RESULTS AND DISCUSSION

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IV-I- Effect of salt concentrations and sodium adsorption ratio (S.A.R.) in irrigation water on growth measurements of Gizi and Sultani fig CVS :

The data in tables (2,3,4 and 5) and Fig. (1) show that the vegetative growth measurements expressed as stem length , increase in stem length percent , number of leaves and leaf area in response to four salinity concentrations (2000,4000,6000,8000 PPM.) combined with 2 S.A.R. levels (6 & 12) in irrigation water applied on Gizi and Sultani fig plants.

1. a) Effect on stem length and the increase in stem length :-

Data concerning the specific effect of both salt concentration and S.A.R. on stem length and increase in stem length percent as well as the specific response of Fig C.V.S. fig Sultani are presented in table (2)

Generally the data indicated that the depression in stem length and increment percent in stem length were closely associated with increasing salt concentration in irrigation water as compared with control . Moreover , all salt concentration, except 2000 p.p.m. in the 1st. season , significantly depressed stem elongation. such decrease was more remarkable with the higher concentration. In this connection , the findings of **Barakat et.al.(1982)** on Guava and Olive disclosed that the depressing effect of salts was ponded to the type of salt. These results are in coincide with the finding of **Hayward and Long (1942)** found that the total concentration of salts was a major factor in the general growth depression on Peach. **Hayward and Spurr(1943)** concluded that the increase in osmotic pressure

of saline soil solution tended to restrict the uptake of water by roots on Corn.

Wilcox et. al. (1951) mentioned that salinity of soil solution may affect growth of plants in two ways : 1st. the osmotic pressure of the solution may be high enough to limit the availability of water to the plant . or 2 nd. high concentration of salts in the solution may facilitate the uptake of one or more of the presentions so that an accumulation may result and cause a derangement of the normal metabolism of the plant.

Brown dt. al. (1953)noticed a differential response to specific salts which appeared to be more important than the effect of the osmotic pressure of the solution on stone fruit. Moreover , **Pokroveskay** (1954) and (1957) found that in glycophgtes both call division and cell elongation were inhibited with increased salinity .

In addition , **Makhija** et. al. (1980) found that rising salinity levels (above 7.5 mmhos/Cm conductivity of saturation extract) causing growth reduction on Guava seedlings. They found that accumulation of $\overline{CL}$ and Na in toxic concentration in plant tissues and nutrient imbalance were the main effects of salinity. Recently , **Behairy** et. al. (1984) on thompson seedless and american grape plants and **Khamis** et. al. (1984) on Guava and Olive seedlings , they found that stem length was depressed by salinity concentrations.

Increasing sodium adsorption ratio (S.A.R.) from 6 to 12 in irrigation water was not effective significantly for both stem length and stem increment. In this respect : **EL-Deen** et. al.

(1979) on Olive seedlings , **Behairy** et. al. **(1984)** on Thompson seedless and American grape , **Khamis** et. al. **(1984)** on Guava and Olive seedlings and **Abd-El-Aziz** et. al. **(1985)** on some citrus rootstock seedlings , they found that increasing sodium adsorption ratio (S.A.R.) resulted in significant reduction of plant height.

Regarding the response of two fig cultivars , it is quite clear from the present data that increase % in stem length in Sultani cultivar was significantly higher than Gizi cultivar in both first and second season while both two cultivars are showed the same response as the stem length was concerned.

Concerning the effect of interaction between (salt concentrations X sodium adsorption ratio (S.A.R.)) on stem length and the percentage of the imcrease in stem length , it is clear from table (3) that the values were significantly decreased by using all saline solutions except in 1st. season at 2000 p.p.m. with both S.A.R. 6 and S.A.R. 12 whereas the decrease in stem length was slight as compared with the control treatment. Moreover , the maximum reduction in stem length was obvious at the highest salt concentration with the highest level of S.A.R. during 1986 and 1987 seasons. The same finding were obtained by **Abd-El-Aziz** et. al.**(1985)** on some citrus seedlings and **Kabeel (1985)** on Grape , Peach and Plum seedlings.

With respect to, interaction between cultivar X concentration levels , data in table (4) showed a significant decrease in both stem length and increment % in stem length with

both Fig C.V.S.: except in Gizi at 2000 PPM. since the decrease in the increment % was not significant as compared with the control during the study. Moreover , the interaction between cultivar X S.A.R. on stem length and the increase percentage in stem length , it is clearer from table (4) that the depressing effect was generally lower in Gizi variety than with Sultani cultivar .

Data concerning the effect of interaction between culture X concentration X S.A.R. on stem length and growth rate of Gizi and Sultani fig cultivars are presented in table (5). Generally , the data indicated that the stem length and its increase percentage of the irrigated plants with saline solutions were significant depressed as compared with control in both Gizi and Sultani fig cultivars during the study.

1.b) Effect on number of leaves per plant :-

The data reported in table (2) show the specific effect of saline concentrations, S.A.R. and cultivar on leaf formation. It is quite obvious that salinity had a great deleterious effect on leaf number / plant. Moreover , it was decreased significantly by using different saline solutions as compared with those of tap water (control treatment) during 1986 and 1987 seasons. Such decrease was more remarkable with the higher concentration. Similar observations were also found by **Hassan (1974)** on some vegetable crops; **Pandy and Divate (1976)** on grapevine ; **El-Deen et. al. (1979)** on Olive seedlings and **Sweidan et. al. (1982)** on Apricot.

Increasing sodium adsorption ratio (S.A.R.) from 6 to 12 in irrigation water caused a significant decrease in number of leaves / plant during the study. This results are in confirmity with the finding of **El-Deen et. al. (1979)**. They found that increasing sodium adsorption ratio (S.A.R.) in irrigation water resulted in significant reduction of number of leaves of Olive seedlings.

With respect to the effect of fig cultivars, it is quite clear from the present data that number of leaves / plant of the Sultani fig cultivar was significantly lower than Gizi fig cultivar during 1986 and 1987 seasons.

Concerning the effect of the interaction between salt concentration X S.A.R. on the number of leaves/plant. It is obvious from table (3) that a decrease effect was significantly detected with all saline concentrations either at S.A.R. 6 or 12 as compared to control during the study . Moreover the maximum reduction in number of leaves / plant was obvious at the highest salt concentration with the highest level of S.A.R.The decrease in number of leaves / plant has often been observed by **Kabeel (1985)** on Grape , Peach and Plum seedlings.

With respect to the effect of the interaction between cultivar X concentrations on mumber of leaves / plant , it is obvious from table (4) that a significant decrease was noticed with both cultivars irrigated by any concentration of saline solution as compared to the control in both Gizi and Sultani fig cultivars during the two seasons of study .

Moreover , the effect of interaction between cultivar X

S.A.R. , it is quite clear from table (4) Gizi CV. produced significantly a higher number of leaves / plant than Sultani CV. as compared plant received the same S.A.R. level of both C.V.S. during the study .

The data reported in table (5) disclosed the effect of the interaction between cultivar X concentration X S.A.R. on leaf number / plant. It is quite obvious that number of leaves / plant was decreased significantly in response to any of the saline solution treatments used as compared with those of the control in both Gizi and Sultani Fig C.V.S. during the study.

1.c) Effect on leaf area :-

The average leaf area per plant of both Gizi and Sultani fig cultivar are presented in table (2). The data showed that leaf area recorded an obvious reduction with increasing salinity level in the irrigation water. Such reduction was significantly confirmed and was more remarkable with the higher concentration.

Nieman (1965) concluded that the number of cells per unit leaf area (Phoseoulus vulgaris L.) tended to remain constant throughout most of the growth period in both the control and the salt stunted leaves. In addition , similar results were pointed out by **Pandy and Divate (1976)** on grapevines.

Increasing sodium adsorption ratio (S.A.R.) from 6 to 12 in saline irrigation water significantly decreased leaf area. In addition ; the response of two fig cultivars. It is quite clear from the present data that leaf area in Sultani fig cultivar was significantly higher than Gizi fig cultivar during the study.

Concerning the effect of interaction between salt concentrations X S.A.R. and cultivar X concentration on leaf area , it is quite clear from tables (3 and 4) that the leaf area was signigicantly reduced for Fig plants irrigated with saline water during the two seasons of study. Moreover ,regarding the effect of interaction between cultivar X S.A.R. on leaf area, it is clear from table (4) that the reduction in leaf area resulted from increasing S.A.R from 6 to 12 was more pronounced with Sultani fig variety as compared to Gizi fig variety during both 1986 and 1987 seasons.

Data concerning the effect of interaction between cultivar X concentration X S.A.R. on leaf area are presented in table (5). The data indicated that leaf area was significantly depressed by any of the saline solutions used as compared with control in both two seasons of study.

* * * * * * * * * * * * * * * * * *

Table (2) : Specific effect of concentration , S.A.R. and cultivar on some vegetative measurements of two Fig cultivar during 1986 & 1987 seasons.

Treatments	Stem length		Average	Increase in stem length %		Average	No. of leaves		Average	Leaf area		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
C O N C E N T R A T I O N												
Control.(tap water)	38.08	42.30	40.19	77.74	55.57	66.65	9.75	11.08	10.41	298.33	236.33	267.33
2000 P.P.M.	36.01	32.32	34.16	77.16	52.33	64.74	7.53	7.99	7.61	146.24	166.24	156.24
4000 P.P.M.	30.67	25.85	28.26	46.58	21.91	34.24	1.61	5.83	3.72	136.33	95.41	115.87
6000 P.P.M.	28.88	25.40	27.14	42.91	15.49	29.20	1.81	3.58	2.69	124.66	94.41	109.53
8000 P.P.M.	24.92	23.91	24.41	18.66	12.49	15.57	1.33	3.00	2.16	102.41	89.33	95.87
L.S.D. at 5 %	2.39	5.10		5.12	6.17		1.09	1.63		39.27	26.52	
at 1 %	3.21	6.82		7.84	8.53		1.45	2.18		52.54	35.48	
S . A . R .												
S.A.R. 6	31.53	30.11	30.52	50.69	33.96	42.32	4.51	6.51	5.51	169.63	140.49	155.06
S.A.R. 12	31.91	29.80	30.85	54.53	29.16	41.84	3.85	5.44	4.64	153.56	132.09	142.82
L.S.D. at 5 %	N.S	N.S	---	N.S	N.S		0.60	1.03		2.84	1.67	
at 1 %	---	---		---	---		0.90	1.38		3.32	2.24	
CULTIVAR												
Gizi .	30.08	30.38	30.23	43.79	24.56	34.17	5.09	7.97	6.53	123.16	105.73	114.44
Sultani.	30.36	29.95	29.95	56.49	33.22	44.82	3.60	4.63	4.11	200.03	166.96	183.49
L.S.D. at 5 %	N.S.	N.S.		12.30	7.06		0.66	1.03		24.83	16.77	
at 1 %	---	---		17.27	9.44		0.92	1.38		33.23	22.44	

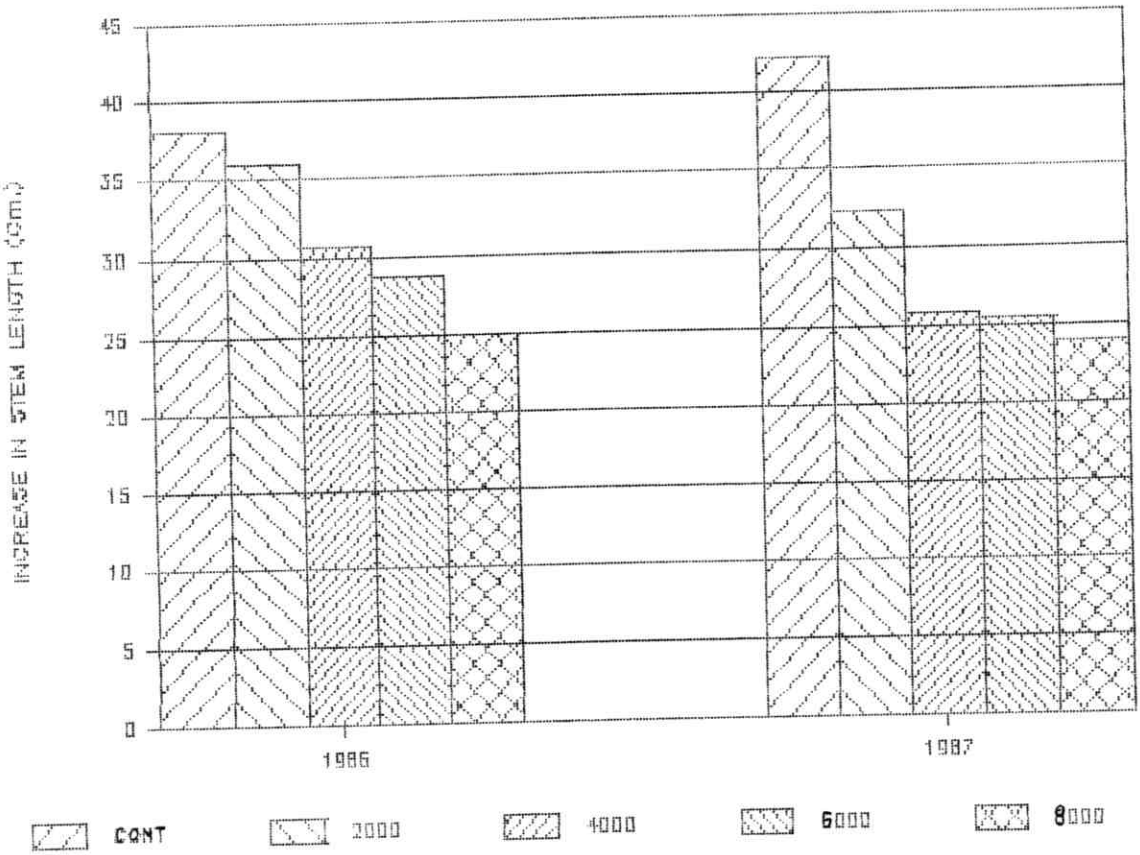

Fig. (1) : Effect of different salt concentrations on the increase in stem length percentage of Fig plants in both seasons 1986 - 1987 .

