90	29.40	28.93	0.883	0.870
	100	15.48	13.54	2.00	2.43	30.96	30.40	0.933	0.918
	150	16.23	13.62	2.33	2.60	37.50	32.40	1.133	0.972
150	0	16.56	13.54	2.33	2.73	38.36	34.96	1.160	1.051
	100	16.10	15.74	3.33	2.96	51.60	46.66	1.550	1.399
	150	23.66	22.36	3.53	3.80	82.53	77.20	2.477	2.315
200	0	21.43	19.22	2.33	2.43	49.03	53.90	1.470	1.616
	100	19.81	20.34	2.00	2.16	39.63	41.76	1.190	1.254
	150	21.04	21.85	2.66	2.76	56.26	60.20	1.690	1.807
LSD at 0.05 level		**5.92**	**2.89**	**N S**	**N S**	**1.53**	**0.21**	**0.454**	**0.066**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 10: Effect of foliar spray with zinc and boron on total yield and its components of strawberry plants during 2009 /2010 and 2010/2011 seasons

Treatments	Average fruit weight (g)		No. of fruit/ plant		Fruit yield plant (g)		Fruit yield / fed. (ton)	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***							
0	17.21	17.01	11.33	11.03	195.67	188.32	5.870	5.650
150	20.88	21.01	14.12	13.89	296.91	293.59	8.908	8.808
200	20.59	20.47	13.13	12.92	271.11	264.96	8.134	7.949
LSD at 0.05 level	**0.40**	**0.56**	**0.47**	**0.48**	**7.45**	**14.80**	**0.224**	**0.443**
H_3BO_3 (mg/ l)	***Effect of boron***							
0	18.58	18.60	11.81	11.71	221.14	220.02	6.634	6.601
100	19.10	18.97	12.63	12.31	242.41	234.71	7.273	7.042
150	21.00	20.91	14.12	13.82	300.15	292.13	9.005	8.764
LSD at 0.05 level	**0.54**	**0.29**	**0.40**	**0.32**	**10.74**	**7.09**	**0.322**	**0.263**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 11: Effect of interaction between foliar spray with zinc and boron on total yield and its components of strawberry plants during 2009 /2010 and 2010/2011 seasons

Treatments		Average fruit weight (g)		No. of fruit/ plant		Fruit yield plant (g)		Fruit yield / fed. (ton)	
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
0	0	16.16	16.06	10.50	10.06	169.86	161.73	5.096	4.852
	100	17.26	17.10	11.26	10.83	194.48	185.21	5.835	5.557
	150	18.20	17.86	12.23	12.20	222.67	218.01	6.680	6.541
150	0	19.96	20.16	13.16	12.93	262.93	260.90	7.888	7.827
	100	19.20	19.20	13.46	13.33	258.66	255.94	7.760	7.679
	150	23.46	23.63	15.73	15.40	369.15	363.90	11.075	10.917
200	0	19.60	19.56	11.76	12.13	230.63	237.41	6.919	7.122
	100	20.83	20.60	13.16	12.76	274.07	262.99	8.223	7.890
	150	21.33	21.23	14.46	13.86	308.62	294.47	9.259	8.834
LSD at 0.05 level		**0.95**	**0.52**	**N S**	**0.56**	**18.61**	**12.287**	**0.558**	**0.455**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 12 : Effect of foliar spray with zinc and boron on fruit quality at harvest time of strawberry during 2009 /2010 and 2010/2011 seasons

Treatments	Vitamin C (mg/100 juice)		TSS %		Reducing sugar (%)		Total sugar (%)		Acidity (mg/ (100 ml juice)	
	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	***Effect of zinc***									
0	36.78	34.74	9.944	9.81	6.67	6.67	11.47	11.68	0.65	0.64
150	44.33	43.71	11.42	11.56	8.80	8.42	13.83	13.59	0.81	0.82
200	42.38	41.34	11.13	11.27	8.46	8.20	13.96	13.63	0.76	0.71
LSD at 0.05 level	**1.51**	**2.64**	**0.57**	**0.38**	**0.84**	**0.24**	**0.52**	**0.51**	**0.04**	**0.04**
H_3BO_3 (mg/ l)	***Effect of boron***									
0	37.67	36.87	10.18	10.17	7.98	6.96	12.02	12.10	0.65	0.62
100	40.49	39.74	10.80	10.78	8.84	7.69	13.03	13.10	0.79	0.87
150	45.14	42.69	11.52	11.89	8.13	7.20	14.21	13.71	0.70	0.68
LSD at 0.05 level	**1.34**	**1.65**	**0.39**	**0.29**	**0.85**	**0.31**	**0.25**	**0.43**	**0.04**	**0.04**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011

Table 13: Effect of interaction between foliar spray with zinc and boron on fruit quality at harvest time of strawberry during of 2009 /2010 and 2010/2011 seasons

Treatments		Vitamin C (mg/100 juice)		TSS %		Reducing sugar (%)		Total sugar (%)		Acidity (mg/ (100 ml juice)	
		1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season	1st Season	2nd Season
$ZnSO_4$ (mg/l)	H_3BO_3 (mg/ l)										
0	0	35.46	33.38	9.00	9.23	6.36	6.30	10.03	11.20	0.65	0.67
	100	36.87	33.67	10.13	9.63	6.73	6.80	11.63	11.93	0.74	0.71
	150	38.02	37.23	10.70	10.56	6.93	6.90	11.97	11.94	0.67	0.64
150	0	38.42	36.76	10.90	11.20	7.50	7.33	12.26	12.16	0.61	0.61
	100	41.61	41.94	11.13	11.16	8.70	8.13	13.26	13.43	0.82	0.82
	150	52.96	43.57	12.23	12.30	8.20	7.80	15.96	15.16	0.62	0.63
200	0	39.01	40.45	10.63	11.41	8.50	7.23	12.97	12.93	0.69	0.70
	100	42.74	41.60	11.13	11.23	9.40	8.13	14.20	13.93	0.70	0.67
	150	45.25	42.05	11.63	11.00	9.85	9.23	14.70	14.03	0.73	0.68
LSD at 0.05 level		**2.31**	**2.77**	**0.67**	**0.51**	**N. S**	**N. S**	**0.44**	**0.73**	**0.07**	**0.08**

1st Season : First season 2009/2010, 2nd Season : Second season 2010/2011