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***Research Article***

# THE STUDYING OF THE EFFECTS OF SALINITY TENSION ON THE GROWTH PARTICULARS AND THE PROCEDURE OF CORN (*ZEA MAYS*)

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## ABSTRACT
Certainly, the salinity influences on about of 10 percent of cultivating lands of the agricultural plants of the world. All of the soils are content of salts of solution in water but, when the amount of these salts is prejudicial for budding of seeds, in this case, they influence on the growth and operation of plant. Corn have spared fastly and have formed the main food, because of its numerous particulars especially, compatibility power with various climate conditions. This research lasted for 5 months and for morphological and physiological particulars and the relation of their particulars with bearing of salinity in the farm of agricultural college of shahid Bahounar university of Kerman. In this stage, two variety of maize of single cross (504) and three v cross (647) which were influenced four levels of salinity attendances of 2, 4, 6, 8 ds/m that resulting in compounding of two salt of sodium chloride and calcium chloride in the proportion of 1:5 were studied in yet factor in the farm of project of completely accidental with 3 repetitions. In growth stage, salinity decreased the characteristics of tem such as dry weight of stem, stem diameter and stem length. Although, sensitiveness of these characteristic to salt density was not similar, and stem length and stem diameter attributes to salinity were most resistant and dry weight was most sensitive of attribute to salinity. In addition to the negative effects of salinity tension on characteristics of stem, the characteristics of leaf ware influenced by salinity. In addition to, the decreasing of the numbers of leaves, the leaf surface decreased, with increasing of salinity. Salinity had negative effects on operation and the elements of procedure of maize. The seed procedure, the weight of 100 seeds, the numbers of row in maize and the number of seeds in raw decreased.

***Key words:*** *Corn, Salinity Tension, Growth Attributes*.

## INTRODUCTION
Salinity is one of main problems in producing of agricultural and garden products and a serious problem of environmental and the most important factor in the decreasing of operation of agricultural products which is cultivate in these farms. Now, more than 13 percent of under cultivation farms of world and about 30 to 50 percent of under irrigation of world are in flounced by salinity. On the other hand, the increasing of population and the increasing need to agricultural products such as grains and on the other hand, the limitation of products resources, and with attention to this that these limited resources are decreasing in result of various destructive factors, attention to maintenance of producing sources is inevitable with regards to increase of prevention of decreasing of producing, but with attention to this that the area of cultivating lands is limited, and the surface of under cultivating of lands will decreasing, because of the shortage of raining, annually, and high temperature which it causes to storing of salts in soil, gradually, and it follow the increasing of salinity. For solving of problem, it is necessary to find plants which can produce suitable operation in salinity conditions of environment. One of ways of increase of food materials is begin to increase of agricultural products that it causes the increasing of product operation per hectare. By correct agricultural techniques such as the choosing of suitable time for cultivate. economy in irrigation and reform of genetics of plant for cultivating in salt lands, especially the choose of resistant varieties to salt for cultivating in salt lands and alkali salt and dry and quasi-dry regions of words, especially Iran lands that they are known performs in practical agriculture (Bernousi,