Table (3) : Effect of interaction between concentration X S.A.R. in irrigation water on some vegetative measurements of two fig cultivars during 1986 & 1987 seasons.

Treatments	Stem length		Average	Increase in stem length %		Average	No. of leaves		Average	Leaf area		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
					Concentration X S.A.R.							
Control (tap water)	38.08	42.30	40.19	82.66	68.16	75.41	9.75	11.08	10.41	298.30	236.30	267.30
2000 P.P.M S.A.R. 6	37.34	33.70	35.53	77.16	52.33	64.74	7.84	8.18	8.01	151.80	170.10	160.95
2000 P.P.M S.A.R.12	34.68	30.91	32.79	72.83	42.99	57.91	6.63	7.81	7.22	140.60	126.30	133.45
4000 P.P.M. S.A.R. 6	31.03	27.40	29.21	49.50	24.83	37.16	1.99	6.24	4.11	144.80	116.50	130.65
4000 P.P.M. S.A.R.12	30.31	26.96	28.63	45.33	18.99	32.16	1.66	5.44	3.55	127.80	103.60	115.70
6000 P.P.M. S.A.R. 6	29.18	24.74	26.66	43.66	16.66	30.16	1.63	3.66	2.64	131.80	102.60	108.15
6000 P.P.M. S.A.R.12	28.58	24.14	26.36	40.49	15.99	28.24	1.56	3.51	2.53	117.50	84.80	101.15
8000 P.P.M. S.A.R. 6	25.15	23.69	24.42	19.33	14.33	16.83	1.41	3.14	2.27	121.30	75.80	98.55
8000 P.P.M. S.A.R.12	24.70	23.41	24.05	17.99	8.99	13.49	1.25	2.86	2.05	83.49	74.30	78.89
L.S.D. at 5 %	4.15	6.74		3.83	5.76		0.79	1.78		43.02	29.05	
at 1 %	5.65	7.59		5.01	6.12		1.10	2.39		57.50	38.87	

Table (4) : Effect of interaction between (cultivar X concentration) and (cultivar X S.A.R.) in irrigation water on some vegetative measurements of two fig cultivars during 1986 & 1987 seasons.

Treatments		Stem length		Average	Increase in stem length %		Average	No. of leaves		Average	Leaf area		Average
		1986	1987		1986	1987		1986	1987		1986	1987	
					Cultivar X concentration								
GIZI	Control (tap water)	40.43	45.20	42.81	79.00	61.00	70.00	11.20	14.53	12.86	218.33	185.33	201.83
	2000 P.P.M.	31.78	31.46	31.62	62.50	48.16	55.33	8.90	10.58	9.74	105.00	119.33	112.16
	4000 P.P.M.	27.08	26.91	26.99	29.66	27.66	28.66	2.15	7.18	4.66	106.00	74.33	90.16
	6000 P.P.M.	26.56	24.80	25.68	28.66	15.83	22.24	1.83	4.21	3.02	100.66	70.33	85.49
	8000 P.P.M.	24.56	23.53	24.04	19.83	13.50	16.66	1.41	3.36	2.38	85.83	79.33	82.58
SULTANI	Control (tap water)	40.25	39.40	39.82	78.00	43.66	60.83	8.30	7.63	7.96	378.33	287.33	332.83
	2000 P.P.M.	35.73	33.18	34.45	75.33	36.33	55.83	5.58	5.41	5.49	187.50	213.16	200.33
	4000 P.P.M.	34.26	26.01	30.13	57.16	16.16	36.66	1.08	4.51	2.79	166.66	116.50	141.58
	6000 P.P.M.	31.21	24.80	28.00	54.16	16.16	35.16	1.80	2.96	2.38	148.66	118.50	133.58
	8000 P.P.M.	25.35	24.31	24.83	17.50	11.50	14.50	1.25	2.65	1.95	119.00	99.33	109.16
	L.S.D. at 5 %	4.15	5.74		3.83	5.76		1.19	1.78		43.02	29.05	
	at 1 %	5.65	7.59		5.01	6.12		1.59	2.39		57.50	38.87	
					Cultivar X S. A. R.								
GIZI	S.A.R. 6	31.06	30.46	30.76	47.73	34.00	40.86	5.46	8.18	6.82	126.40	112.73	119.56
	S.A.R. 12	29.11	30.30	29.70	43.86	32.66	38.26	4.73	7.76	6.24	119.93	98.73	109.33
SULTANI	S.A.R. 6	33.96	29.92	31.94	61.33	25.66	43.49	3.56	4.68	4.12	212.86	168.33	190.59
	S.A.R. 12	32.76	29.16	30.96	57.53	23.46	40.49	3.64	4.58	4.11	187.20	99.96	143.58
	L.S.D. at 5 %	4.15	5.58		4.86	4.25		1.59	1.99		22.15	18.14	
	at 1 %	5.56	7.47		6.38	6.15		1.88	2.38		28.12	23.80	

Table (5) : Effect of interaction between cultivar X concentration X S.A.R. in irrigation water on some vegetative measurements of two Fig cultivars during 1986 - 1987 seasons.

Treatments		Stem length		Average	Increase in stem length %		Average	No. of leaves		Average	Leaf area		Average
		1986	1987		1986	1987		1986	1987		1986	1987	
Cultivar X concentration X S. A. R.													
GIZI	Control (tap water)	40.43	45.20	42.81	79.00	61.00	70.00	11.20	14.53	12.86	218.30	185.30	210.80
	2000 P.P.M. S.A.R. 6	32.63	32.96	32.79	67.66	52.66	59.50	10.16	10.73	10.44	110.00	133.00	121.50
	2000 P.P.M. S.A.R.12	30.93	29.96	30.44	57.33	44.66	50.99	7.63	10.43	9.03	105.60	105.60	105.60
	4000 P.P.M. S.A.R. 6	28.46	28.20	28.33	32.00	27.66	29.83	2.33	7.73	5.03	104.30	96.00	100.15
	4000 P.P.M. S.A.R.12	27.43	27.30	27.36	30.06	27.66	28.83	2.16	6.63	4.39	102.30	88.30	95.30
	6000 P.P.M. S.A.R. 6	26.73	25.63	26.18	27.33	19.00	23.16	1.96	4.40	3.18	102.00	79.00	90.50
	6000 P.P.M. S.A.R.12	26.33	24.19	25.26	26.00	17.66	21.83	1.83	4.03	2.93	99.00	70.00	84.50
	8000 P.P.M. S.A.R. 6	24.66	22.86	23.76	20.33	12.66	20.99	1.50	3.53	2.51	97.00	69.00	83.30
	8000 P.P.M. S.A.R.12	22.80	22.30	22.55	19.33	9.33	14.33	1.00	3.20	2.10	74.00	44.60	59.60
SULTANI	Control (tap water)	42.06	39.40	40.73	88.00	43.66	65.83	8.30	7.63	7.96	278.30	287.30	282.80
	2000 P.P.M. S.A.R. 6	36.43	34.50	35.46	75.33	39.33	57.33	5.63	5.63	5.63	199.30	219.00	209.15
	2000 P.P.M. S.A.R.12	35.73	31.86	33.79	68.00	33.33	50.66	5.53	5.20	5.36	179.60	207.30	193.45
	4000 P.P.M. S.A.R. 6	35.33	27.50	31.41	61.33	22.00	41.66	1.83	4.76	3.29	175.60	154.00	164.80
	4000 P.P.M. S.A.R.12	33.70	75.73	29.71	60.66	20.66	40.66	1.83	4.26	3.04	161.31	125.00	143.15
	6000 P.P.M. S.A.R. 6	33.20	25.43	29.31	53.66	14.33	33.99	1.76	3.53	2.64	153.60	117.00	135.30
	6000 P.P.M. S.A.R.12	28.73	24.53	26.63	47.00	10.33	28.66	1.63	3.30	2.46	145.60	111.30	128.45
	8000 P.P.M. S.A.R. 6	26.60	23.86	25.23	19.33	9.66	14.49	1.50	2.63	2.06	136.00	81.60	108.80
	8000 P.P.M. S.A.R.12	24.10	23.19	33.64	15.66	8.66	12.16	1.00	2.53	1.76	92.30	79.00	85.65
L.S.D. at 5 %		6.18	4.58		7.18	3.63		0.15	0.38		38.06	24.15	
at 1 %		8.33	6.79		9.24	5.27		0.21	0.43		48.12	32.80	

2- Effect of salt concentrations and sodium adsorption ratio (S.A.R.) in irriagtion water on the dry weight of plant organs and top/root ratio :-

Data concerning the effect of salt concentrations on the dry weight of plant organs (leaves , shoots , roots and total plant dry weight) are found in table (6) and figs (2 and 3). It is quite clear that the plant organs dry weight were gradually decreased by increasing the level of salinity. The greatest loss in the dry weight of plant organs was noticed at the highest level salt concentrations. Such results appeared to agree with those obtained by **Rokba** et. al. **(1978)** on some citrus rootsocks ; **Behairy** et. al. **(1984)**on thompson and American Grape plants ,**Khamis** et. al. **(1984)** on Guava and Olive seedlings ; **Abd-El-Aziz** et. al.**(1985)** on some citrus rootstocks , **Gasser (1986)** on avocado and **El-Hawary (1987)** on Grape , all they found that the dry weight of plant organs was decreased gradually by increasing the level of salinity in the irrigation water. Such decrease in the plant dry weight , under stress of salinity , may be due to the physiological hunger **(Russell , 1961)**.

With respect to the increasing sodium adsorption ratio (S.A.R.) from 6 to 12 in irrigation water , it is noticed from the obtained data that the dry weight of the S.A.R. 12 was lower than that of S.A.R. 6 ; and this effect was statistically confirmed by increasing the level of S.A.R. . This result is in agreement with that reported by **Khamis** et. al.**(1984)** on Guava and Olive seedlings ; and **Behairy** et. al.**(1984)** on thompson and American Grape plants.

Regarding the specific response of the studied cultivars, it is noticable from the obtained data that Gizi cultivar , for being to the more resistant to S.A.R. produced the highest total plant dry weight as compared to Sultani cultivar during the two seasons of study.

Concerning the effect of the interaction between both concentrations X S.A.R. and cultivar X concentration X S.A.R. on the dry weight of plant organs (leaves , stems , roots and total plant dry weights) are presented in tables(7)and(9)). It is quite clear that the plant dry weights gradually decreased by increasing both levels of salinity and S.A.R. The effect was significantly decreased during the two seasons of study .

The effect of interaction between cultivar X salt concentration on the dry weight of plant organs (leaves , stems , roots and total plant dry weight) , it is quite clear from table (8) that the depressing effect of increasing salinity concentration was significantly decreased as compared with the control in both two fig cultivars during 1986 and 1987 seasons.

In addition to that , interaction between cultivar X sodium adsorption ratio (S.A.R.) , it is obvious from table (8) leaves and total plant dry weight was significantly decreased in both Sultani S.A.R. 6 and S.A.R. 12 as compared to Gizi S.A.R. 6 and S.A.R. 12 , while it was the countrary in stem and root dry weight during the study.

Data from table (6) clear that top/root ratio gradually decreased significantly with the increase of salt concentrations.

The decrease in top / root ratio with increasing salinity has often been observed by **Eaton (1942)** on different plant species , **Bernstein and Pearson (1954)** on Tomato and Pepper plants , **Behairy et. al.(1984)** on Guava and Olive seedlings and **Kabeel (1985)** on Grape , Peach and Grape plants.

With respect to the specific effect of S.A.R. on top\ root ratio Table (6) shows that the ratio was decreased in response to increasing the S.A.R. level . Such decrease was significant in the second season only.

These results are in harmony with the findings of **Khamis et. al.(1984)** on Guava and Olive seedlings and **Kabeel (1985)** on Grape Peach and Plum plants.

Regarding the response of two fig cultivars , it is quite clear from the present data that top / root ratio in Sultani cultivar was significantly lower below Gizi fig cultivar during the two seasons of study.

Concerning the effect of interaction between salt concentration X S.A.R. , cultivar X concentration on top / root ratio , it is quite clear from tables (7 and 8) that the effect was significantly reduce during the two seasons of study. Moreover , the effect of interaction between cultivar X S.A.R. on top / root ratio , it is clear from table (8) that top / root ratio in Sultani fig cultivar either at (6) or (12) level of S.A.R. was significantly lower than those of Gizi fig variety especialy when both cultivars of the same S.A.R. level were compared each to other.

Data concerning the effect of interaction between cultivar X concentration X S.A.R. on top / root ratio are presented in tables (9). The data indicates that top / root ratio was significantly decrease as compared with the control in both cultivar during the study.

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Table (6) Specific effect of concentration , S. A. R. & cultivar on the dry weight of plant oragns and top / root ratio of two Fig cultivars during 1986 & 1987 seasons.

