Conference Proceeding

2nd Al-Noor International Conference for Science and Technology

2NCSIT2020

August 28-29, 2020
Baku, Azerbaijan

2nd Al-Noor International Conference for Science and Technology
2NICST2020

August 28-29, 2020
Baku, Azerbaijan

Sponsors




شركة نور الامو

Iraqi
Journal of
Science


IEEE
Iraq Section

IJAS



IOP
Publishing

AL-MAARIF UNIVERSITY COLLEGE


PLANT ARCHIVES


BIOCHEMICAL AND
CELLULAR ARCHIVES

Conference Program

First Day
Friday, August 28th, 2020

Registration (9:00-09:30)

The Audience Entered the Virtual Hall

Opening Conference Session (9:30-10:30)

Time	Speech	Speaker
	Welcome Words	Prof. Dr. Anwar Jaffar Mohammed
1- 9:30-09:40	Open Session: 2NICST2020 Presenter	Asst. Prof. Salman Hussain Omran
2- 9:40-09:50	Speech of The Higher Education Ministry	Prof. Dr. Alaa Abdulhasan Atiyah
3- 9:50-10:00	Speech of The Conference Chairman	Prof. Dr. Anwar Jaffar Mohammed
4-10:00-10:10	Speech of The IEEE Presenter	Prof. Dr. Sattar B. Sadkhan
5-10:10-10:20	Speech of Al-MAARREF Univ. Coll. Presenter	Prof. Dr. Yaqoub Nazim Al-Saadi
6-10:20-10:30	Speech of The Organisational Committee	Prof. Dr. Ali Adham
	Close Session: 2NICST2020 Presenter	Asst. Prof. Salman Hussien Omran

Keynote Session (10:30-12:00)

Time	Speaker	University	Title
1-10:30-11:00	Prof. Dr. Nabeel Mahee Abd	Kaffer Sheekh (Egypt)	Applications of Nano and Femtotechnology in medicine and Pharmacy
2-11:00-11:30	Prof. Dr Ali Al-Sherbaz	Northampton (UK)	Digital Transformation Strategy 2030 as a roadmap to Digital/Knowledge Economy
3-11:30-12:00	Prof. Dr Hikmat N. Abdullah	Al-Nahrain (Iraq)	Cognitive Radio
	Close Session:		Asst. Prof. Salman Hussien Omran

Break (12:00-2:00)

Presentation Sessions (02:00-04:00)

Session Theme: **Engineering A** — **Friday, August 28th, 2020**

Session Chair: **Dr. Haidar A.H. Al-Jubouri**; Session Co. Chair: **Asst. Prof. Salman Hussien Omran**

Time	Paper ID	Authors	Title
1- 02:00-02:10	EN1002	Maysoon Muhi Hilal; Maan AL-Badri;	The Impact of Iraqi Climate on The Design of The Abbasid Palaces.
2- 02:10-02:20	EN1085	Laith Jaafer Habeeb; Mohammed Mousa Al-azzawi; Ayad K. Hassan; Human Kareem Jalghaf;	Numerical Study of Lid Driven Mixed Convection in Inclined Wavy Cavity.
3- 02:20-02:30	EN1005	Safaa A.S. Almori; Imad O.Bachi Al-Fahad; Atheed Habeeb Taha Al-temimi;	Preparation and Evaluation of The Polymer- Polymer Composite by Using Neuro-Fuzzy Model.
4- 02:30-02:40	EN1006	Talib Abdulameer Jasim; Sattar Hastosh A. Alfatlawi; Baha Sami Mahdi;	Metal-ceramic Composite to Improve Wear Resistance of Aluminum Alloys Surface by Nanoceramic Electroplating.