1995 ; Khorshidibenam et al , 1993). In Iran, the operation of grains in surface unity that is influence by agricultural weak managements, unfavorable environmental conditioned and other factors, is settle in low surface. The producers can increase the measure of producing of products in surface unit, dramatically, with correct choosing and the providing of favorable environmental condition and the taking of correct agricultural decisions. Among of various plants, the products of grains family, especially corn, are very important, because of high operation in environmental conditions and the main industrial consumptions and domesticated animals and birds food and supplying of bread. One of useful ways for limited storage in producing is the use of agricultural plants genetics variety and their wild parents until agricultural can be developed in these regions to reform and choose of compatible genotypes. Corn (Zea mays) is spred fastly, because of its characteristics, especially the power of compatibility to various climate conditions, in great part of new world and plant is formed the main food. In world measurement, corn is the third resistant after from rice and wheat, with regard to cultivating surface and the amount of producing. Although, the source of corm is from tropical and quasi-dry regions of world, but it is not suitable for produced by dry farming conditions and it cannot resistance with millet and sorgom in conditions that rain is changeable and limited. Corn is suitable plant for dry regions and its potential procedure is greater than other grains. The producing of grains in different parts of world to be reckoned as criterion for recognition o producing and securing of food. In the world, it cannot be find civilization which the basis of its plantation and cultivation is established on plants such as grains. On the base of statics of agricultural ministry, the cultivation surface of this product was 218 thousand hectare with moderate operation of seed 42 ton in hectare in 2002 and in the world, it is 682 thousands with moderate operation of seed 612 ton per hectare in 2012. The producing of this product is 1 million and 500 thousands ton. The important of production of corn in Iran are, Gonabad, Gorgan, Khozestan, Kermanshah, Khorasan, Gillan, Mazandaran and Sharghi Azarbayejan. The most important of produced countries of corn in the world are indudded in , America, Argentina, Brazil, Colombia, Mexico, Romani, France, Hungary, Yogesllovey, Indonesia, Turkey, China, India, Philippine, Tanzania, the Republic of south Africa, Kenya, Zambia and Malawi us and Argentine are from important countries of exporter and Japan and western Europe are from the main countries of importer of corn with regard to this that Iran is the part of dry and quasi-dry regions, the amount of raining which wash to the depth of soil was not sufficient, and the intensity of evaporation is much so, the salts carried out from the depth of soil to the surface of soil with moisture. With attention to said materials. The effort for producing of corm is necessary whether via reforming and the choosing of varieties of full products and whether via the increasing of cultivating surface, with attention to climate conditions and the possibilities of our country. We must use from unfavorable resources of bounding of growth such as the use of salt water and soil resources.

## MATERIAL AND METHODS

This research lasted for 5 months and performed for comparison of two varieties of corm in aspect of morphological and physiological on the relation of these attributes with beaning of salinity in the farm of agricultural college of shahid Bahounar University. In this stage, two varieties of maize of single cross (504) and three v cross (647) which were influenced four levels of salinity attendances of 2, 4, 6, 8 ds/m that resulting compounding of two salt of sodium chloride and calcium chloride in the proportion of 5:1 were studied in factor in the form of project of completely accidental with 3 replications. For performing of this stage of test, the certs were made by cement blocks inside of earth and in 1×1 m and with high of 0.75 m, and the drain pipe was prepared, because of preventing from collecting of water in the end of certs. The suitable seeds in this test were prepared from agricultural researches center of Kerman. When temperature degree of the environment is distinguished suitable for cultivating, the seeds planted in the second decade of march and then, after that the choosing of similar seeds, in regard it size, these seeds disinfected with hypochlorite sodium of %10 and then it was washed with distilled water 3 or 5 times. These seeds planted in depth o f5 cm and with distance of 5 cm on row. Every cert was induced in two rows with distance of between rows of 50 cm. for attainment of monotonousness, first two seeds cultivate

in every peap and exiting water was guided by laying a pipe system. In the beginning of growth stage until green time, the time of irrigation was every other day and after that 5 days once, samplings test performed every 20 days once (Abid et al, 2001) and the indices of the numbers of leaves, the length of stem, the diameter of stem and the numbers of ladder, the leaf surface and relative content of water were measured from first to fourth sampling. For determining of dry material, samples were placed in oven with 70-75 ◦ C and for 48 hours ((zhengh et al, 2000), and in the final of growth season that is fifth sampling (final stage), the measurable parameters are (operation and the number of leaf – the leaf surface, leaf thickness, the proportion of surface to dry weight of leaf). The length of stem- the diameter of stem- the numbers of ladder- the length of maize- the diameter of the wood of the maize. The number of row in maize- the number of seed in row, the weight of thousands of seeds- the economics procedure- biologic procedure of proportional content of water. The measuring of leaf surface was computed. SAS software was used for analysis and variance and some ranges test of Duncan was used for comparison of averages.

## RESULTS

Dry Weight: the obtained results from analysis variance of Data showed that salt tension influenced the dry weight of leaf and stem, meaning fully, in all of size (table 1).