Treatments	LEAVES		Average	STEM		Average	ROOTS		Average	Total plant		Average	TOP/ ROOT RATIO		Average
	1986	1987		1986	1987		1986	1987		1986	1987		1986	1987	
CONCENTRATION															
Control (tap water)	37.87	63.02	50.44	12.21	15.06	13.63	12.78	19.99	16.38	62.86	98.08	80.47	3.92	4.02	3.97
2000 P.P.M.	14.14	23.57	18.85	10.30	8.17	9.23	10.90	11.96	11.43	35.35	43.55	39.45	2.25	2.81	2.53
4000 P.P.M.	2.73	12.33	7.53	9.02	6.34	7.68	9.13	9.24	9.18	20.70	27.35	24.02	1.25	2.04	1.64
6000 P.P.M.	1.45	5.48	3.46	6.02	4.45	5.23	7.83	8.60	8.21	15.92	18.56	17.24	1.04	1.12	1.08
8000 P.P.M.	0.62	3.58	2.10	4.07	2.51	3.29	5.52	6.80	6.16	10.57	12.54	11.55	0.90	0.85	0.87
L.S.D. at 5 %	0.47	0.36		0.20	0.48		0.29	0.68		1.05	4.27		0.42	0.19	
at 1 %	0.62	0.51		0.27	0.65		0.39	0.91		1.41	5.98		0.51	0.28	
S. A. R.															
S.A.R. 6	12.10	22.63	17.36	8.76	7.81	8.28	9.62	11.57	10.59	30.51	41.79	36.15	1.04	2.92	1.66
S.A.R. 12	10.62	20.55	15.58	8.25	6.82	7.53	8.84	11.06	9.95	27.64	38.09	32.86	1.02	2.04	1.53
L.S.D. 5 %	0.27	0.16		0.12	0.30		0.18	0.04		0.66	0.28		0.09	0.13	
1 %	0.36	0.22		0.17	0.41		0.27	0.06		0.89	0.37		0.12	0.18	
CULTIVAR															
Gizi	12.15	25.48	18.81	8.21	7.52	7.86	8.80	10.52	9.66	29.23	43.09	36.16	2.00	2.68	1.66
Sultani	10.57	17.71	14.14	8.83	7.11	7.97	9.60	12.11	10.85	29.53	36.94	33.23	1.70	1.66	1.53
L.S.D. at 5 %	0.27	0.16		0.12	0.30		0.18	0.04		0.66	0.28		0.09	0.13	
at 1 %	0.36	0.22		0.17	0.41		0.27	0.06		0.89	0.37		0.12	0.18	

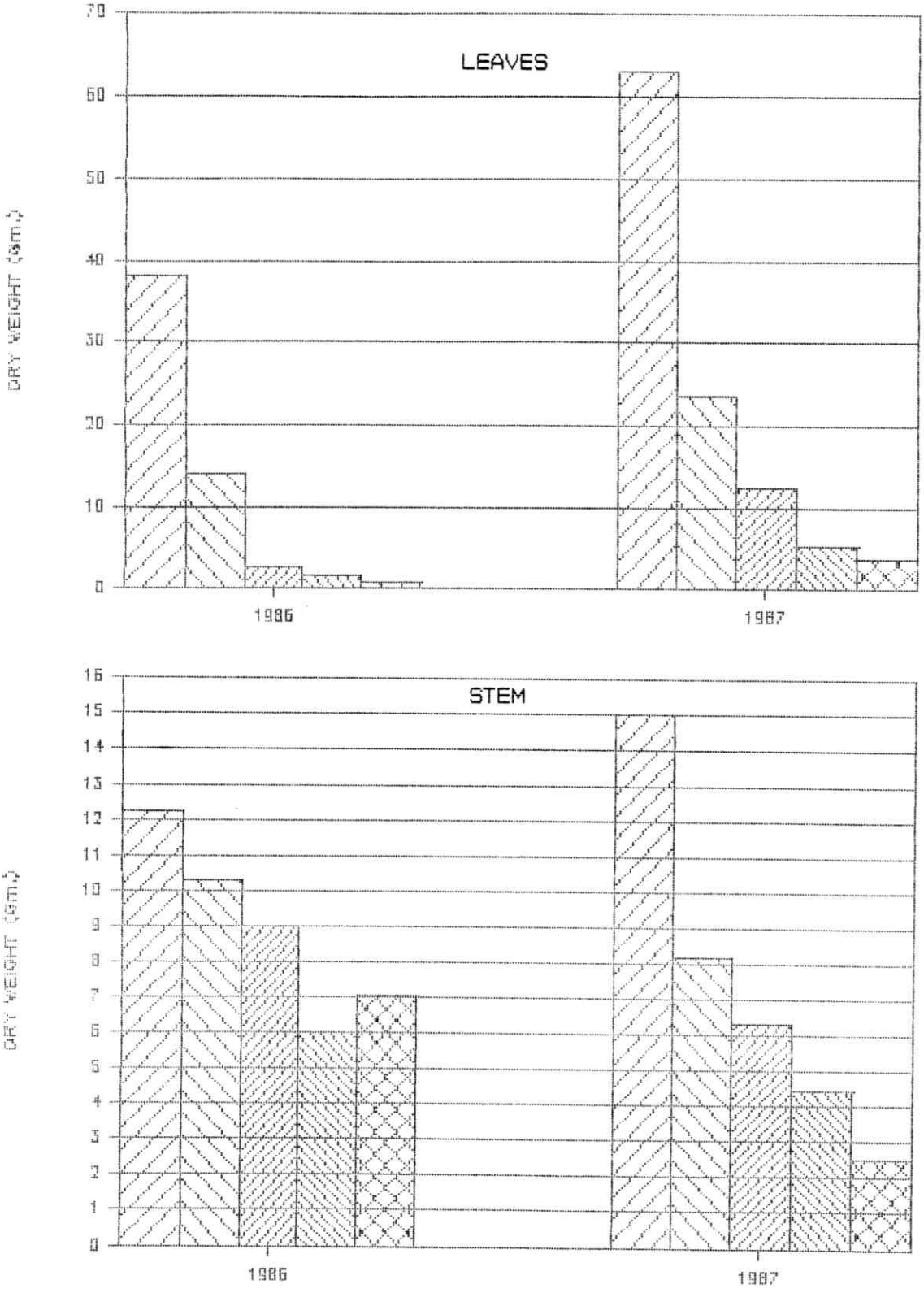

Fig. (2) : Effect of different salt concentrations on leaves and stem dry weight (Gms.) of Fig plants in both seasons (1986 & 1987)

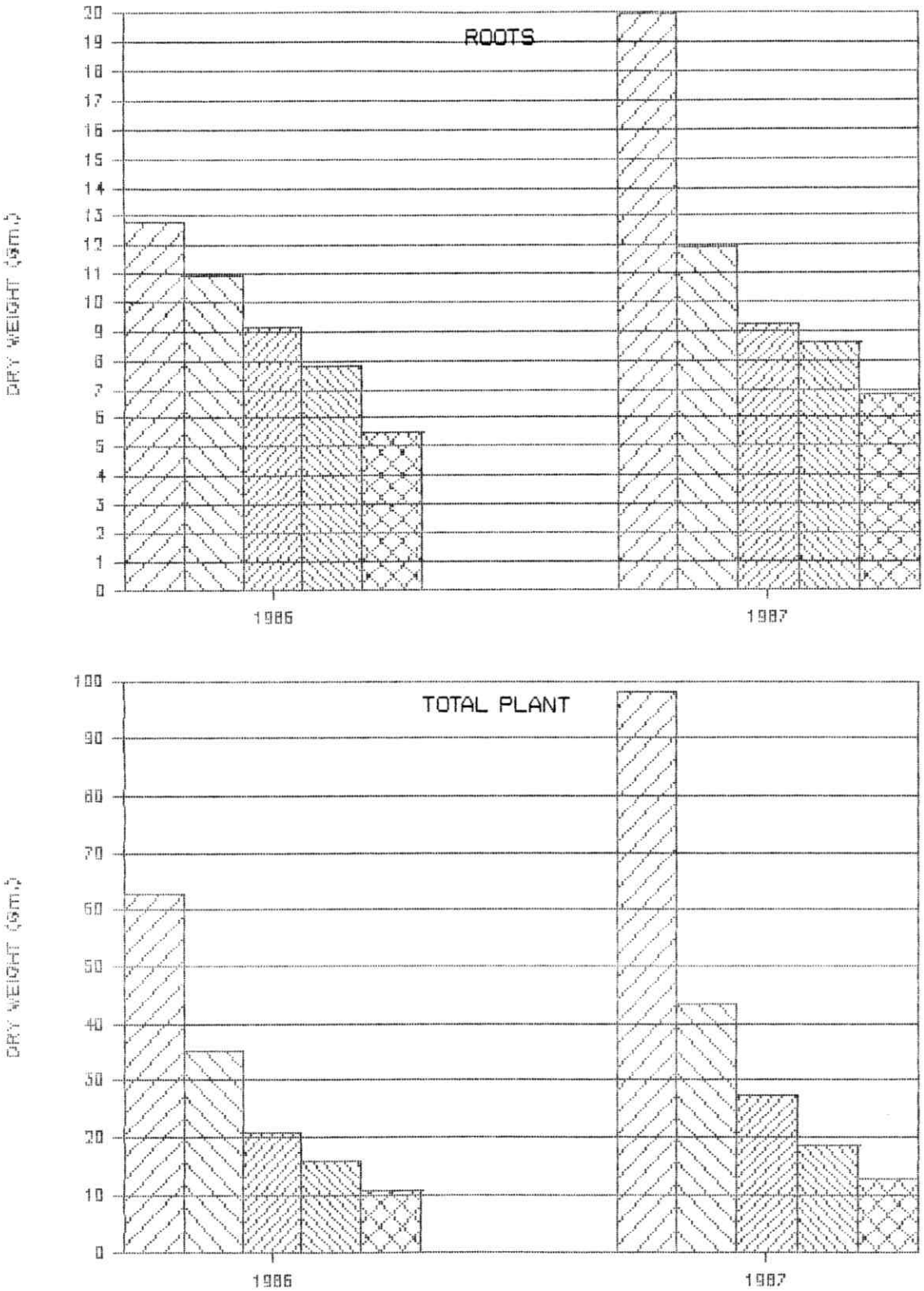

Fig. (3) : Effect of different salt concentrations on roots and total plant dry weight (Gm$) of Fig plants in both seasons (1986 & 1987)

Table (7) : Effect of interaction between concentration X S.A.R. in irrigation water on the dry weight of plant organs and top / root ratio of two fig cultivars during 1986 & 1987 seasons.

Treatments	L E A V E S (gm)		Average	S T E M (gm)		Average	R O O T S (gm)		Average	Total plant (gm		Average	TOP/ ROOT RATIO		Average
	1986	1987		1986	1987		1986	1987		1986	1987		1986	1987	
C O N C E N T R A T I O N X S. A. R.															
Control (tap water)	37.87	63.02	50.44	12.21	15.06	13.35	6.39	19.99	13.19	62.86	98.08	80.47	3.92	4.02	3.97
2000 P.P.M. S.A.R. 6	16.75	26.38	21.56	10.41	9.34	9.87	5.53	12.64	9.08	38.23	48.37	43.30	2.47	3.04	2.75
2000 P.P.M. S.A.R. 12	11.53	20.75	16.14	10.20	7.00	8.60	5.36	11.29	8.32	32.47	38.74	35.60	2.02	2.59	2.30
4000 P.P.M. S.A.R. 6	3.39	13.87	8.63	9.52	7.00	8.26	4.90	9.41	7.15	22.73	29.13	25.93	1.32	2.22	1.77
4000 P.P.M. S.A.R. 12	2.07	10.78	6.42	8.53	5.70	7.11	4.23	9.08	6.65	18.67	25.56	22.11	1.26	1.86	1.56
6000 P.P.M. S.A.R. 6	1.75	5.80	3.77	6.94	4.66	5.80	4.25	8.68	6.46	17.20	19.20	18.20	1.07	1.22	1.14
6000 P.P.M. S.A.R. 12	1.14	5.16	3.15	6.33	4.24	5.28	3.58	8.51	6.04	14.65	17.92	16.28	1.02	1.02	1.02
8000 P.P.M. S.A.R. 6	0.75	4.10	2.42	4.87	3.93	4.40	2.98	7.15	5.06	11.59	14.19	12.89	0.93	0.96	0.94
8000 P.P.M. S.A.R. 12	0.50	3.00	1.75	3.98	3.09	3.53	2.53	4.46	4.49	9.55	10.89	10.22	0.88	0.74	0.81
L.S.D. 5 %	0.19	0.37		0.28	0.69		0.42	0.96		1.49	6.32		0.20	0.30	
at 1 %	0.25	0.50		0.38	0.92		0.56	1.29		1.99	8.46		0.26	0.40	

Table (8) : Effect of interaction between concentration X S.A.R. in irrigation water on the dry weight of plant organs and top / root ratio of two Fig cultivars during 1986 and 1987 seasons.

Treatments	LEAVES		Average	STEM		Average	ROOTS		Average	Total plant		Average	TOP/ROOT RATIO		Average
	1986	1987		1986	1987		1986	1987		1986	1987		1986	1987	
Cultivar X Concentration															
GIZI Control (tap water)	38.37	70.47	54.42	11.67	14.33	13.04	12.46	17.67	15.06	62.60	102.47	82.53	4.03	4.80	4.41
GIZI 2000 P.P.M.	17.66	31.41	24.53	9.74	9.01	9.37	10.43	10.35	10.39	37.83	50.44	44.13	2.62	3.93	3.27
GIZI 4000 P.P.M.	2.70	16.60	9.65	8.47	7.33	7.90	8.37	9.25	8.81	19.56	31.98	25.77	1.33	2.58	3.59
GIZI 6000 P.P.M.	1.41	5.48	3.44	6.53	4.32	5.42	7.64	8.60	8.21	15.58	18.46	17.02	1.09	1.18	1.13
GIZI 8000 P.P.M.	0.61	3.47	2.04	4.54	2.59	3.56	5.43	6.75	6.09	10.58	12.10	11.34	0.94	0.90	0.92
SULTANI Control (tap water)	37.37	55.57	46.47	12.66	15.79	14.22	13.09	22.31	17.70	63.13	93.68	78.40	3.82	3.25	3.53
SULTANI 2000 P.P.M.	10.62	15.73	13.17	10.87	7.34	9.10	11.37	13.57	10.47	32.87	36.67	34.77	1.88	1.70	1.79
SULTANI 4000 P.P.M.	2.75	8.06	5.40	9.58	5.41	7.49	9.90	9.21	9.57	21.84	22.71	22.27	1.24	1.50	1.37
SULTANI 6000 P.P.M.	1.48	5.48	3.48	6.74	4.57	5.65	8.03	8.60	8.31	16.27	18.66	17.46	0.99	1.06	1.02
SULTANI 8000 P.P.M.	0.64	3.70	2.17	3.60	2.43	3.01	5.61	6.85	6.23	10.56	12.98	11.77	0.87	0.80	0.83
L.S.D. at 5 %	0.43	0.37		0.28	0.69		0.42	0.96		1.49	6.32		0.01	0.03	
at 1 %	0.58	0.45		0.38	0.92		0.56	1.29		1.99	8.46		0.02	0.04	
Cultivar X S. A. R.															
GIZI S.A.R. 6	13.40	26.80	20.10	8.54	8.08	8.31	9.28	10.69	9.98	31.23	45.12	38.17	2.12	2.85	2.48
GIZI S.A.R. 12	10.08	24.17	17.12	7.88	6.95	7.41	8.56	10.36	9.46	27.23	41.07	34.15	1.89	2.51	2.20
SULTANI S.A.R. 6	10.80	18.47	14.63	9.04	7.53	8.28	9.97	12.64	11.30	29.82	38.47	34.14	1.76	1.74	1.75
SULTANI S.A.R. 12	10.35	16.94	13.64	8.62	6.68	7.65	9.23	11.77	10.50	28.05	35.41	31.73	1.75	1.58	1.66
SULTANI L.S.D. at 5 %	0.12	0.23		0.18	0.43		0.26	0.61		0.93	4.00		0.35	0.42	
SULTANI at 1 %	0.16	0.32		0.24	0.58		0.35	0.82		1.26	5.32		0.49	0.57	

Table (9) : Effect of interaction between cultivar X concentration X S. A. R. in irrigation water on the dry weight of plant organs and top/ root ratio of two Fig cultivars during 1986 and 1987 seasons.