Time	Paper ID	Authors	Title
5- 02:40-02:50	EN1007	Haider Th. Salim Alrikabi; Ihtisam A. ALHASAN; Huda Al Hachami; Firas Naji;	Vibrational Energy Calculation Simulation Studies of Molecule of Hydrogen Chloride and Carbon Oxide.
6- 02:50-03:00	EN1064	Laith Jaafer Habeeb; Ayad K. Hassan; Ali Abd Al-Nabi Abass; Salman H. Omran;	Natural Convection in Eccentric Annuli packed with Spheres.
7- 03:00-03:10	EN1027	Nazeer M. Ali Abdulah; Khire Milind;	Compaction and Water Content Effect on the Soil Water Characteristic Curves, SWCC using WP4 Dew Point Hygrometer for Charlotte Clay
8- 03:10-03:20	EN1011	Sundus Saleh Nehaba; Alaa Adnan Obayes; Hassan Saad Karkosh;	Adverse Health Effects Caused by Toxic Metals in Soil Near Industrial Activities by using Risk Assessment Approach.
9- 03:20-03:30	EN1012	Hamzah Salman AL-Mammori; Batoul G. Issa;	What Talent Depended in the World of Media and Computer Techniques for Creative Architectural Learning Design Process.
10- 03:30-03:40	EN1013	Hassanain Abdul Rhman Allami; Hamed Nayebzadeh;	Influence of Biodiesel Production Method on its Combustion Behavior.
11- 03:40-03:50	EN1054	Ali Adhem; Hunam Kareem Jalghaf; Laith Jaafer Habeeb; Nabeh Al Deroubi; Ahmed Sadeq Yousif	Optimization of Time for CAD/CAE Paperless Learning

Session Theme: **Engineering B** — **Friday, August 28th, 2020**
Session Chair: **Dr. Kadhim Alsultani**; Session Co. Chair: **Dr. Laith Jaafer Habeeb**

Time	Paper ID	Authors	Title
1- 02:00-02:10	EN1043	Laith Jaafer Habeeb; Nazar Yasir Jasim; Noora Saleh Ekaab; Tamadher Mustafa Abbas;	Effect of Nano-Fluid and Magnetic Field on The Heat Transfer.
2- 02:10-02:20	EN1045	Laith Jaafer Habeeb; Hayder Abed Dhahad; Wissam H. Alawee;	Numerical Investigation for the Discharging Process in Cold-Water Storage Tank.
3- 02:20-02:30	EN1014	Ahmed Adnan Shandookh; Salman H. Omran;	A Visualization Low Speed Subsonic Wind Tunnel Design and Construction for Laboratory Application and Uses.
4- 02:30-02:40	EN1015	Mohammed Mohammed Saeed; Abdullah Al-Momin;	Dimensioning Basra Optical Fiber Network Under Different Communication Scenarios.
5- 02:40-02:50	EN1020	Muna Khethier Abbass; Mustafa Kudair Abbas;	Optimization and Modeling of Oxidation Process Parameters of α-Brass Alloy.
6- 02:50-03:00	EN1022	Maha Khalid Kadhim; Riyadh Mwad Naife; Waleed Khalid Kadhim;	Decreasing the Power Dissipation and Switching Time in Hybrid and Gate Logic Circuit.
7- 03:00-03:10	EN1023	Ahmed Adnan Saeed; Wijdan Abdulmuttalib Mahdi;	Covid-19 Virus is Reshaping Urban System Baghdad neighborhood /419.
8- 03:10-03:20	EN1025	Mustafa H. Ali	Effectiveness Analysis of Beam Divergence in 40 Gbps FSO- CSRZ System Under Different Type of Rain and Snow.

9- 03:20-03:30	EN1026	Nazeer M. Ali Abdulah	Effect of Compaction and Water Content on the Soil-Water Characteristic Curves (SWCC) of Fine-Grained Soils using WP4 Dew Point Hygrometer for Jolly Blue Clay.
10- 03:30-03:40	EN1009	Hamza D Alobaidi; Mohammed H Alobaidi; Zaid Ali Hussain;	Analytical Study of The Economic Feasibility of Waste Incinerator Investment to Generate Electricity to Cover the Power Need of Dijlah University College in Baghdad To Get Electricity and Material Benefits.