**Table 1 - Analysis of variance for dry weight of leaf, stem and all the different sampling.**

| | **Dry Weight of leaf (M.S)** | | | **df** | **S.O.V** |
|---|---|---|---|---|---|
| 4 | 3 | 2 | 1 | | |
| 82/01 ns | 12/22ns | 2/08ns | 0/27** | 1 | **variety** |
| 450/02** | 16/23ns | 26/34** | 0/07** | 3 | **salinity** |
| 31/90 ns | 35/26ns | 0/17ns | 0/003ns | 3 | **salinity * variety** |
| 53/93 | 22/63 | 3/81 | 0/004 | 16 | **Error** |
| | **Dry Weight of stem (M.S)** | | | | |
| 4 | 3 | 2 | 1 | | |
| 121/15 * | 63/74ns | 0/02** | 0/02** | 1 | **variety** |
| 404/67** | 109/34* | 0/01** | 0/01** | 3 | **salinity** |
| 116/82* | 5/34ns | 0/001 ns | 0/001ns | 3 | **salinity * variety** |
| 30/47 | 30/19 | 0/0005 | 0/0005 | 16 | **Error** |
| | **Dry Weight of total (M.S)** | | | | |
| 4 | 3 | 2 | 1 | | |
| 844/8 ns | 22/93 ns | 88/55 ns | 0/42** | 1 | **variety** |
| 5008/4** | 341/87 ns | 229/45* | 0/12** | 3 | **salinity** |
| 997/4* | 438/72 ns | 5/71 ns | 0/01ns | 3 | **salinity * variety** |
| 250/96 | 162/44 | 53/16 | 0/006 | 16 | **Error** |

* ،**, NS : Respectively 5% and 1% Significant , not significant

The comparison of data average showed that, in all of sizes, dry weight decrease with increasing of salt tension and the greatest of dry weight belonged to example attendance of 8 ds/m (table 2).
The procedure of changes of dry weight of stem and leaf showed that embryo stage was most sensitive of stage to salt tension and with increasing of salinity to 4 ds/m, it is seen that meaningful decreasing in dry weight of stem. In the end of period, the dry weight of leaf was showed meaningful difference in example attendance and 4 ds/m and with regard to decreasing of dry weight of leaf, it wasn't seen meaningful difference, among the other attendance, on the base on comparison of average of data, dry weight of stem categories in 3 classes, in the end of period and the least dry weight belonged to attendance of 8 ds/m and the greatest of its belonged to example attendance and it was not seen the meaningful difference, between attendances of 4 to 6 ds/m and 6 to 8 ds/m. with studying of changes procedure of dry weight of whole of aerial organs, similar procedure was obtained with dry weight of leaves (table 2). Salt tension leads to

decrease of photosynthesis, breakdown of proteins and decrease of leaves and stem growth, that it causes decrease of collecting of dry material in leaf and stem, finally.

**Table 2 - Effect of salinity on dry weight of leaf, stem and total (g) of the sample**

| **Dry Weight of leaf** | | | | |
|---|---|---|---|---|
| 4 | 3 | 2 | 1 | **salinity** |
| 35/13a | 19/73 a | 9/62 a | 0/50 a | **2** |
| 21/16 b | 16/83 a | 8/27 a | 0/42 b | **4** |
| 18/56 b | 16/47 a | 7/42 a | 0/33 c | **6** |
| 15/56 b | 16/15 a | 4/66 b | 0/25 d | **8** |
| **Mean shoot dry weight** | | | | |
| 4 | 3 | 2 | 1 | **salinity** |
| 32/15 a | 28/70 a | 13/84 a | 0/16 a | **2** |
| 21/56 b | 25/51 a | 7/85 ab | 0/14 b | **4** |
| 15/82 bc | 17/15a | 5/61 b | 0/11 c | **6** |
| 13/87 c | 16/32 a | 4/15 b | 0/081 d | **8** |
| **Mean total dry weight** | | | | |
| 4 | 3 | 2 | 1 | **salinity** |
| 99/78 a | 48/43 a | 23/43 a | 0/66 a | **2** |
| 52/97 b | 42/34 a | 16/09 a | 0/56 b | **4** |
| 40/50 b | 33/30 a | 13/03 b | 0/44 c | **6** |
| 37/32 b | 32/78 a | 8/75 b | 0/33 d | **8** |

Means with similar letters in each column are not significantly different from each other.

Also, the results of analysis of variance showed that variety and the reciprocal effects of variety in salinity con not influenced dry weight of whole of aerial organs, leaf and stem (table 1). The comparison of average of varieties obtained in regard to dry weight leaf and stem in table 3.