Treatments	L E A V E S		Average	S T E M		Average	R O O T S		Average	Total plant		Average	TOP/ ROOT RATIO		Average
	1986	1987		1986	1987		1986	1987		1986	1987		1986	1987	
Cultivars X Concentrations X S. A. R.															
GIZI Control (tap water)	38.37	70.47	54.42	11.76	14.33	13.04	12.46	17.67	15.06	62.60	102.47	82.53	4.03	4.80	4.41
GIZI 2000 P.P.M. S.A.R. 6	22.63	35.16	28.89	9.83	10.42	10.12	10.49	10.64	10.47	42.95	56.22	49.58	3.08	4.30	3.69
GIZI 2000 P.P.M. S.A.R. 12	12,68	27.66	20.17	9.65	7.60	8.62	10.37	12.06	10.21	32.71	44.67	38.69	2.15	3.55	2.85
GIZI 4000 P.P.M. S.A.R. 6	3.65	18.06	10.85	9.24	8.07	8.55	9.21	9.34	9.27	32.11	33.06	27.58	1.40	2.80	2.10
GIZI 4000 P.P.M. S.A.R. 12	1.76	15.14	8.45	7.71	6.59	7.15	7.54	9.17	8.35	17.01	30.91	23.96	1.28	2.36	1.82
GIZI 6000 P.P.M. S.A.R. 6	1.57	6.23	3.90	6.71	4.55	5.66	8.21	8.63	8.42	16.55	19.52	18.03	1.11	1.30	1.20
GIZI 6000 P.P.M. S.A.R. 12	1.25	4.74	2.99	6.29	4.10	5.19	7.07	8.56	7.81	14.61	17.41	16.01	1.07	1.07	1.07
GIZI 8000 P.P.M. S.A.R. 6	0.81	4.10	2.45	5.10	3.05	4.07	6.02	7.16	6.59	11.94	14.31	13.12	0.98	1.04	1.01
GIZI 8000 P.P.M. S.A.R. 12	0.41	2.84	1.62	3.98	2.14	3.06	4.83	6.35	5.59	9.23	9.88	9.55	0.90	0.76	0.83
SULTANI Control (tap water)	37.36	55.57	46.47	12.66	15.79	14.23	13.09	22.51	14.73	63.13	93.68	78.40	3.82	3.25	3.54
SULTANI 2000 P.P.M. S.A.R. 6	10.88	17.61	14.24	11.00	8.27	9.63	11.64	14.64	13.14	33.52	40.53	37.02	1.87	1.78	1.82
SULTANI 2000 P.P.M. S.A.R. 12	10.37	13.84	12.10	10.75	6.40	8.57	11.10	12.51	11.80	32.23	32.81	32.52	1.89	1.62	1.75
SULTANI 4000 P.P.M. S.A.R. 6	3.12	9.69	6.40	9.81	6.02	7.91	10.42	9.49	9.95	23.35	25.20	24.27	1.24	1.65	1.44
SULTANI 4000 P.P.M. S.A.R. 12	2.38	6.43	4.40	9.36	4.81	7.08	9.38	8.98	9.18	20.33	20.22	20.27	1.25	1.36	1.30
SULTANI 6000 P.P.M. S.A.R. 6	1.94	5.38	3.66	7.12	4.76	5.94	8.79	8.73	8.76	17.85	18.88	18.36	1.02	1.15	1.08
SULTANI 6000 P.P.M. S.A.R. 12	1.03	5.58	3.30	6.37	4.39	5.38	7.28	8.36	7.82	14.68	18.44	16.56	0.97	0.98	0.97
SULTANI 8000 P.P.M. S.A.R. 6	0.67	4.10	2.38	4.63	2.82	3.72	5.92	7.14	6.53	11.94	14.07	13.00	0.89	0.89	0.89
SULTANI 8000 P.P.M. S.A.R. 12	0.58	3.30	1.94	3.98	2.03	3.00	5.30	6.56	5.93	9.88	11.90	10.88	0.85	0.72	0.78
L.S.D. at 5 %	0.27	0.53		0.40	0.97		0.59	0.13		2.11	0.89		0.28	0.43	
at 1 %	0.36	0.71		0.54	1.30		0.79	0.18		2.82	1.20		0.38	0.57	

3- Effect of salt concentrations , sodium adsorption ratio (S.A.R.) and cultivar on leaf chlorophyll and carotene content:-

One of the main factors controlling carbohydrate metabolism in plants is the chlorophyll content. Yet,the study of the effect of salinity on chlorophyll content is of major importance to plant physiologists. Data obtained in the present study of chlorophyll (A) , (B) and carotene content as mg/g fresh weight of leaves , are shown in tables (10,11,12 and 13). The results show that the chlorophyll (A) and (B) content in leaf of plants treated with different salt concentration in the irrigation water was significantly lower than those of the untreated ones (control) . As for leaf carotene content no specific trend could detected in this concern. It is clear that the chlorophyll (A) and (B) content of leaves tended to decreasing with increasing salinity concentration during the study. Such chlorophyll depression was more pronounced at sodium adsorption ratio (S.A.R.) 12 than at 6 while leaf carotine content was higher at the higher level of S.A.R. during the study. This result are in agreement with those previously reported by **Hayward** et. al.**(1956)** and **Baslavskaya** and **Syroeskina (1936)**, who found an apparent reduction of chlorophyll in leaves of Potato plants treated with chloride salts. The effect of sodium chloride and sodium carbonate on chlorophyll in leaves of Cabbage and Lettuce , indicated that increasing concentration of either NaCL or Na_2Co_3 from 0.5 to 6 atmospher resulted in a remarkable depression in the mentioned pigments (**Kim** ,1958).

Carter and Myers (1963) worked on grapefruit trees irrigated with water containing either Na_2So_4 , NaCL and $CaCL_2$. Their data showed that all salts induced about 50 % decrease in chlorophyll content. They suggested a similar action in decreasing the concentration of chlorophyll and carotene pigment. The reduction in pigment content caused by the salts may cause leaf structural changes. Similar results were obtained by **Kanwar and Bhambota(1968)** in sweet orange , **Taha (1971)** in Tomato , **Fadl and El- Deen (1979)** on Olive mentioned that salinity at 4000 P.P.M. depressed chorophyll (a) , (b) and carotene content particularly at S.A.R. 18 . **Petrosjan** et. al. **(1979)** found that a decrease was observed in leaf chlorophyll , and leaf photosynthesis in grape vines growing in soil containing Na ions in the range 5.6 - 6.2 meq/100 g soil.

Taher (1983) found that increasing the salt concentrations in irrigation water decreased total leaf chlorophyll content as compared with those of the control for Sour Orange , Cleopatra Mandarin and Rough Lemon seedlings. With respect to the leaf content of both chlorophyll and carotene in response to the specific effect of cultivar, it is clear from table (10) that the differences were of minor importance.

Concerning the effect of interaction between salt concentration X S.A.R. and cultivar X concentration on leaf chlorophyll (a) and (b) and carotene content , it is quite clear from tables (11 and 12) that leaf chlorophyll (A) and (B) content

was significantly decreased with all salt concentrations either combined with S.A.R. (6 or 12) whereas , later showed more pronounced reduction while the effection leaf carotene content has no defenit trend during the study. Moreover , the effect of interaction between cultivar X S.A.R. on leaf chlorophyll (a) and (b) content and carotene content , it is clear from table (12) that both leaf chlorophyll and carotene contents were slightly affected such different were statistically negligiable during the study .

Data concerning the effect of interaction between cultivar X concentration X S.A.R. on leaf chlorophyll and carotene content of Gizi and Sultani fig cultivars are presented in table (13). Generaly ; the data indicated that leaf chlorophyll content was significantly decreased as compared with control while leaf carotene content has no definit trend in both Gizi and Sultani fig cultivar during the study.

* * * * * * * * * * * * * * * * * *

Table (10) : Specific effect of concentrations ,and S.A.R. and cultivar on chlorophyll (A) and (B) and carotene content in leaves of two Fig cultivar during i 1986 & 1987 seasons.

Treatments	Chlorophyll (A) mg/ L.		Average	Chlorophyll (B) mg/L.		Average	Carotene mg/L.		Average
	1986	1987		1986	1987		1986	1987	
Concentration									
Control (tap water)	1.39	1.19	1.29	0.70	0.66	0.68	0.73	0.47	0.60
2000 P.P.M.	1.11	0.99	1.05	0.68	0.61	0.64	0.66	0.54	0.60
4000 P.P.M.	0.99	0.91	0.95	0.59	0.54	0.56	0.98	0.63	0.80
6000 P.P.M.	0.91	0.83	0.87	0.40	0.46	0.43	0.59	0.63	0.61
8000 P.P.M.	0.80	0.79	0.80	0.45	0.37	0.41	0.71	0.59	0.65
L.S.D. at 5 %	0.01	0.02		0.04	0.01		0.14	0.02	
at 1 %	0.02	0.03		0.06	0.02		0.19	0.03	
S. A. R.									
S.A.R. 6	1.11	0.98	1.04	0.59	0.54	0.56	0.69	0.55	0.62
S.A.R. 12	0.97	0.92	0.94	0.53	0.51	0.52	0.78	0.59	0.68
L.S.D. at 5 %	0.07	0.01		0.01	0.01		0.01	0.01	
at 1 %	0.09	0.02		0.02	0.02		0.02	0.02	
Cultivar									
Gizi	0.95	0.94	0.94	0.58	0.56	0.57	0.69	0.52	0.60
Sultani	1.13	0.93	1.03	0.52	0.49	0.50	0.78	0.63	0.70
L.S.D. at 5 %	N.S.	N.S.		N.S.	N.S.		N.S.	N.S.	
at 1 %									

Table (11) : Effect of interaction between concentration X S.A.R. in irrigation water on Chlorophyll (A) and (B) and Carotene content in leaves of two Fig cultivars during 1986 and 1987 seasons.

Treatments	Chlorophyll (A) mg/L.		Average	Chlorophyll (B) mg/L.		Average	Carotene mg/ L.		Average
	1986	1987		1986	1987		1986	1987	
				Concentration X S. A. R.					
Control (tap water)	1.39	1.19	1.29	0.70	0.66	0.68	0.73	0.47	0.36
2000 P.P.M. S.A.R. 6	1.25	1.04	1.14	0.67	0.60	0.63	0.42	0.53	0.47
2000 P.P.M. S.A.R.12	0.97	0.94	0.95	0.69	0.61	0.65	0.90	0.55	0.72
4000 P.P.M. S.A.R. 6	1.09	0.92	1.00	0.61	0.54	0.57	0.87	0.62	0.74
4000 P.P.M. S.A.R.12	0.90	0.91	0.90	0.58	0.53	0.55	1.09	0.63	0.86
6000 P.P.M. S.A.R. 6	0.99	0.78	0.88	0.45	0.48	0.46	0.53	0.55	0.54
6000 P.P.M. S.A.R.12	0.84	0.89	0.86	0.36	0.43	0.39	0.64	0.71	0.67
8000 P.P.M. S.A.R. 6	0.84	0.83	0.83	0.56	0.42	0.49	0.88	0.58	0.73
8000 P.P.M. S.A.R.12	0.77	0.76	0.76	0.35	0.33	0.34	0.53	0.59	0.56
L.S.D. at 5 %	0.01	0.02		0.04	0.02		0.15	0.02	
at 1 %	0.02	0.03		0.06	0.03		0.20	0.03	

Table (12) : Effect of interaction between cultivar X concentration and between cultivar X S.A.R. in irrigation water on Chlorophyll (A) and (B) and carotene content in leaves of two Fig cultivars during 1986 and 1987 seasons.