Session Theme: Science (Computer) C **Friday, August 28th, 2020**
Session Chair: Dr. Subhi Rafeeq Mohammed; Session Co. Chair: MSc Sabiha F.Jawad

Time	Paper ID	Authors	Title
1- 02:00-02:10	AS1002	Manhal Basher Hasan Aga;	Calculating the Effect of Neural Network Parameters on Their Performance.
2- 02:10-02:20	AS1004	Mohammed Mubarak Salih;	Comparison of IoT Development Platforms Based on Device Management, Integration, and Visualization Support.
3- 02:20-02:30	AS106	Rasha Hashim Ibrahim; Abdul-Rahman Hussien Saleh;	Using Adems-Bashforth Method to Evaluate Orbital Elements of a Satellite in Low Earth Orbit under Drag Effect.
4- 02:30-02:40	AS1007	Wissam Sadiq Khudair; Hasan Hadi Dwail; Hayder Kadim Mohammed;	Oscillatory flow MHD of Jeffrey Fluid with Temperature-Dependent Viscosity (TDV) in a Porous Channel Saturated.
5- 02:40-02:50	AS1053	Atica M. Altaie; Asmaa Yaseen; Rasha GH. Alsarraj;	A Software fault estimation based on object-oriented metrics.
6- 02:50-03:00	AS1018	Ali Abbas Al-Arbo;	Tor Circuit Algorithms and Network Security.
7- 03:00-03:10	AS1052	Dahir Abbas Reda; Ismael Hadi Challoob; Salman H.Osman;	Compare Some Time Series Prediction Methods with Application.

Session Theme: Agriculture D **Friday, August 28th, 2020**
Session Chair: Dr. Raghad Salman Mouhamad; Session Co. Chair: MSc Nihal Khaleel Mousa

Time	Paper ID	Authors	Title
1- 02:00-02:10	AG1001	Doaa Khalid Kadhim; Zaid Hamid Mahmood; Falah Hassan Mousa;	Green Biosynthesis of Iron Oxide Nanoparticles and Testing Their Inhibitory Efficacy Against Some Pathogens.
2- 02:10-02:20	AG1003	Huda Enaya Mahood; Haifaa Abass Hussein;	Estimation the Essential Elements and Minerals in Catharanthus Roseus and study It's Biological Effect as Herbal Medicinal Plant.
3- 02:20-02:30	AG1007	Raghad Nawaf Gergees; Shimal Younis Abdul-Hadi; Aswan Hamdullah Aboud;	Screening, Purification, and Characterization of A-Amylase Enzyme Isolated from A Locally Xanthomonas Campestris Bacteria of Mosul, Iraq.
4- 02:30-02:40	AG1008	Aswan Abed Al Qader zaidan; Amina Abed Alelah Hamdoun; Doaa Qaseem Sabry Ali;	The Role of Efficient Use of Water Resources in Achieving Agricultural Development and Food Security in Iraq For the Period (1990-2017).
5- 02:40-02:50	AG1010	Mohammed Saeed Haras; Mohamed Bustan Haroon;	Isolation Aspergillus sp. solubility factor determination and efficacy in dissolving insoluble phosphate and phosphatase enzyme production

6- 02:50-03:00	AG1011	Khudhair J. Y. AL-Saidan;	Effect of Heat Accumulation on Length and Dry Weight of Spike for Wheat *Triticum Eastivum* L. Cultivars Fertilized with Mineral and Nanofertilization.
7- 03:00-03:10	AG1013	Yousif Yakoub Hilal; Raqeeb Hummadi Rajab; Arkan M. Sedeeq;	Plural Genetic Algorithms Approach to Control Agricultural Mechanization and Wheat Production.
8- 03:10-03:20	AG1014	Omar Mohsin Rashid; Saad Yassen Taha; Firas Jumaah Taha;	Study the Performance of Locally Manufactured Rotavator For Weed Control.
9- 03:20-03:40	AG1017	Lamiaa M. Al-Freeh; Anhar M.Al-shumary; Sundus A. Alabdulla;	The Impact of Foliar Spray with Ascorbic Acid on Some Growth Parameters and Grain Yield for Two Genotypes of Maize Zea Mays L.