**Table 3 - Response of leaf dry weight, stem and all the data sampled at different stages**

| **Dry Weight of leaf (M.S)** | | | | |
|---|---|---|---|---|
| *4* | *3* | *2* | *1* | ***varieties*** |
| 18/60 a | 18/01 a | 7/20 a | 0/48 a | **sc504** |
| 23/09 a | 16/58 a | 7/79 a | 0/27 b | **tv647** |
| **Mean shoot dry weight** | | | | |
| 4 | 3 | 2 | 1 | |
| 18/01 a | 22/18 a | 6/23 a | 0/15 a | **sc504** |
| 16/58 a | 21/66 a | 9/49 a | 0/09 b | **tv647** |
| **Mean total dry weight** | | | | |
| 4 | 3 | 2 | 1 | |
| 51/71 a | 40/19 a | 13/40 a | 0/63 a | **sc504** |
| 63/58 a | 38/24 a | 17/24 a | 0/37 b | **tv647** |

Means with similar letters in each column are not significantly different from each other.

The length of stem: obtained results of analysis of variance of data showed that in all of measurements, the length of stem was influenced by salinity tension, meaning fully (table 4).

**Table 4 - Statistical analysis of the length and diameter of the stem at different stages of sampling**

| The length of stem (M.S) | | | | | df | S.O.V |
|---|---|---|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 | | |
| 860/0** | 928/77** | 294/00ns | 24/40ns | 9/25** | **1** | **variety** |
| 4120/31** | 4136/93** | 784/70* | **142/58 | 3/99** | **3** | **salinity** |
| 94/75ns | 300/70* | 77/69ns | 2/17 ns | 1/27* | **3** | **salinity * variety** |
| 49/83 | 101/29 | 213/67 | 13/58 | 0/32 | **16** | **Error** |
| **stem diameter (M.S)** | | | | | | |
| 5 | 4 | 3 | 2 | 1 | | |
| 1/79ns | 1/94ns | 4/48ns | 0/39 ns | 1/10* | **1** | **variety** |
| 115/96** | 40/85** | 38/71 ** | 10/15** | 4/79** | **3** | **salinity** |
| 0/19ns | 2/2 ns | 3/75ns | 0/53 ns | 0/11ns | **3** | **salinity * variety** |
| 3/25 | 5/61 | 4/44 | 0/61 | 0/19 | **16** | **Error** |

* ،**, NS : Respectively 5% and 1% Significant , not significant.

In all of measurements (except for final measurement, the length of stem, showed the meaning full difference in relation to example attendance with increasing of salinity to 6 ds/m and upper, but in the final measurement, attendance of 4 ds/m showed meaning full difference in relation to example attendance (table 4). Salinity tension has leaded to decrease of pressure of tourjesance and to stop of dividing and being long of cell by decreasing of semis potential. Therefore, decreasing in the length of stem was seen with increasing of salinity. The comparison of average of data showed that with increasing of salinity to 4 ds/m, the operation of seed decreased to 82/1 percent (table 12). So, the operation of seed decreased with increase of salinity but, the meaningful difference was not seen among the other of attendances of salinity. There was not meaningful difference between the operation of two varieties but the variety of single cross 504, produced the greatest operation (table 11). Also, the results showed that the length of stem in various varieties was different and although, in the beginning period (the first sampling), the variety of three v cross 647 had the greatest length of stem, but in the final of period of growth (the final sampling), it had less the length of stem in relation to variety of single cross 504 (table 6). The reciprocal of variety and salinity was meaningful only in the first and fourth sampling. In this samplings, the decrease of length of stem was seen in every two varieties, with increasing of salinity tension (table 8).

**Table 5 - Assessment of the response of stem diameter and figures in various stages of sampling**

| *Comparison of mean length* | | | | | |
|---|---|---|---|---|---|
| *5* | *4* | *3* | *2* | *1* | variety |
| 92/854a | 55/075 a | 10/2500 a | 25/242 a | 4/5917 b | **tv647** |
| 80/882 b | 62/075 a | 9/4167 a | 23/225 a | 5/8333 a | **sc504** |
| **Comparison of mean stem diameter** | | | | | |
| *5* | *4* | *3* | *2* | *1* | |
| 9/33 a | 20/03 a | 17/14 a | 11/15 a | 6/43 a | **tv647** |
| 10/00 a | 19/46 a | 16/28 a | 11/41 a | 6/00b | **sc504** |

Means with similar letters in each column are not significantly different from each other.