Treatments	Chlorophyll (A) mg/L.		Average	Chlorophyll (B) mg/L.		Average	Carotene mg / L.		Average
	1986	1987		1986	1987		1986	1987	
Cultivar X concentration									
GIZI — Control (tap water)	1.16	1.19	1.17	0.72	0.72	0.72	0.78	0.38	0.58
GIZI — 2000 P.P.M.	1.01	1.03	1.02	0.68	0.64	0.66	0.61	0.49	0.55
GIZI — 4000 P.P.M.	0.93	0.94	0.93	0.57	0.56	0.56	0.95	0.67	0.81
GIZI — 6000 P.P.M.	0.87	0.81	0.84	0.48	0.52	0.50	0.52	0.54	0.53
GIZI — 8000 P.P.M.	0.81	0.74	0.77	0.44	0.39	0.41	0.68	0.53	0.60
SULTANI — Control (tap water)	1.62	1.19	1.40	0.68	0.60	0.64	0.67	0.56	0.61
SULTANI — 2000 P.P.M.	1.22	0.95	1.08	0.67	0.57	0.62	0.82	0.60	0.71
SULTANI — 4000 P.P.M.	1.06	0.89	0.97	0.62	0.51	0.56	1.02	0.58	0.80
SULTANI — 6000 P.P.M.	0.96	0.85	0.90	0.34	0.39	0.36	0.65	0.73	0.69
SULTANI — 8000 P.P.M.	0.80	0.80	0.80	0.30	0.36	0.33	0.73	0.66	0.69
L.S.D. at 5 %	0.01	0.02		0.04	0.02		0.15	0.02	
at 1 %	0.02	0.03		0.06	0.03		0.20	0.03	
Cultivar X S. A. R.									
GIZI — S.A.R. 6	0.99	0.97	0.98	0.62	0.60	0.61	0.62	0.50	0.56
GIZI — S.A.R. 12	0.92	0.91	0.91	0.54	0.53	0.53	0.75	0.54	0.64
SULTANI — S.A.R. 6	1.23	0.99	1.11	0.51	0.48	0.49	0.75	0.61	0.68
SULTANI — S.A.R. 12	1.03	0.94	0.98	0.53	0.49	0.51	0.81	0.64	0.72
L.S.D. at 5 %	N.S.	N.S.		N.S.	N.S.		N.S.	N.S.	
at 1 %									

Table (13) : Effect of interaction between cultivar X concentration X S.A.R. in irrigation water on chlorophyll (A) and (B) and carotene content in leaves of two Fig cultivars during 1986 & 1987 seasons.

Treatments		Chlorophyll (A) mg / L.		Average	Chlorophyll (B) mg / L.		Average	Carotene mg / L.		Average
		1986	1987		1986	1987		1986	1987	
Cultivar X Concentration X S. A. R.										
GIZI	Control (tap water)	1.16	1.19	1.17	0.72	0.72	0.72	0.78	0.38	0.58
	2000 P.P.M. S.A.R. 6	1.09	1.11	1.10	0.67	0.64	0.65	0.40	0.47	0.43
	2000 P.P.M. S.A.R.12	0.93	0.96	0.94	0.70	0.64	0.67	0.82	0.51	0.66
	4000 P.P.M. S.A.R. 6	0.97	0.96	0.96	0.60	0.60	0.60	0.85	0.67	0.76
	4000 P.P.M. S.A.R.12	0.89	0.93	0.91	0.54	0.52	0.53	1.04	0.67	0.85
	6000 P.P.M. S.A.R. 6	0.92	0.74	0.83	0.60	0.56	0.58	0.46	0.46	0.46
	6000 P.P.M. S.A.R.12	0.82	0.89	0.85	0.37	0.48	0.42	0.57	0.61	0.59
	8000 P.P.M. S.A.R. 6	0.82	0.89	0.85	0.54	0.49	0.51	0.85	0.49	0.67
	8000 P.P.M. S.A.R.12	0.80	0.59	0.69	0.35	0.30	0.32	0.51	0.56	0.53
SULTANI	Control (tap water)	1.62	1.19	1.40	0.68	0.60	0.64	0.67	0.56	0.61
	2000 P.P.M. S.A.R. 6	1.42	0.97	1.19	0.67	0.56	0.61	0.66	0.60	0.63
	2000 P.P.M. S.A.R.12	1.42	0.93	0.97	0.68	0.58	0.63	0.97	0.59	0.78
	4000 P.P.M. S.A.R. 6	1.21	0.89	1.05	0.62	0.49	0.55	0.89	0.57	0.73
	4000 P.P.M. S.A.R.12	0.92	0.89	0.90	0.62	0.54	0.58	1.15	0.59	0.87
	6000 P.P.M. S.A.R. 6	1.07	0.82	0.94	0.31	0.41	0.36	0.60	0.64	0.62
	6000 P.P.M. S.A.R.12	0.86	0.89	0.87	0.36	0.38	0.37	0.70	0.81	0.75
	8000 P.P.M. S.A.R. 6	0.86	0.78	0.82	0.27	0.36	0.37	0.92	0.68	0.80
	8000 P.P.M. S.A.R.12	0.75	0.82	0.78	0.34	0.36	0.35	0.55	0.63	0.59
	L.S.D. at 5 %	0.01	0.01		0.03	0.01		0.01	0.01	
	at 1 %	0.02	0.02		0.04	0.02		0.02	0.02	

4- Effect of salt concentration and sodium adsorption ratio (S.A.R.) in irrigation water on leaves and roots mineral composition :-

a-Chloride content :-

Data concerning the effect of salinity treatments (2000 , 4000 , 6000 and 8000 P.P.M.) on chloride content of leaves and roots are presented in tables (14,15,16 and 17).

The results show that the CL^- content in plants treated with different salt concentrations in the irrigation water was significantly higher than the untreated ones (Control). It is clear that the chloride content of leaves and roots tended to increase with increasing salinity concentration . This results are in agreement with the findings of **Ayers (1950), Hass (1950) , Fenn et. al.(1968), Downton(1978) and Gaser (1986)**on avocado trees.

Concerning the effect of different levels of sodium adsorption ratio (S.A.R.) in the irrigation water on Fig leaf and root chloride content , data of both seasons showed that there were significant differences between S.A.R. 6 and S.A.R. 12 treatments in this respect. However , S.A.R. 6 treatment recorded lower values than the S.A.R. 12 treatment in both leaves and roots during the two seasons of study.

With respect to the two Fig cultivars under investigation , it is clear from table (14) that there was highly significant decrease in Sultani leaf and root chloride content as compared to Gizi Fig cultivar during 1986 and 1987 seasons.

Therefore , it can be concluded that leaves seemed to contain higher amounts of CL^- than roots.

The findings of **EL-Azab** et. al. **(1973)** showed that Pecan seedlings treated with 1500 and 3000 P.P.M. NaCL and $CaCL_2$ (Equal weight) tended to accumulate more CL^- in leaves than roots .

Furthermore , the present results of chloride content in leaves and roots under all treatments indicated that increasing salinity levels induced more accumulation of CL^- during the two seasons of study.

Concerning the effect of interaction between salt concentration X S.A.R. levels on leaf and root chloride content . it is clear from table (15).the effect was significantly increase CL content during the study. The maximum increase in leaf and root chloride content was found at the highest salt concentration with the highest level of S.A.R.

With respect to , interaction between cultivar X concentration levels , data in table (16) showed that all treatments significantly had increased leaf and root chloride content in both Gizi Sultani Fig plants as compared with control during the study. Moreover , the interaction between cultivar X S.A.R. on leaf and root chloride content , it is clear from table (16) that the Cl content was significantly higher in Gizi cultivar at both S.A.R. levels as compared with Sultani cultivar during the two seasons of study.

Data concerning the effect of interaction between cultivar X concentration X S.A.R. on leaf and root chloride content of Gizi and Sultani Fig cultivars are presented in table (17). Generally .the data indicated that the leaf and root chloride content were significantly increased as compared with control in both Gizi and

Sultani Fig cultivars during the study.

b- Sodium content :-

The sodium content of leaves and roots is presented in table (14,15,16 and 17). It is evident that salinity treatments significantly increased Na+ content in leaves and roots of the treated plants. In addition , sodium content was increased with increasing salt cincentration. Similar observations were achieved by **Ayers(1950) and Martin and Ervin (1956)**on Avocado , **EL-Gizawy** (1973) on Strawbery , **Abdel - Messih et. al.(1979) Khamis and Darwish(1981) and Al Ashram et. al. (1985)** on some Citrus rootstocks,**Makhija et. al.(1980)** on Guava seedlings, **Sweidan et. al.(1982)** on Apricot, **Sharaf et. al. (1985)** on Thompson seedless and American Grape, and **Behairy et. al. (1985)** on Guava and Olive seedlings. They stated that as the salinity level of the irrigation water increased, a subsequent increase was observed in Na+ accumulation in plants.

As far as the effect of sodium adsorption ratio (S.A.R.) 6 and 12 treatments on leaf and root Na+ content, the obtained results showed that S.A.R. at 12 treatment significantly increased Na+ content in leaves than S.A.R. 6 , while in roots the reverse was true especially during the first season of the study. These results are in accordance with the findings of **Abdel - Aziz et. al.(1985)** on Guava and Olive seedlings , **El-Ashram et. al. (1985)** on some Citrus rootstock seedlings and **Sharaf et. al.(1985)** on Tompson seedless and American grape.

Furthermore ; comparing Na+ content in leaves and roots as affected by salt treatment , the data disclosed that leaves had

more tendency to accumulate Na+ higher than roots. In this respect, **Martin and Ervin (1956) and Gaser (1986)**, they found that Na+ accumulation in Avocado seedlings was higher in roots than in leaves.

As far as the two Fig cultivars under investigation , it is clear from table (14) that leaf and root sodium contents was significantly increased in Sultani fig cultivar as compared to Gizi fig cultivar during the study.

Concerning the effect of the interaction between salt concentration X S.A.R. levels on the leaf and root sodium content. It is obvious from table (15) that leaf and root sodium content was significantly increased as compared to control during the study. Moreover , the maximum value was found at the hight salt concentration with the highest level of S.A.R.

With respect to the effect of interaction cultivar X concentrations on leaf and root sodium content , it is obvious from table (16) that the effect was significantly increased as compared to control in both Gizi and Sultani Fig cultivars during the study. Moreover , the effect of interaction between cultivar X S.A.R. , it is quite clear from table (16) that the effect was significantly increase leaf and root sodium content in Gizi as compared to Sultani Fig cultivar in both S.A.R. 6 and S.A.R. 12 during the study.

The data reported in table (17) disclosed the effect of interaction between cultivar X concentration X S.A.R. on leaf and root sodium content. It is quite obvious that leaf and root sodium contents was increased significantly in both two Fig cultivar under study.

Table (14) : Specific effect of salt concentrations , S.A.R. and cultivars in irrigation water on chloride and sodium content (as percentages) in leaves and roots in two Fig cultivar during 1986 & 1987 seasons.

n T R E A T M E N T S	(CL) %						(N a) %					
	L E A V E S		Average	R O O T S		Average	L E A V E S		Average	R O O T S		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
Concentrations												
Control (tap water)	0.70	0.64	0.67	1.06	0.58	0.82	0.36	0.29	0.33	0.78	0.37	0.58
2000 P.P.M.	1.81	0.96	1.39	1.77	0.81	1.29	1.39	0.41	0.90	0.89	0.56	0.73
4000 P.P.M.	1.73	1.33	1.53	1.83	1.17	1.50	1.30	1.08	1.19	0.99	0.92	0.96
6000 P.P.M.	2.65	2.31	2.48	1.86	1.27	1.57	1.71	1.08	1.40	0.97	0.97	0.97
8000 P.P.M.	2.83	2.24	2.54	2.15	1.47	1.81	1.46	1.21	1.34	1.25	0.91	1.02
L.S.D. at 5 %	0.09	0.07		0.10	0.07		0.15	0.20		0.11	0.19	
at 1 %	0.12	0.10		0.15	0.10		0.20	0.27		0.15	0.25	
S. A. R.												
S.A.R. 6	1.65	1.26	1.46	1.84	1.03	1.44	1.16	0.73	0.95	1.00	0.69	0.85
S.A.R. 12	2.24	1.73	1.99	1.62	1.09	1.36	1.33	0.90	1.12	0.95	0.61	0.78
L.S.D. at 5 %	0.05	0.06		0.07	0.02		0.09	0.13		0.07	0.12	
at 1 %	0.08	0.09		0.09	0.05		0.12	0.17		0.09	0.16	
Cultivars												
Gizi	2.23	1.62	1.93	2.01	1.09	1.55	1.29	0.87	1.08	1.15	0.95	1.05
Sultani	1.65	1.37	1.51	1.44	1.02	1.23	1.19	0.75	0.97	0.80	0.54	0.67
L.S.D. at 5 %	0.09	0.05		0.07	0.04		0.09	0.13		0.07	0.12	
at 1 %	0.12	0.07		0.09	0.06		0.12	0.17		0.09	0.16	

Table (15) : Effect of interaction between concentration % S.A.R. in irrigation water on chloride & sodium content in leaves & roots of two Fig cultivars during 1986 & 1987 seasons

TREATMENTS	(CL) %						(Na) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	Concentration % S. A. R.											
Control (tap water)	0.64	0.70	0.67	0.58	1.06	0.82	0.41	0.34	0.37	0.53	0.24	0.38
2000 P.P.M. S.A.R. 6	0.73	1.29	1.01	0.73	1.68	1.20	1.21	0.38	0.79	0.78	0.47	0.62
2000 P.P.M. S.A.R.12	1.18	2.33	1.75	0.89	1.85	1.37	1.57	0.44	1.00	1.01	0.65	0.83
4000 P.P.M. S.A.R. 6	1.15	1.48	1.31	1.09	1.94	1.51	1.29	1.01	1.15	0.96	0.82	0.89
4000 P.P.M. S.A.R.12	1.52	1.98	1.75	1.25	1.71	1.48	1.31	1.14	1.22	1.01	1.01	1.01
6000 P.P.M. S.A.R. 6	1.48	2.26	1.87	1.30	2.33	1.81	1.54	0.88	1.21	1.08	1.02	1.05
6000 P.P.M. S.A.R.12	2.76	3.04	2.90	1.24	1.38	1.31	1.87	1.28	1.57	0.87	0.92	0.89
8000 P.P.M. S.A.R. 6	2.31	2.53	2.42	1.43	2.19	1.81	1.34	1.03	1.18	1.15	0.88	10.01
8000 P.P.M. S.A.R.12	2.53	3.14	2.83	1.50	2.10	1.80	1.58	1.39	1.48	1.33	0.95	1.14
L.S.D. at 5 %	0.12	0.10		0.08	0.10		0.21	0.19		0.10	0.23	
at 1 %	0.17	0.14		0.11	0.15		0.30	0.29		0.13	0.38	