Break (04:00-5:00)

Presentation Sessions (05:00-07:00) — **Friday, August 28th, 2020**

Session Theme: **Engineering A** — **Friday, August 28th, 2020**

Session Chair: **Dr. Ali Abbar khleif**; Session Co. Chair: **Asst. Prof. Salman Hussien Omran**

Time	Paper ID	Authors	Title
1- 05:00-05:10	EN1028	Samer Saeed Abdulhussein; Ashraf A. Alfeehan;	Utilization of Iron Lathe Waste and Post-tensioned Steel Reinforcement in Lightweight Concrete Ribbed Slabs
2- 05:10-05:20	EN1029	Mohammed Abd-Alnasool; Alaa H. Ali; Ali K. Nahar;	A New Hybrid Method for Reducing the High PAPR in F-OFDM System with Low Complexity
3- 05:20-05:30	EN1046	Laith Jaafer Habeeb; Faez Abid Muslim Abd Ali; Muwafaq Sh. Alwan; Hunam Kareem Jalghaf;	Enhancement the Performance of Compression Refrigeration Cycle by Cooling Condenser Air in Hot Climate.
4- 05:30-05:40	EN1047	Laith Jaafer Habeeb; Ali Abd Al-Nabi Abaas; Hasanen Mohammed Hussain; Ali Najim Abdullah Saieed;	Computational Investigation on Free and Forced Convection inside an Enclosure.
5- 05:40-05:50	EN1031	Amani Mezher Zedan; safa Aussian Abd awn;	The Effect of Bulb Size of Franki Pile in Collapsible Soil.
6- 05:50-06:00	EN1032	Ahmed Adnan Shandookh; Shaker S. Hassan; Omar Alaa Ihsan;	Investigating Different Types of Bearing on the Performance &Operation of Evaporative Cooler.
7- 06:00-06:10	EN1033	Mohammed Hasan Mustafa;	An Engineered Amelioration and Sustainability Enhancement Technique for Performance Upgrading of a Mechanical System.
8- 06:10-06:20	EN1063	Laith Jaafer Habeeb; Wajeeh Kamal Hasan; Ameer Resan Kalash; Hasanen Mohammed Hussen;	Numerical Investigation of Nanofluid in a Rectangular Microchannel Heat Sink.
9- 06:20-06:30	EN1037	Hadeer Ahmed Khudhair; Ali Laflah Abbas;	Influence of Replacing Stirrups Reinforcement by Longitudinal Steel Pate with High Performance Concrete Beams.
10- 06:30-06:40	EN1038	Salwa Tariq Omar; Fouad A. Saleh;	Impact of the Nozzle Angles, Distance between Burners, and N2 on Burning Velocity for Premixed Counter Flame.

The Impact of Foliar Spray with Ascorbic Acid on Some Growth Parameters and Grain Yield for Two Genotypes of Maize Zea Mays L.

Lamiaa. M. Al-freeh, Anhar M.Alshmmary, AND Sundus. A. Alabdulla

Field Crops Department, College of Agriculture University of Basrah, Basrah-Iraq
***Corresponding author: lamiaaalfreeh610@gmail.com**

Paper ID: 2NICST2020AG1017

Abstract— A Field experiment was carried out at the field crops department agriculture college / university of Basrah, Iraq during fall season 2019 to study the effect of foliar spray with different concentrations of ascorbic acid (0, 2, 4, 6, 8 g l-1) on some growth characteristics ,grain yield and its components of two genotypes of maize (Furat , Buhooth- 106).Treatments were arranged in according split-plot design in RCBD with three replication. The spray concentration is placed in the main plots, while the sub plots includes genotypes. Furat genotype gave the highest yield (5.560 t ha-1).Spraying ascorbic acid at the concentration of 8 g l-1 produced a maximum yield (6.320 t ha-1) .Minimum grain yield was found in the control treatment(4.230 t ha-1). Spraying of Furat genotype with a high concentration of ascorbic acid (6 and 8 g l-1) was superior and gave 7.550 and 7.232 t ha-1 as compared to all interactions.