Stem diameter: obtained results of analysis of variance of data showed that the stem diameter influenced by salinity meaningfully in all of sampling (table 8). Although, in suring of growth period, stem diameter decreased meaningfully with salinity increasing (table 6). Figures showed, the meaningful difference, only in the first sampling with regard to stem diameter and the greatest of stem diameter belonged to variety of three v cross 647 (table 5). Reciprocal effect of variety and salinity was not meaningful in any samplings (table 9).

**Table 6 - Effect of salinity on shoot length and diameter of the sample**

| ***Comparison of mean length*** | | | | | |
|---|---|---|---|---|---|
| *5* | *4* | *3* | *2* | *1* | ***salinity*** |
| 123/27 a | 73/1 a | 29/58 a | 10/83 a | 5/92 a | **2** |
| 86/29 b | 62/0 ab | 26/02 ab | 9/67 ab | 5/68 ab | **4** |
| 75/79 c | 51/67 b | 23/32 b | 9/50 ab | 5/17 b | **6** |
| 62/12 d | 47/53 b | 18/02 c | 9/33 b | 4/08 c | **8** |
| **Comparison of mean stem diameter** | | | | | |
| *5* | *4* | *3* | *2* | *1* | ***salinity*** |
| 10/83 a | 22/72 a | 19/72 | 12/91 a | 6/97a | **2** |
| 10/17 a | 20/58 ab | 17/90 | 11/50 b | 6/75 a | **4** |
| 9/33 ab | 19/17 bc | 14/9 | 10/93b | 6/15 b | **6** |
| 8/33 b | 16/50 c | 14/34 | 9/78 c | 4/98 c | **8** |

Means with similar letters in each column are not significantly different from each other.

The numbers of leaves: in whole of samplings, analysis of variance of data showed that, the numbers of leaves were influenced salinity, meaning fully (table 7). The comparison averages of data showed that with increasing of salinity, the numbers of leaves decreased (table 8). With regard to changes producers, the numbers of leaves increased in attendance of 2, 4 and 6 ds/m from the beginning of growth period of fourth sampling and in the final sampling, plants countered with decreasing of the numbers of leaves, because of falling of leaves, but in attendance 8 ds/m, the falling of leaves occurred fastly and the numbers of leaves decreased very much, from third sampling.

**Table 7 - Analysis of variance for number of leaves, leaf samples were collected at different stages**

| ***The mean square of the number of leaves*** | | | | | | ***S.O.V*** |
|---|---|---|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 | | |
| 1/76* | 2/67ns | 4/17ns | 0/67 ns | 7/04** | **1** | **variety** |
| 10/48** | 7/00 ** | 2/78* | 5/00* | 0/49* | **3** | **salinity** |
| 0/18 ns | 2/78 ns | 0/50 ns | 2/11ns | 0/15 | **3** | **salinity * variety** |
| 0/39 | 1/58 | 1/21 | 1/62 | 0/25 | **16** | **Error** |
| **Mean square leaf** | | | | | | |
| 5 | 4 | 3 | 2 | 1 | | |
| 36002/94ns | 63283/48ns | 542093/17ns | 69344/99ns | 14923/93** | **1** | **variety** |
| 3606/81** | 5051586/67** | 1758545/83** | 777439/48** | 15277/42** | **3** | **salinity** |
| 2354079/82ns | 135355/23ns | 250461/81 ns | 6577/35ns | 802/79ns | **3** | **salinity * variety** |
| 21141/51 | 306645/38 | 216966/32 | 72385/11 | 1801/88 | **16** | **Error** |

* ،**, NS : Respectively 5% and 1% Significant , not significant

Also, the results showed that, the numbers of leaves have meaningful difference in varieties, only in first and final sampling. In the beginning of period, the numbers of leaves of variety of three v cross 647 was

greater than the variety single cross 504, but in the final of period, it was obtained the contrary result (table 9).