Table (16) : Effect of interaction between cultivar X concentrations and cultivar X S.A.R. in irrigation water on chloride & sodium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(Cl) %						(Na) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
CULTIVAR X CONCENTRATION												
GIZI Control (tap water)	0.67	0.52	0.64	1.28	0.64	0.96	0.41	0.34	0.37	1.03	0.50	0.76
GIZI 2000 P.P.M.	1.86	0.91	1.38	2.01	0.83	1.42	1.25	0.41	0.83	10.4	0.32	0.68
GIZI 4000 P.P.M.	1.97	1.43	1.70	2.14	1.31	1.72	1.30	0.88	1.09	1.21	1.22	1.21
GIZI 6000 P.P.M.	3.38	2.45	2.91	2.15	1.17	1.72	1.73	1.31	1.52	1.15	1.19	1.17
GIZI 8000 P.P.M.	3.20	2.77	2.98	2.47	1.54	2.00	1.79	1.41	1.60	1.33	1.12	1.22
SULTANI Control (tap water)	0.64	0.76	0.70	0.81	0.52	0.66	0.31	0.24	0.27	0.53	0.24	0.38
SULTANI 2000 P.P.M.	1.75	1.00	1.36	1.51	0.79	1.15	1.53	0.41	0.79	0.74	0.42	0.58
SULTANI 4000 P.P.M.	1.30	1.23	1.26	0.77	1.03	0.90	1.49	1.27	1.38	1.52	0.61	1.06
SULTANI 6000 P.P.M.	1.91	1.79	1.85	1.56	1.37	1.46	1.69	0.84	1.26	0.80	0.74	0.77
SULTANI 8000 P.P.M.	2.47	2.07	2.27	1.82	1.40	1.61	1.13	1.00	1.06	1.16	0.70	0.93
L.S.D. at 5 %	0.12	0.10		0.08	0.13		0.02	0.03		0.01	0.03	
at 1 %	0.17	0.14		0.11	0.17		0.03	0.04		0.02	0.04	
CULTIVAR X S. A. R.												
Gizi S.A.R. 6	1.91	1.48	1.69	2.19	1.07	1.63	1.22	0.74	0.98	1.17	0.92	1.04
Gizi S.A.R. 12	2.55	1.75	2.15	1.83	1.12	1.47	1.37	1.00	1.18	1.12	0.97	1.04
Sultani S.A.R. 6	1.39	1.04	1.21	1.48	0.98	1.23	1.08	0.69	0.88	0.73	0.51	0.62
Sultani S.A.R. 12	1.92	1.70	1.81	1.40	1.06	1.23	1.31	0.81	1.06	0.88	0.58	0.73
L.S.D. at 5 %	0.08	0.03		0.10	0.07		0.13	0.18		0.10	0.17	
at 1 %	0.11	0.05		0.13	0.09		0.18	0.24		0.22	0.23	

Table (17) : Effect of interaction between cultivar X concentrations X S.A.R. in irrigation water on chloride & sodium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS		(Cl) %						(Na) %					
		LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
		1986	1987		1986	1987		1986	1987		1986	1987	
		CULTIVAR X CONCENTRATION X S. A. R.											
GIZI	Control (tap water)	0.76	0.52	0.64	1.28	0.64	0.96	0.41	0.34	0.37	1.03	0.50	0.76
	2000 P.P.M. S.A.R. 6	1.56	0.62	1.09	1.99	0.75	1.37	1.08	0.36	0.72	0.98	0.59	0.78
	2000 P.P.M. S.A.R.12	2.15	1.20	1.67	2.04	0.90	1.47	1.43	0.46	0.94	1.11	0.80	0.95
	4000 P.P.M. S.A.R. 6	1.37	1.18	1.27	2.34	1.18	1.76	1.25	0.61	0.93	0.86	1.00	0.93
	4000 P.P.M. S.A.R.12	2.56	1.68	2.12	1.94	1.44	1.69	1.35	1.15	1.25	1.18	1.44	1.31
	6000 P.P.M. S.A.R. 6	3.03	1.90	2.46	2.89	1.35	2.12	1.59	1.02	1.30	1.37	1.34	1.35
	6000 P.P.M. S.A.R.12	3.74	3.00	3.37	1.42	0.99	1.20	1.86	1.61	1.73	0.93	1.05	0.99
	8000 P.P.M. S.A.R. 6	2.85	3.19	3.02	2.46	1.44	1.95	1.78	1.39	1.58	1.27	1.16	1.21
	8000 P.P.M. S.A.R.12	3.55	2.34	2.94	2.48	1.63	2.05	1.81	1.44	1.62	1.39	1.09	1.24
SULTANI	Control (tap water)	0.64	0.76	0.70	0.81	0.52	0.66	0.31	0.24	0.27	0.53	0.24	0.38
	2000 P.P.M. S.A.R. 6	1.10	0.85	0.97	1.37	0.71	1.04	1.35	0.40	0.87	0.59	0.36	0.47
	2000 P.P.M. S.A.R.12	2.50	1.16	1.83	1.65	0.87	1.26	1.72	0.41	1.06	0.90	0.49	0.69
	4000 P.P.M. S.A.R. 6	1.58	1.11	1.34	1.54	0.99	1.26	1.35	1.40	1.37	0.70	0.65	0.67
	4000 P.P.M. S.A.R.12	1.39	1.35	1.37	1.49	1.06	1.27	1.26	1.13	1.19	0.85	0.57	0.71
	6000 P.P.M. S.A.R. 6	1.49	1.06	1.27	1.77	1.25	1.51	1.50	0.75	1.12	0.79	0.70	0.74
	6000 P.P.M. S.A.R.12	3.34	2.53	2.93	1.35	1.49	1.42	1.88	0.93	1.40	0.82	0.78	0.80
	8000 P.P.M. S.A.R. 6	2.22	1.42	1.82	1.92	1.42	1.67	0.90	0.68	0.79	1.04	0.60	0.82
	8000 P.P.M. S.A.R.12	3.55	2.73	3.14	2.48	1.37	1.92	1.81	1.33	1.57	1.00	0.80	0.90
	L.S.D. at 5 %	0.03	0.05		0.12	0.04		0.03	0.02		0.02	0.02	
	at 1 %	0.04	0.09		0.19	0.09		0.04	0.05		0.05	0.03	

c- Nitrogen content :-

Concerning the effect of different salt concentrations in the irrigation water on leaf and root nitrogen content , it is evident from tables (18,19,20 and 21) that salinity at any levels depressed leaf and root nitrogen content comparing with those of the control except 4000 P.P.M. treatment in root the nitrogen content was increased significantly. (Nitrogen status reflcts the phisiology of the whole plants as well as its interaction with its suroundings). Under saline conditions disturbances in the nitrogen metabolism are usually occurred in plants. These results are similar to those obtained by **Gauch and Wedleigh (1945)** on Bean plants ; **Petrojan et. al. (1967)** on Perrenial crops ; **Abdel- Messih et. at. (1979)** on some Citrus rootstock seedlings , **Abdel Aziz et. al. (1985)** on Guava and Olive seedlings , **Sharaf et. al. (1985)** on Thompson seedless and American Grape and **Behairy et. al. (1985)** on Guava and Olive seedlings. other studies carried out by **Gauch and Eaton (1942)** on Barley ; **Hayward and Long (1943)** on Tomato indicated that salinity increased total nitrogen content of plants. On the other hand ; **Daito (1967)** reported that salt treatments did not affect leaf N content of satsuma Orange leaves ; furthermore , **Taher (1983)** reported that leaf nitrogen content in sour Orange , Cleopatra Mandarin and rough Lemon did not follow a definite trend when treated with different concentrations of salinity.

Concerning the effect of different levels of sodium adsorption ratio (S.A.R.) in the irrigation water on Fig leaf and root nitrogen content , data are pressented in table (18). The

results show that the nitrogen content in leaves and roots was varied from one season to another , while it was significantly higher in S.A.R. 12 treatment as compared to S.A.R. 6 treatment in 1987 season , it was not significant between them during 1986 season. In this respect ; **Abdel - Aziz** et. al. **(1985)** on Guava and Olive and **Sharaf** et. al. **(1985)** on Thompson seedless and American Grape found that leaf nitrogen content was slightly decreased by increasing sodium adsorption ratio (S.A.R.) but not significantly.

With respect to the two Fig cultivars under investigation , it is clear from table (18) that they did not show any definite difference in their content of nitrogen in leaves in 1986 season, while nitrogen content in leaves in Sultani Fig cultivar was significantly increased during 1987 season. In addition : root nitrogen content was significant by higher decrease in Sultani Fig cultivar as compared to Gizi Fig cultivar during the study.

Therefore : it can be concluded from table (18) that leaves seemed to contain higher amounts of nitrogen than roots under all salt treatments in both seasons. These results are in accordance with the finding of **El Azab** et. al. **(1973)** and **Nasr** et. al. **(1974)** on Pecan and **Gaser (1986)** on Avocado , who found that the leaves contained more N+ than roots. Concerning the effect of interaction between concentration X S.A.R. and cultivar X S.A.R. and cultivar X concentration X S.A.R. on leaf and root nitrogen content , it is evident from tables (19,20 and 21) that no definite trend could be observed from the differences occurred between treatments. As well as the interaction between cultivar X

S.A.R. was not effective during both seasons of study.

d- Phosphorus content :-

Data in tables (18,19,20 and 21) generally show a gradual increase in leaf and root phosphorus content of Fig seedlings as salinity of irrigation water increased. Comparing with check plants, the increase in leaf and root phosphorus content was statistically confirmed especially at high salt concentrations. This result is in accordance with that obtained by **Reifenberg and Rosorvsky (1947)**. In this respect, **Faruque (1968)** on Pecan and **Stanimiravic.P(1969)** and **Salem (1981)** on Grapevines,**Nasr** et. al. (1977) on Plum and balady Peach and **EL Kholy** et. al.(1979) on Orange as they reported that phosphorus content decreases as salinity level increases.

With respect to the effect of sodium adsorption ratio (S.A.R.) 6 and 12 under investigation data did not show any definite differences in content of phosphorus either in leaves or roots in both seasons. These results are confirmed with **Bernstein** et. al.(1956) ; **El Ashram** et. al.(1985) **and Sharaf** et. al.(1985) on stone fruit trees , some Citrus rootstock seedlings and Guava and Olive seedlings, respectively.

As for the response of cultivars. the present results showed that phosphorus content in Sultani leaves was significantly lower than Gizi Fig cultivar. The phosphorus content in roots , data of both seasons showed that there were no differences between Sultani and Gizi cultivars during the study in this respect.

Therefore, it can be concluded from table (19) that leaves seemed to contain higher amounts of phosphorus than roots under

all salt treatments in both seasons. In this respect , **EL Azab and Minessy(1975)** who observed that phosphorus concentration in Thompson seedless Grapevine leaves treated with 1500 and 3000 P.P.M. NaCL + $CaCL_2$ (1:1 by weight) was lower than that in roots.

Concerning the effect of interaction between cultivar X concentration on leaf and root phosphorus contents, it is clear from table (20) that the P content was significantly increased in both leaf and root in response to all combinations used as compared to control during the two seasons of study.

With respect to , interaction between concentration X S.A.R. levels , and cultivar X S.A.R. data in tables (19 , 20) showed that the effect was not significantly. In addition , the interaction between cultivar X concentration X S.A.R. on leaf and root phosphorus content , it is obvious from table (21) that the P contents either in leaves or roots were significantly increased in both Gizi and Sultani Fig cultivars during 1986 and 1987 seasons. In addition , the highest P value was that of plants irrigated with 8000 P.P.M. either at 6 or 12 ratio of S.A.R. regardless of cultivar.

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Table (18): Specific effect of concentration , S.A.R. and cultivar in irrigation water on Nitrogen and phosphorus content in leaves and roots in two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(N) %						(P) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
Concentration												
Control (tap water)	3.05	3.03	3.04	2.14	1.90	2.02	0.15	0.16	0.16	0.10	0.08	0.09
2000 P.P.M.	2.97	3.02	3.00	2.05	2.00	2.03	0.16	0.18	0.17	0.13	0.09	0.11
4000 P.P.M.	2.77	2.80	2.79	2.33	2.20	2.28	0.18	0.19	0.19	0.15	0.10	0.13
6000 P.P.M.	2.60	2.50	2.55	2.04	1.64	1.84	0.17	0.19	0.18	0.14	0.11	0.13
8000 P.P.M.	2.38	2.27	2.33	1.94	1.74	1.84	0.20	0.21	0.21	0.15	0.11	0.13
L.S.D. at 5 %	0.16	0.06		0.10	0.12		0.01	0.02		0.02	0.01	
at 1 %	0.21	0.09		0.13	0.16		0.02	0.03		0.03	0.02	
S. A. R.												
S.A.R. 6	2.74	2.94	2.84	2.09	1.84	1.97	0.17	0.18	0.18	0.14	0.09	0.12
S.A.R. 12	2.72	3.04	2.88	2.12	1.95	2.04	0.18	0.19	0.19	0.14	0.10	0.12
L.S.D. at 5 %	N.S.	0.04		N.S.	N.S.		N.S.	N.S.		N.S.	N.S.	
at 1 %		0.05										
Cultivars												
Gizi	2.72	2.94	2.83	2.32	1.98	2.15	0.18	0.19	0.19	0.14	0.09	0.12
Sultani	2.69	3.03	2.86	1.88	1.81	1.85	0.16	0.18	0.17	0.14	0.10	0.12
L.S.D. at 5 %	N.S.	0.04		0.06	0.07		0.01	0.01		N.S.	N.S.	
at 1 %		0.05		0.08	0.10		0.02	0.02				