Keywords: *Maize, foliar spray, Ascorbic acid, growth characteristics, yield component.*

I. INTRODUCTION:

Maize (*Zea mays* L.) is a cereal crop which belongs to the family poaceae. It is an important cereal crop, where ranks the third after wheat and rice in the world (Imran, 2015). It is grown widely in many countries of the world. Maize is an important cereal crop in Iraq it is widely used in both the food and by-products like corn starch, corn oil, dextrose, corn syrup, corn flakes, cosmetics, wax, alcohol (Abdullah and Karim, 2019), as well as the maize grains are rich in vitamins A, C and E, carbohydrates, proteins and essential minerals (Nuss and anumihardjo,2010) Corn is grown in Iraq in most of Iraq's governorates, the production for two seasons (spring and autumn) estimated 473.1 thousand tons for the summer season, with a total area of 515.2 thousand dunums, with an average yield of 918.3 kg dunums^{-1}. (Cotton, Potato and Maize Production Report for 2019), but the average yield is still lower than the developed agricultural countries, such as the United States (1044 t ha^{-1}) Turkey (10.75 t ha^{-1}) and Canada (9.72 t ha^{-1}) (USDA, 2019).

Consequently, it has become necessary to think about new methods that increase the yield of the unit area, including the use of chemicals that are safe in the environment and have no side or negative effects in humans and animals, to manage the crop to achieve the highest possible functional and genetic capacity. Ascorbic acid (AsA) increases the tolerance of the plant to salinity and cold (Darvishan *et al.*, 2013). It has been shown to play an important role in many plant physiological processes including growth regulation, differentiation and metabolism The use of growth regulators alone is not sufficient to raise the productivity of the crop unless it was accompanied by the use of a highly efficient variety in use of nutrients and other growth factors to improve plant growth and transformation of Photosynthesis products to economical yield (Dolatabadian *et al.*,2010).The study was conducted due to the lack of studies in the region

related to examine more details on the impact of foliar spraying with different ascorbic acid concentrations on growth, yield components and yield of Maize.

II. MATERIALS AND METHODS

The experiment was conducted at the research station/ Agriculture College/University of Basrah, Iraq (30°57 N lat.,47°80 long). during the fall seasons 2019 to study the effect of foliar spray of ascorbic acid (AsA) on growth, yield components and yield of two maize genotypes. In this experiment the split plot arrangement based on the randomized complete block design (RCBD) was used with three replications. The main plots consisted of five foliar AsA concentrations (0, 2, 4, 6, 8g l^{-1}),while the subplots included two genotypes, Furat (hybrid) and Buhooth-106 (Synthetic Variety) corresponding to V_1 and V_2 The experimental field soil was silty loam, evaluating its physical and chemical properties according to methods described in Black (1965) and Page *et al*.,(1982), (Table1). Sowing was completed on the 15th of August 2019 .The experimental unit covered an area of 12 m^2 and consisted of four ridges,70cm across, 4m long,25 cm between plants .It produced a population density about 5.7plant m^{-2}.According to soil analysis results, nitrogen was used from urea (240 kg N ha-1), it was applied at three times including sowing, six leaves and tasseling stages (Mohsin , 2007) .Phosphorous fertilizer as superphosphate of 60 kg P ha^{-1} was added through The preparation of soil .Different concentration of AsA were foliar sprayed at two growth stages ,V10(10 leaves with collars visible) and R1 (silking stage). .The plants were sprayed at the early morning with solutions using manual sprayer and the control plants were sprayed with distilled water. Weed control and irrigation were done as necessary. five plants from each plot were randomly chosen from each of the 2nd and 3rd ridges at 22nd November to determine: plant height, number of leaves ,leaf area, rows number ear^{-1}, number of grains ear^{-1}, 300 grains weight and grain yield. The data were analyzed according to means of variance analysis using the Statistical Analysis Software (SPSS) The average treatments were compared with the mean level of 0.05 using LSD test (AL-Rawi and Khalaf Alla(1980).