**Table 9 - Number of survey responses, leaf varieties in various stages of sampling**

| | | | | | |
|---|---|---|---|---|---|
| ***The mean number of leaves*** | | | | | |
| *5* | *4* | *3* | *2* | *1* | varieties |
| 8/36 b | 9/33 a | 10/25 a | 9/17 a | 6/25 a | tv647 |
| 8/90 a | 10 a | 9/42 a | 8/83 a | 5/17 b | sc504 |
| **The mean leaf area** | | | | | |
| 5 | 4 | 3 | 2 | 1 | |
| 1559/76 a | 1863/2a | 2498/6 a | 1637/7 a | 104/62 b | tv647 |
| 1535/24 a | 1965/9a | 2209/4 a | 1530/2 a | 154/49 a | sc504 |

Means with similar letters in each column are not significantly different from each other.

The results showed that the reciprocal effect of salinity in variety was not meaningful in any of samplings (table 7).

**Table 8 - Effect of salinity on leaf number, leaf area at various stages of sampling**

| | | | | | |
|---|---|---|---|---|---|
| ***The mean number of leaves*** | | | | | |
| *5* | *4* | *3* | *2* | *1* | salinity |
| 10/25 a | 10/83 a | 10/83 a | 10/3 a | 6/0a | **2** |
| 8/97 b | 10/17 a | 9/67 ab | 8/83 ab | 5/83 ab | **4** |
| 8/19 c | 9/33 ab | 9/50 ab | 8/50 b | 5/67 ab | **6** |
| 7/11 d | 8/33 b | 9/33 b | 8/33 b | 5/33 b | **8** |
| **The mean leaf area** | | | | | |
| *5* | *4* | *3* | *2* | *1* | salinity |
| 2424/6 a | 2960/1 a | 3032/9 a | 1924/4 a | 200/19 a | **2** |
| 1543/2 b | 2353/6 a | 2458/3 ab | 1759/2 ab | 128/51 b | **4** |
| 1226/9 c | 1434/9 b | 2170/8 bc | 1559/6 b | 105/39 b | **6** |
| 995/3 d | 909/7 b | 1747/6 c | 1092/5 c | 84/12 b | **8** |

Means with similar letters in each column are not significantly different from each other.

The leaf surface: the obtained results of breakdown of variance of data showed that the leaf surface influenced from salinity, meaning fully (table 7). The comparison of averages showed that, in all of samplings, the greatest of leaf surface belonged to example attendance and the least of it's belonged to attendance of 8 ds/m (table 8). The procedure of changes of leaf surface showed that the leaf surface was influenced salinity, in the beginning of growth stage of embryo, and it showed high sensitiveness to salinity tension, so it was seen the meaningful decrease in the leaf surface, with increase of salinity to ds/m and this difference was seen in the final of growth period. The leaf surface is influenced by variety, only in the first sampling and the greatest of leaf surface is influenced by variety, only in the first sampling and the greatest of leaf surface belonged to variety of single cross 647 (table 9). The reciprocal effect of variety in salinity was not meaningful in sampling (table 1).

showed that the reciprocal effect of variety in salinity didn't show meaningful difference.

Operation: The obtained results from breakdown of variance showed that salinity influenced the operation of seed (table 10).

**Table 10 - Analysis of variance for yield, number of grain per row, number of rows per corn and grain weight**

| *Mean squares of yield* | | | | *df* | ***S.O.V*** |
|---|---|---|---|---|---|
| grain weight | number of rows per corn | number of grain per row | Yield | | |
| 0/009ns | 18/08 ns | 18/96 ns | 59/30 ns | 1 | **variety** |
| 0/003ns | 490/71*** | 263/34*** | 2497/54*** | 3 | **salinity** |
| 0/001ns | 13/90 ns | 26/99 ns | 78/68 ns | 3 | **salinity * variety** |
| 0/014 | 18/56 | 28/39 | 27/11 | 8 | **Error** |

* ،**, NS : Respectively 5% and 1% Significant , not significant

The comparison of averages of data showed that, with increasing of salinity to 4 ds/m, the operation of seed decreased to 82/1 percent (table 12). So, the operation of seed decreased with increase of salinity, but the meaningful difference was not seen among the other of attendances of salinity.

**Table 12 - Effect of salinity on grain yield, number of grains per row, number of rows In the corn and grain weight**

| grain weight | number of rows In the corn | number of grains per row | grain yield | variety |
|---|---|---|---|---|
| 0/16 a | 8/17 a | 11/47 a | 12/57 a | tv647 |
| 0/12 a | 6/43 a | 9/69 a | 15/71 a | sc504 |

Means with similar letters in each column are not significantly different from each other.