Table (19): Effect of interaction between concentration X S.A.P. in irrigation water on Nitrogen and Phosphorus content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(N) %						(P) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	CONCENTRATION X S.A.R.											
Control (tap water)	3.05	3.03	3.04	2.14	1.90	2.02	0.15	0.15	0.15	0.10	0.08	0.09
2000 P.P.M. S.A.R. 6	2.92	3.01	2.96	2.03	1.85	1.94	0.17	0.17	0.17	0.13	0.08	0.10
2000 P.P.M. S.A.R.12	3.02	3.03	3.02	2.07	2.16	2.11	0.13	0.17	0.15	0.13	0.09	0.10
4000 P.P.M. S.A.R. 6	2.64	3.03	2.83	2.42	2.06	2.24	0.17	0.17	0.17	0.16	0.09	0.12
4000 P.P.M. S.A.R.12	2.65	3.29	2.97	2.24	2.35	2.29	0.18	0.12	0.19	0.14	0.10	0.12
6000 P.P.M. S.A.R. 6	2.56	3.41	2.98	1.97	1.70	1.83	0.14	0.18	0.16	0.14	0.10	0.12
6000 P.P.M. S.A.R.12	2.64	3.59	3.11	2.11	1.58	1.84	0.19	0.13	0.16	0.15	0.05	0.10
8000 P.P.M. S.A.R. 6	2.54	2.26	2.40	1.88	1.68	1.78	0.19	0.20	0.20	0.15	0.10	0.12
8000 P.P.M. S.A.R.12	2.22	2.28	2.25	2.01	1.80	1.90	0.20	0.20	0.20	0.16	0.11	0.12
L.S.D. at 5 %	0.23	0.09		0.14	0.17		N.S.	N.S.		N.S.	N.S.	
at 1 %	0.30	0.13		N.S.	0.23							

Table (21) : Effect of interaction between cultivar X concentrations X S.A.R. in irrigation water on Nitrogen & Phosphorus content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(N) %						(P) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	CULTIVAR X CONCENTRATION X S. A. R.											
GIZI Control (tap water)	2.98	3.03	3.00	2.40	1.90	2.15	0.15	0.16	0.15	0.09	0.07	0.08
GIZI 2000 P.P.M. S.A.R. 6	2.80	2.83	2.81	2.23	1.80	2.01	0.18	0.18	0.18	0.15	0.08	0.11
GIZI 2000 P.P.M. S.A.R.12	3.00	3.06	3.13	2.30	2.26	2.28	0.11	0.18	0.15	0.15	0.08	0.11
GIZI 4000 P.P.M. S.A.R. 6	2.71	2.70	2.70	2.58	2.10	2.34	0.19	0.17	0.18	0.17	0.09	0.13
GIZI 4000 P.P.M. S.A.R.12	2.95	3.23	3.09	2.38	2.50	2.44	0.20	0.20	0.20	0.13	0.10	0.12
GIZI 6000 P.P.M. S.A.R. 6	2.68	3.26	2.97	2.10	1.70	1.90	0.16	0.18	0.17	0.13	0.10	0.11
GIZI 6000 P.P.M. S.A.R.12	2.73	3.46	3.09	2.13	1.70	1.91	0.21	0.20	0.21	0.14	0.10	0.12
GIZI 8000 P.P.M. S.A.R. 6	2.40	2.50	2.45	2.38	2.30	2.04	0.20	0.21	0.20	0.15	0.09	0.12
GIZI 8000 P.P.M. S.A.R.12	1.98	3.33	2.65	2.28	1.63	2.29	0.21	0.23	0.22	0.17	0.11	0.14
SULTANI Control (tap water)	3.13	3.03	3.08	1.88	1.90	1.89	0.15	0.15	0.15	0.10	0.08	0.09
SULTANI 2000 P.P.M. S.A.R. 6	3.05	3.19	3.12	1.83	1.90	1.86	0.17	0.17	0.17	0.12	0.09	0.10
SULTANI 2000 P.P.M. S.A.R.12	3.05	3.00	3.02	1.85	2.06	1.95	0.15	0.17	0.16	0.12	0.10	0.11
SULTANI 4000 P.P.M. S.A.R. 6	2.58	3.36	2.97	2.26	2.03	2.14	0.16	0.19	0.17	0.15	0.10	0.13
SULTANI 4000 P.P.M. S.A.R.12	2.58	3.36	3.00	2.10	2.20	2.15	0.17	0.16	0.16	0.16	0.11	0.13
SULTANI 6000 P.P.M. S.A.R. 6	2.45	3.56	2.91	1.85	1.70	1.77	0.12	0.19	0.15	0.15	0.11	0.13
SULTANI 6000 P.P.M. S.A.R.12	2.45	3.73	2.85	2.09	1.46	1.77	0.17	0.19	0.18	0.15	0.12	0.13
SULTANI 8000 P.P.M. S.A.R. 6	2.68	3.03	2.45	1.38	1.66	1.52	0.18	0.20	0.19	0.15	0.12	0.13
SULTANI 8000 P.P.M. S.A.R.12	2.68	2.23	3.14	1.75	1.30	1.52	0.18	0.20	0.19	0.15	0.12	0.13
L.S.D. at 5 %	0.32	0.13		N.S.	§0.24		0.01	0.01		0.02	0.01	
at 1 %	0.43	0.18			§0.32		0.02	0.02		0.03	0.02	

e- Potassium content :-

Data from tables (22,23,24 and 25) obviously showed that leaf and root potassium contents were decreased significantly by using different saline solutions as compared with those of tap water (control) treatment during 1986 and 1987 seasons. This result is confirmed with the findings of **Gorton and Cooper (1954)**, who stated that increasing Ca content of irrigation water depressed K concentration of Grapefruit leaves. **Pearson et. al.(1957)** found that increasing levels of salinity, as NaCL in irrigation water caused a decrease in leaf potassium content. Moreover ; some findings were obtained by **Taha(1971)** on Tomato plants ; **Paliwal and Maliwal(1972)** in Okra ; **EL Gizawi(1973)** on Strawberry ; **Mohamed Ali(1979)** and **Sharaf et. al.(1985)** on Thompson seedless and American Grape, **Abdel Messih et. al.(1979)** and **Khamis and Darwish(1981)** on some Citrus rootstock and **Behairy et. al.(1985)** on Guava and Olive seedlings.

Moreover, leaf and root K concentration was varied from one season to another by increasing sodium adsorption ratio (S.A.R.) from 6 to 12, while it was not affected in leaves and roots during 1st. and 2nd. season respectivly. it was decreased significantly in leaves during 1987 and roots during 1986 seasons. This result is in agreement by **Kabeel(1985)**. In this respect ; **Bower and Wadleigh(1949)** reported that increasing the exchangeable Na percentage of the substrate resulted in a decrease in plant K content.

Regarding the response of Fig cultivars. It is quite clear from the present data that leaves and roots of the Sultani Fig

contained in considerably less K+ content than Gizi Fig cultivar. It is also evident that leaves either of treated or untreated plants contained relatively higher percentage of K+ than roots.

Concerning the effect of interaction between concentration X S.A.R. levels on leaf and root potassium content , it is clear from table (23) that the effect was slightly decrease in leaves during the two seasons of study. In addition , it was varied from one season to another as the root K content was concerned.

With respect to , interaction between cultivar X concentration levels , data in table (24) showed that no definite trend in leaf and root potassium content in both Gizi and Sultani Fig cultivars during the study. In addition , the interaction between cultivar X S.A.R. on leaf and root potassium content showed that Gizi cultivar was slightly higher as compared with Sultani cultivar as general trend in both S.A.R. 6 and S.A.R. 12 during 1986 and 1987 seasons.

Data concerning the effect of interaction between cultivar X concentration X S.A.R. on leaf and root potassium content of Gizi and Sultani Fig cultivars are presented in table (25). Generally, the data indicated that the leaf and root potassium content has no definite trend in response to all combinations of saline solutions used for both two cultivars during the study.

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f- Calsium content :-

According to data in tables (22,23,24 and 25), it can be observed that salinity treatments (2000 , 4000 , 6000 and 8000 P.P.M) comparing with control , stimulated plant absorption of calcium. Moreover , all concentrations of saline water caused highly significant increase in both leaf and root Ca percentage than those of the control during the two seasons of study. These results are similarly to that obtained by **Cooper et. al.(1952)** on Citrus. They found that salt (NaCL $CaCL_2$ on milliequivalent basis) treatments increased the calcium content of the leaves of Valencia Orange and Shary red Grapefruit grafted on both Cleopatra Mandarin and sour Orange rootstocks. **Makhija et. al.(1980)** on Guava seedlings, found that rising salinity levels increased leaf Ca content. Similar results were found by **Kabeel(1985)** on Grape, Peach and Plum seedlings.

Concerning the effect of two levels of sodium adsorption ratio (S.A.R.) in irrigation water.it is clear from table(22) that leaf and root Ca- content was slightly increased by increasing sodium adsorption ratio(S.A.R.) from 6 to 12 in irrigation water during the study. These results are similar to that obtained by **Kabeel (1985)** on Grape, Peach and Plum seedlings.

With respect to the two Fig cultivars under investigation, it is clear from table (22) that Ca-contents in Sultani Fig leaves and roots were decreased significantly than those in Gizi Fig cultivar during 1986 and 1987 seasons. Moreover, the rate of Ca++ accumulation was higher in leaves than in roots during the study.

Regarding the effect of interactions between salt concentration X S.A.R. , cultivar X concentration and cultivar X concentration X S.A.R. on leaf and root calcium content. It is clear from tables (23,24 and 25) that the effect was significantly cincreased calcium content while the interaction between cultivar X S.A.R. data in table (24) indicated that the effect was slightly increase calcium content in Gizi than Sultani cultivar during the study.

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Table (22): Specific effect of concentration , S.A.R. and cultivar in irrigation water on Potassium and Calcium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(K) %						(Ca) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
Concentration												
Control (tap water)	2.75	1.40	2.08	1.63	0.60	1.62	3.15	3.43	3.29	1.53	1.74	1.64
2000 P.P.M.	2.44	1.26	1.85	1.22	0.47	0.85	3.53	3.63	3.58	1.90	1.86	1.88
4000 P.P.M.	2.49	1.11	1.80	1.55	0.36	0.96	3.63	3.94	3.79	2.04	2.22	2.13
6000 P.P.M.	2.36	1.16	1.76	1.33	0.36	0.85	4.25	4.30	4.28	2.27	2.57	2.42
8000 P.P.M.	2.41	1.19	1.80	1.15	0.36	0.73	4.50	4.60	4.55	2.37	2.98	2.68
L.S.D. at 5 %	0.22	0.06		0.06	0.14		0.18	0.09		0.05	0.03	
at 1 %	0.29	0.09		0.09	0.20		0.24	0.12		0.07	0.04	
S. A. R.												
S.A.R. 6	2.49	1.51	2.00	1.47	0.43	0.95	3.81	3.87	3.84	1.97	2.20	2.09
S.A.R. 12	2.50	1.29	1.90	1.28	0.43	0.86	3.80	4.09	3.95	2.07	2.34	2.21
L.S.D. at 5 %	N.S.	0.14		0.04	N.S.		N.S.	0.05		N.S.	N.S.	
at 1 %		0.19		0.05				0.07				
Cultivars												
Gizi	2.87	1.54	2.21	1.51	0.50	1.00	4.03	4.05	4.04	2.13	2.27	2.20
Sultani	2.12	0.99	1.56	1.24	0.30	0.77	3.79	3.91	3.85	1.91	2.24	2.08
L.S.D. at 5 %	0.14	0.14		0.14	0.09		0.11	0.05		0.03	0.02	
at 1 %	0.18	0.19		0.18	0.12		0.15	0.07		0.04	0.03	

Table (23): Effect of interaction between concentration X S.A.R. in irrigation water on Potassium and Calcium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(K) %						(Ca) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	CONCENTRATION X S.A.R.											
Control (tap water)	2.75	1.40	2.07	1.03	0.60	0.81	2.75	3.43	3.09	1.63	1.74	1.68
2000 P.P.M. S.A.R. 6	2.26	1.19	1.72	1.34	0.49	0.89	3.31	3.43	3.37	1.83	1.83	1.83
2000 P.P.M. S.A.R.12	2.65	1.33	1.99	1.11	0.45	0.78	3.76	3.83	3.79	1.98	1.89	1.93
4000 P.P.M. S.A.R. 6	2.67	1.05	1.86	1.79	0.37	1.08	3.99	3.73	3.86	1.96	2.04	2.00
4000 P.P.M. S.A.R.12	2.31	1.17	1.74	1.30	0.34	0.82	3.25	4.16	3.70	2.12	2.40	2.26
6000 P.P.M. S.A.R. 6	2.25	1.37	1.81	1.42	0.34	0.88	4.13	4.19	4.16	2.21	2.45	2.45
6000 P.P.M. S.A.R.12	2.47	1.35	1.91	1.24	0.38	0.81	4.37	4.42	4.39	2.33	2.69	2.51
8000 P.P.M. S.A.R. 6	2.50	1.17	1.83	1.18	0.35	0.76	4.51	4.58	4.54	2.33	2.98	2.65
8000 P.P.M. S.A.R.12	2.33	1.21	1.77	1.12	0.37	0.74	4.50	4.63	4.56	2.41	2.98	2.69
L.S.D. at 5 %	0.31	0.32		0.09	0.21		0.26	0.12		0.05	0.05	
at 1 %	0.42	0.43		0.13	0.28		0.35	0.17		0.06	0.06	