Table 1. Some initial physical and chemical characteristics of the soil

Soil properties	Value
pH	7.50
E.C. (ds/m)	7.83
Organic matter (g/kg)	2.30
Available N(mg/kg)	31.16
Available P(mg/kg)	17.30
Available K(mg/kg)	116.11

III.RESULTS AND DISCUSSION

Plant height(cm)

The data presented in Table (2) illustrate the response of corn genotypes for ascorbic acid foliar spraying application .The genotypes differed in plant height, where Furat (V_2) genotype gave the highest plant height of 132.63 cm, while Buhooth-106 genotype (V_1) gave the lowest plant height (127.22cm).This may be related to the variations in the genetic potential of these genotypes .These results are in line with Beiragi *et al*.,(2011) and Nwogbodulu (2016) who also reported that plant height significantly varied among different genotypes. On the other hand Foliar spray of AsA had significant effect on plant height, the highest plants were found by 8 g l^{-1} plants (141.20 cm) ,while the shortest plants were recorded by control (113.24cm). It may be due to the role of the ascorbic acid in stimulating the division and growth of cells, which led to increase in plant height (Dolatabadian *et al*.,2010).The interaction between factors (genotypes and AsA) showed significant effect on plant height, $V_2\times$ 6 g l^{-1} AsA spraying (gave the highest of plant height (144.87 cm) which is statistically at par with 4 and 8 g l^{-1} with plant height of 143.37 and 143.17 cm

respectively ,while, treatment V_3×without AsA (control) gave the lowest values of plant height (106.17cm).

Number of leaves

There were significant variation between genotypes on leaves number on plant (Table2).V_3 genotype was superior by giving the highest leaves number (11.67), while V_1 gave the lowest value (10.87). This was caused by genetic differences between the genotypes. The same results were also reported by Radma and Dagash (2013) , Enujeke (2013) .AsA treatments caused a significant effect ,the level of 6 g l^{-1} gave the highest number of leaves (12.33) compared to the control treatment, which gave the lowest (10.33) (Table 2). The interaction V1 × 6 g l^{-1} produced the highest number of leaves (12.67) in plant and V_1 × without AsA spraying produced the lowest number (9.33) (Table 2).

Leaf area (cm2)

Both maize genotypes and ascorbic acid showed significant influences on leaf area. Highest values of leaf area was obtained from the V_3 genotype (4374.45cm^2), while the lowest was made by V_1 (4275.28cm^2) .This difference was due to genetic factors which differed .Similar results were obtained by Akram *et al*.,(2013), Gomaa *et al*.,(2014) and Zaidan *et al*.,(2019). It was clear that there were significant differences in leaf area between the different concentrations of AsA. The spraying of 8 g l^{-1} gave significantly higher leaf area (4709.38 cm^2) compared to control (3923.69cm^2). The probable reason may be that AsA plays multiple roles in plant growth, such as cell division, cell wall expansion, and other processes of development (Pignocchi and Foyer, 2003). Moreover, AsA protects metabolic processes against H_2O_2 and other toxic oxygen derivatives, which have affected many enzyme activities, minimizes the damage caused by oxidative processes by synergizing with other antioxidants, and stabilizes membranes(Shao *et al*.,2008) .The interaction between the factors caused significant effect ,spraying V_3 genotype with high concentration of AsA (8 g l^{-1}) was superior (4862.25cm^2), while V_2 with control treatment gave the lowest leaf area (3888.50cm^2).