There was not meaningful difference between the operation of two varieties, but the variety of single cross 504, produced the greatest operation (table 11). Also, the obtained results from analysis of variance The numbers of seed in row: the results showed that the numbers of seeds in row is influenced from salinity (table 10). The comparison of averages was showing of meaningful negative effect of salinity on the numbers of seeds in row. The greatest of the numbers of seeds in row belonged to example attendance and the least of it's belonged to attendance of 8 ds/m. but, there was not meaningful difference, between examples attendance and 4 ds/m and also, it was not seen the meaningful difference between attendancs of 6 and 8 ds/m.

**Table 12 - Effect of salinity on grain yield, number of grains per row, number of rows In the corn and grain weight**

| grain weight | number of rows In the corn | umber of grains per row | grain yield | salinity |
|---|---|---|---|---|
| 0/12 a | 20/61 a | 18/75 a | 44/45 a | 2 |
| 0/13 a | 4/92 b | 13/14 a | 7/93 b | 4 |
| 0/14 a | 3/00 b | 5/92 b | 2/74 b | 6 |
| 0/17 a | 0/67 b | 4/53 b | 1/44 b | 8 |

Means with similar letters in each column are not significantly different from each other.

The variety and the reciprocal effect of variety in salinity not be caused the meaningful difference in the numbers of seeds in row (table 10). The numbers of rows in maize: the obtained results of breakdown of variance of data showed that the numbers of row in maize is influenced by salinity (table 10) and it decrease with increasing of salinity (table 12). But the sensitiveness to salinity in the numbers of rows in maize was more than the numbers of seed in rows, and it was seen meaningful decrease in the numbers of

rows in maize, with increasing of salinity to 4 ds/m. the variety and reciprocal effect of variety in salinity could not effect on the numbers rows in maize (table 10). The seed weight: the obtained results of breakdown of variance of data showed that the seed weight was not influenced any of factors such as variety, salinity and reciprocal effect of variety in salinity (table 10). But considerable notice was that the weight of seeds increased with increasing salinity, because of decreasing of whole numbers of seed in maize.

## DISCUSSION AND CONCLUSION

In the growth stage, the comparison of averages of data showed that there is meaningful difference between the various data showed that there is meaningful difference between stems and amounts of salinity, with regard to stem attributes, such as the dry weight of stem, the stem diameter and the stem length, and all of these attribute decreased with increase of salt density. But, the sensitiveness of these attributes is not similar to salt density. The attribute of stem length and the stem diameter to salinity is more resistant and it showed the meaningful difference to others of densities, only with increase of salinity to 6 ds/. The dry weight is most sensitive of attribute to salinity and it decrease with salinity increase to 4 ds/m. because, the dry weight of stem is related to the stem length and diameter and both of them are decreased by salinity so, the decrease in dry weight of stem is logical affair. Also, because, the salinity leads to decrease of absorption of water and the decreasing of dividing, being long and cell distinct, then the decreasing in the stem length is explainable. The decrease of stem diameter is by reason of decreasing of in skin texture of direct texture that for more certain result, it is needed to make latitude cut of stem and the greater studying. In this test, the negative effects of salinity tension on stem characteristics and also, the attributes of leaf are influenced from salinity. Besides of decreasing of the numbers of leaves, the leaf surface decrease with increasing of salinity and because of decreasing of these two attributes, the decrease in dry weight occurred on the other hand, heaves perform photosynthesis and the amount of photosynthesis materials decreased with decreasing in their numbers and size, and so it is seen to decrease in the plant growth. The comparison of averages. Showed that there is meaningful difference between various amount of salinity in operation and the elements of operation. The salinity influence on the seed operation that it is related to first surface of salinity. This can showing of great sensiveness of growthing stage and fulling period of seed in proportion to salinity. With attention to that plants passed the main part of its growth period with salinity and the measure of toxin content of chlore and sodium have increased in leaves with increasing of salinity, the decrease of procedure can related to collecting of these materials inside plant. In this test, the salinity of photosynthesis decreased by the decrease of chlorophyll. It is seen that this action leads to decreasing of amount of carbohydrates for sent to storage members and consequently the measure of castoff increased and the numbers of seeds decreased. And, the salinity cause to increase of Bnsecic acid and consequently it cause to dead of seeds and the numbers of pollination flowers and the numbers of seeds have decreased.

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