Table (24) : Effect of interaction between cultivar X concentrations and cultivar X S.A.R. in irrigation water on Potassium and Calcium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(K) %						(Ca) %					
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	CULTIVAR X CONCENTRATION											
GIZI Control (tap water)	3.00	1.48	2.24	1.73	0.70	1.21	3.20	3.43	3.31	1.60	1.66	1.63
GIZI 2000 P.P.M.	2.98	1.51	2.24	1.55	0.54	1.04	3.64	3.73	3.68	2.08	1.89	1.98
GIZI 4000 P.P.M.	2.62	1.39	2.00	1.61	0.43	1.02	4.26	4.04	4.15	2.25	2.22	2.23
GIZI 6000 P.P.M.	2.90	1.93	2.41	1.30	0.46	0.88	4.34	4.46	4.40	2.33	2.61	2.47
GIZI 8000 P.P.M.	2.84	1.41	2.12	1.36	0.38	0.87	4.70	5.59	5.14	2.43	3.00	2.71
SULTANI Control (tap water)	2.50	1.32	1.91	1.53	0.50	1.01	3.10	3.43	3.26	1.46	1.83	1.64
SULTANI 2000 P.P.M.	1.95	1.01	1.48	0.90	0.40	0.65	3.43	3.53	3.48	1.73	1.83	1.78
SULTANI 4000 P.P.M.	2.36	0.83	1.59	1.48	0.28	0.88	3.98	3.85	3.91	1.84	2.22	2.03
SULTANI 6000 P.P.M.	1.81	0.80	1.30	1.36	0.27	0.81	4.15	4.15	4.15	2.21	2.53	2.37
SULTANI 8000 P.P.M.	1.98	0.97	1.47	0.93	0.34	0.63	4.31	4.61	4.46	2.31	2.96	2.63
L.S.D. at 5 %	0.31	0.32		0.09	0.21		0.26	0.12		0.08	0.05	
at 1 %	0.42	0.43		0.13	0.28		0.35	0.17		0.11	0.06	
	Cultivar X S. A. R.											
Gizi S.A.R. 6	2.90	1.51	2.20	1.49	0.50	0.99	3.98	3.96	3.97	2.08	2.20	2.14
Gizi S.A.R. 12	2.83	1.57	2.20	1.53	0.50	1.01	4.08	4.14	4.11	2.17	3.35	2.76
Sultani S.A.R. 6	2.07	0.96	1.51	1.45	0.36	1.51	3.66	3.78	3.72	1.86	2.21	2.03
Sultani S.A.R. 12	2.17	1.02	1.59	1.02	0.36	0.69	3.92	4.05	3.98	1.96	2.33	2.14
L.S.D. at 5 %	N.S.	N.S.		0.06	N.S.		N.S.	0.08		0.05	0.03	
at 1 %				0.08	N.S.		N.S.	0.10		0.06	0.04	

Table (25) : Effect of interaction between cultivar X concentrations X S.A.R. in irrigation water on Potassium and Calcium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS			(K) %					(Ca) %				
	LEAVES		Average	ROOTS		Average	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987		1986	1987		1986	1987	
	CULTIVAR X CONCENTRATION X S. A. R.											
GIZI	Control (tap water)	3.00	1.48	2.24	1.73	0.70	1.21	3.20	3.43	3.31	1.60	1.66	1.63
	2000 P.P.M. S.A.R. 6	2.93	1.45	2.19	1.63	0.58	1.10	3.36	3.43	3.39	1.93	1.83	1.88
	2000 P.P.M. S.A.R.12	3.03	1.57	2.30	1.46	0.50	0.98	3.93	4.03	3.98	2.23	1.96	2.09
	4000 P.P.M. S.A.R. 6	3.03	1.32	2.17	1.63	0.45	1.04	4.26	3.96	4.11	2.20	2.04	2.12
	4000 P.P.M. S.A.R.12	2.21	1.47	1.84	1.58	0.42	1.00	4.26	4.13	4.19	2.30	2.40	2.35
	6000 P.P.M. S.A.R. 6	2.86	2.00	2.43	1.18	0.42	0.80	4.26	4.43	4.34	2.33	2.50	2.41
	6000 P.P.M. S.A.R.12	2.93	1.85	2.39	1.43	0.50	0.96	4.43	4.50	4.46	2.33	2.73	2.53
	8000 P.P.M. S.A.R. 6	2.68	1.32	2.00	1.28	0.37	0.82	4.80	4.56	4.68	2.36	3.00	2.68
	8000 P.P.M. S.A.R.12	3.00	1.50	2.25	1.45	0.40	0.92	4.60	4.63	4.61	2.50	3.00	2.75
SULTANI	Control (tap water)	2.50	1.32	1.91	1.53	0.50	1.01	3.10	3.43	3.26	1.46	1.83	1.64
	2000 P.P.M. S.A.R. 6	1.60	0.92	1.26	1.05	0.40	0.72	3.26	3.43	3.34	1.73	1.83	1.78
	2000 P.P.M. S.A.R.12	2.31	1.10	1.70	0.75	0.40	0.57	3.60	3.63	3.61	1.73	1.83	1.78
	4000 P.P.M. S.A.R. 6	2.31	0.78	1.54	1.96	0.30	1.13	3.73	3.50	3.61	1.73	2.04	1.88
	4000 P.P.M. S.A.R.12	2.41	0.88	1.64	1.01	0.27	0.64	4.23	4.20	4.21	1.95	2.40	2.17
	6000 P.P.M. S.A.R. 6	1.63	0.75	1.19	1.66	0.27	0.96	4.00	3.96	3.98	2.10	2.40	2.25
	6000 P.P.M. S.A.R.12	2.00	0.85	1.42	1.05	0.27	0.66	4.30	4.35	4.32	2.33	2.66	2.49
	8000 P.P.M. S.A.R. 6	2.31	1.02	1.66	1.08	0.33	0.70	4.23	4.60	4.41	2.30	2.96	2.63
	8000 P.P.M. S.A.R.12	1.65	0.93	1.29	0.78	0.35	0.56	4.40	4.63	4.51	2.33	2.96	2.63
	L.S.D. at 5 %	0.44	0.46		0.13	0.29		0.37	0.18		0.11	0.07	
	at 1 %	0.59	0.62		0.18	0.40		0.49	0.24		0.15	0.09	

g- Magnesium content:-

Data in tables (26,27,28 and 29) obviously showed that leaf Mg++ content was decreased significantly by using different saline solutions in irrigation water as compared with those irrigated with tap water. In addition ; root Mg-content was increased significantly during the study. This result is confirmed with the findings by **Dounton(1978)** reported that Mg++ content tended to increase some what in avocado by salinity. On the other hand , **Martin and Ervin(1956)** on Avocado as well as **EL Azab and El Minessy(1975)** on Grape, Guava and Olive and **Nasr** et. al.**(1977)** on Plum showed that Mg++ content did not differ markedly with salinity condition.

As far as the effect of two levels of sodium adsorption ratio (S.A.R.) 6 and 12 treatments on leaf and root Mg++ content, the obtained results showed that S.A.R. at 12 treatment significantly decresed Mg++ content in leaves and roots than S.A.R. 6 . These results in accordance with the findings by **Bower and Wadleigh(1949)**, who concluded that increasing exchangeable sodium percentage of the substrate resulted in a decreased accumulation of magnesium in the plants.

As far as the two Fig cultivars under investigation, it is clear from table (26) that leaf and root Mg++ content was significantly increased in Sultani Fig cultivar as compared to Gizi Fig cultivar during the study.

Furthermore; comparing Mg++ content in leaves and roots as affected by salt treatment, the data disclosed that leaves had more tendency to accumulate Mg++ higher than roots.

Concerning the effect of interaction between salt concentration X S.A.R. levels on Mg content , it is clear from table (27) that leaf Mg content was decreased while root Mg content was increased as a general trend. On the other hand, the interactions between cultivar X concentration and cultivar X concentration X S.A.R. are presented in tables (28 and 29) and showed that Mg content has no definite trend. Moreover, the effect of cultivar X S.A.R. in table (28) indicated that the content was slightly increased in leaf and root in Sultani Fig cultivar as compared to Gizi cultivar during 1986 and 1987 seasons.

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Table (26): Specific effect of concentration , S.A.R. and cultivar in irrigation water on Magnessium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(Mg) % LEAVES 1986	LEAVES 1987	LEAVES Average	ROOTS 1986	ROOTS 1987	ROOTS Average
Concentration						
Control (tap water)	1.73	1.28	1.51	0.78	0.45	0.62
2000 P.P.M.	1.45	1.19	1.32	0.79	0.61	0.70
4000 P.P.M.	1.34	0.91	1.13	0.85	1.06	0.96
6000 P.P.M.	0.95	1.06	1.01	0.83	0.84	0.84
8000 P.P.M.	1.03	1.03	1.03	1.19	1.04	1.12
L.S.D. at 5 %	0.09	0.11		0.02	0.02	
at 1 %	0.12	0.15		0.03	0.03	
S. A. R.						
S.A.R. 6	1.32	1.36	1.34	0.90	0.86	0.88
S.A.R. 12	1.28	0.99	1.14	0.88	0.73	0.81
L.S.D. at 5 %	0.01	0.07		0.01	0.01	
at 1 %	0.02	0.09		0.02	0.02	
Cultivars						
Gizi	1.08	1.01	1.05	0.75	0.76	0.76
Sultani	1.53	1.34	1.44	1.02	0.83	0.93
L.S.D. at 5 %	0.06	0.07		0.01	0.01	
at 1 %	0.07	0.09		0.02	0.02	

Table (27): Effect of interaction between concentration X S.A.R. in irrigation water on Magnessium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(Mg) %					
	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987	
	CONCENTRATION X S. A. R.					
Control (tap water)	1.73	1.28	1.50	0.78	0.45	0.61
2000 P.P.M. S.A.R. 6	1.62	1.29	1.45	0.63	0.50	0.56
2000 P.P.M. S.A.R.12	1.28	1.08	1.18	0.95	0.72	0.83
4000 P.P.M. S.A.R. 6	1.23	1.35	1.29	0.96	0.76	0.86
4000 P.P.M. S.A.R.12	1.46	1.47	1.46	0.74	1.32	1.03
6000 P.P.M. S.A.R. 6	0.97	1.55	1.26	0.89	0.91	0.90
6000 P.P.M. S.A.R.12	0.94	1.38	1.16	0.78	0.77	0.77
8000 P.P.M. S.A.R. 6	1.04	1.32	1.18	1.21	1.04	1.12
8000 P.P.M. S.A.R.12	1.01	0.73	0.87	1.17	1.05	1.11
L.S.D. at 5 %	0.13	0.16		0.04	0.04	
at 1 %	0.17	0.22		0.05	0.05	

Table (28) : Effect of interaction between cultivar X concentrations and cultivar X S.A.R. in irrigation water on Magnessium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(Mg) %					
	LEAVES		Average	ROOTS		Average
	1986	1987		1986	1987	
CULTIVAR X CONCENTRATION						
GIZI Control (tap water)	1.92	1.27	1.59	1.32	0.42	0.87
GIZI 2000 P.P.M.	1.31	1.15	1.23	0.41	0.68	0.54
GIZI 4000 P.P.M.	1.21	0.87	1.04	0.64	0.59	0.61
GIZI 6000 P.P.M.	0.37	0.59	0.48	0.37	1.15	0.76
GIZI 8000 P.P.M.	0.58	0.58	0.58	0.06	0.94	0.50
SULTANI Control (tap water)	1.55	1.28	1.41	0.25	0.48	0.36
SULTANI 2000 P.P.M.	1.59	1.22	1.40	1.17	0.54	0.85
SULTANI 4000 P.P.M.	1.47	0.95	1.21	1.06	1.48	1.27
SULTANI 6000 P.P.M.	1.53	1.76	1.64	1.32	0.53	0.92
SULTANI 8000 P.P.M.	1.47	1.48	1.47	1.32	1.13	1.22
L.S.D. at 5 %	0.13	0.16		0.04	0.03	
at 1 %	0.17	0.22		0.05	0.06	
Cultivar X S. A. R.						
Gizi S.A.R. 6	1.23	1.11	1.17	0.85	0.63	0.74
Gizi S.A.R. 12	0.92	0.91	0.91	0.68	0.89	0.78
Sultani S.A.R. 6	1.41	1.61	1.51	0.94	0.83	0.88
Sultani S.A.R. 12	1.64	1.07	1.35	1.11	0.83	0.97
L.S.D. at 5 %	0.08	0.10		0.02	0.02	
at 1 %	0.11	0.13		0.03	0.03	

Table (29) : Effect of interaction betwenn cultivar X concentrations X S.A.R. in irrigation water on Magnessium content in leaves and roots of two Fig cultivars during 1986 & 1987 seasons.

TREATMENTS	(Mg) % LEAVES 1986	LEAVES 1987	LEAVES Average	ROOTS 1986	ROOTS 1987	ROOTS Average
CULTIVAR X CONCENTRATION X S. A. R.						
Control (tap water)	1.92	1.27	1.59	1.32	0.42	0.87
2000 P.P.M. S.A.R. 6	1.83	1.00	1.41	0.60	0.64	0.62
2000 P.P.M. S.A.R.12	0.78	1.31	1.04	0.22	0.72	0.47
G 4000 P.P.M. S.A.R. 6	0.93	1.17	1.05	0.65	0.27	0.46
I 4000 P.P.M. S.A.R.12	1.51	0.57	1.04	0.63	0.91	0.77
Z 6000 P.P.M. S.A.R. 6	0.61	1.27	0.94	0.60	1.20	0.90
I 6000 P.P.M. S.A.R.12	1.14	1.06	1.10	0.15	1.10	0.62
8000 P.P.M. S.A.R. 6	0.88	0.83	0.85	1.08	0.60	0.84
8000 P.P.M. S.A.R.12	0.27	0.33	0.30	1.04	1.29	1.16
Control (tap water)	1.55	1.28	1.41	0.25	0.48	0.36
2000 P.P.M. S.A.R. 6	1.42	1.59	1.50	0.66	0.35	0.50
S 2000 P.P.M. S.A.R.12	1.77	0.86	1.31	1.67	0.72	1.19
U 4000 P.P.M. S.A.R. 6	1.54	1.53	1.53	1.28	1.24	1.26
L 4000 P.P.M. S.A.R.12	1.41	0.37	0.89	0.85	1.72	1.28
T 6000 P.P.M. S.A.R. 6	1.33	1.83	1.58	1.19	0.61	0.90
A 6000 P.P.M. S.A.R.12	1.74	1.70	1.72	1.46	0.44	0.95
N 8000 P.P.M. S.A.R. 6	1.20	1.82	1.51	1.33	1.84	1.48
I 8000 P.P.M. S.A.R.12	1.75	1.14	1.44	1.30	0.80	1.05
L.S.D. at 5 %	0.18	0.23		0.05	0.05	
at 1 %	0.25	0.31		0.06	0.06	