Rows number ear^{-1}

Data revealed that genotypes had no significant effect on rows number ear^{-1} (Table 2). Mean values of data showed that increasing AsA concentration consistently increased rows number ear^{-1}. Plots spraying with 8 g l^{-1} showed higher numbers of rows number ear^{-1} (13.34 rows ear^{-1}) which is statistically at par with 6 and 4 g l^{-1} with rows number ear^{-1} of 12.84 and 12.66 rows ear^{-1} ,while control plots took lower numbers of rows number ear^{-1} (11.67 rows ear^{-1}). The interaction between genotypes and AsA levels significantly affected rows number, in which V_3 genotype gave high rows number (14.00 rows ear^{-1}) .when spraying with ascorbic concentration 6 g l^{-1}, while V_2 genotype gave less rows number ear^{-1} (11.33 rows ear^{-1}) when spraying with 2 g l^{-1} of AsA.

Grains n. row-1

Statistical analysis of the data revealed no significant differences in grains per row between maize genotypes (Table 2). Mean values of the data showed that Maximum number of grains per row was found in 8 g l^{-1} of AsA (38.67 grains row^{-1}) with no differences with 4 and 6 g l^{-1} of 36.73 and 37.94 grains row^{-1} respectively , however lower number of grain number row^{-1}(34.28 grains row^{-1}) was recorded by control treatment. The role of AsA is increasing the area of the vegetative system, which resulted in giving a greater number of flower inflorescences (Abbas *et al*.,2013), it may be attributed to produced more grains per row .The interaction effects of maize genotypes and ascorbic acid showed significant influences on the number of grains per row. The highest (43.33 grains row^{-1}) and lowest (30.33 grains row^{-1}) grains per row were obtained under V_2×6 g l^{-1} and V_1×control treatment, respectively (Table 2).

300 grain weight(g)

Results showed that 300 grain weight were significantly affected by different maize varieties (Table 2). Mean values of the data indicated that higher 300 grain weight (66.76g) was found with V_3, and lower 300 grain weight (61.99g) was

observed in V_1. Influence AsA had significant effect on 300 grain weight of maize. Maximum weight recorded with the spraying of ascorbic at the rate of 8 g l^{-1}. Minimum 300 grain weight was recorded from the control plots .There were significant differences in 300 grain weight among different treatments interactions .The highest 300 grain weight of 76.47g and the lowest of 58.47g were obtained under the treatment combinations V_2×8 g l^{-1} and V_1×control treatment, respectively (Table 2). Grain yield (t ha^{-1})

Statistical analysis showed that grain yield of maize as influenced by genotypes and AsA concentration (Table 2). Highest grain yield was found for V_2 genotype (5.560 t ha^{-1}) while lowest grain yield was recorded for V_1 genotype (4.884t ha^{-1}). This result is consistent with Olaoye *et al*.,(2009) who indicated that the difference in the genotypes in the grain yield is due to genetic factors that lead to morphological, anatomical, and physiological differences. Mean values of the data showed that spraying of AsA at the concentration of 8 g l^{-1} produced maximum grain yield of 6.320 t ha^{-1}which is statistically at par with 6 g l^{-1} with grain yield of 5.729 t ha^{-1}. Minimum grain yield was found in control treatment (4.230 t ha^{-1}). This increase is a result of the increase in the rows number , grain per row and 300 grain weight (Table 2).The results of interaction showed that genotypes and AsA were significantly and positively affected grain yield .V_2 genotype spraying with high concentration of AsA 6 and 8 g l^{-1} were superior with 7.550 and 7.232 t ha^{-1} compared to all interactions of V_1 and V_2 genotypes.

IV.CONCLUSIONS

In this study, maize genotypes were highly responsive for spraying of ascorbic acid, improved most of growth and productivity parameters : Plant height, leaves number ,leaf area, , rows number, grain per rows, weight of 300 grain, and grains yield.

Acknowledgement

The authors would like to thank Dr. Yahia Jahad Shabib the manager of research station of, for providing facilities and technical assistance.

References:

[1] Abbas, M. F; Jerry, A, N. Jerry and Faisal H. A. (2013). Effect of salicylic and ascorbic acids and method of application on flowering and green yield of broad bean (Vicia faba L.) plants. Basrah J. Agric. Sci., 27 (1): 34-43.

[2] Abdullah, A.H. and Karim, A.A.K. (2019). Evaluation of F1S', F2S'hybrids, heterosis, and inbreeding depression of Maize (Zea mays L.). Tikrit J. Agric. Sci., 19(1): 1-17.

[3] Akram, M.; Ashraf, M.; Ahmad, R.; Rafiq, M.; Ahmad, I. and Iqbal, J. (2013). Allometry and yield component of maize (Zea Mays L.) hybrids to various potassium levels under saline conditions. Arch. Biol. Sci., Belgrade, 62 (4): 1053-1061.

[4] Al-Rawi, K.M. and Khalaf Allah, A.M. (1980). Design and analysis of agricultural experiments. Dar Al Kutub Printing & Publishing Est. Faculty of Agriculture and Forestry. The University of Al Mosul. Higher Education Press in Mosul. Iraq.

[5] Beiragi M.A; Khorasani S.K.; Shojaei S.H.; Dadresan M.; Mostafavi K.and Golbashy M (2011). A study on effects of planting dates on growth and yield of 18 corn hybrids (Zea mays L.). American Journal of Experimental Agriculture 1(3):110-120.

[6] Black C. A., 1965 Methods of soil analysis. Parts 1and 2. Amer. Soc. Agron. Inc. Pub. Madison, Wisconsin, U.S.A., 770 p.p

[7] Cotton, Potato and Maize Production Report .2019. Central Statistical Organization. Iraq.

[8] Darvishan,M ,Moghadam ,H. and Zahdi, H. (2013) .The effect of foliar application of ascorbic acid (vitamin C) on physiological and biochemical changes of corn (Zea mays L.) under irrigation with

holding in different growth stages .Maydica 58:195-200.

[9] Dolatabadian, A.; Modarres - sanavy, S. A., M. and K.S. Asilan. (2010). Effect of ascorbic acid foliar application on yield, yield component and several morphological traits of grain corn under water deficit stress conditions. Not. Sci.Biol., 2: 45-50.

[10] Enujeke E. C.(2013). Effects of Variety and Spacing on Growth Characters of Hybrid Maize,Asian J. of Agric. and Rural Development, 3(5): 296-310.

[11] Goman, M. A.; Radwan, F. I.; Khalil, G. A. M.; Kandil, E. E. and El-Saber, M. M. (2014). Impact ofhumic acid application on productivity of some maize hybrids under water stress conditions. Middle East J. Appl. Sci. 4 : 668-73.

[12] Imran, 2015. Effect of germination on proximate composition of two maize cultivars. J. Bio. Agri and H.Care.5:3: 123-128.

[13] Mohsin, K.H. (2007). Response of Yellow corn to different levels of nitrogen, iron and zinc elements and their interventions under the southern region of Iraq, Ph. D. Thesis, Coll. Agric., Univ. Basra: 175pp. (In Arabic):

[14] Nuss, E. T., and Tanumihardjo, S. A. (2010). Maize: a paramount staple crop in the context of global nutrition. Comprehensives Review in Food Science and Food Safety 5(4): 415-436.

[15] Nwoguduhu G. N. (2016). Response of Maize (Zea mays L) varieties to planting densities. IOSR Journal of Agriculture and Veterinary Science, 9(10): PP 01-06.

[16] Olaoye, G. ; Ajala, S.O. and Adedeji , S.A.(2009). Participatory selection of a maize (Zea mays L.) variety for the control of stem borers in a southeastern Nigeria location, Journal of Food, Agriculture & Environment 7 (2) : 508-512.

[17] Page, A. L.; Miller, R. H. and Keeney, D. R. (1982). Methods of Soil Analysis, Part 2, 2nd edn. ASA Inc. Madison, Wisconsin, U. S. A.

[18] Pignocchi, C., C. and H. Foyer, 2003.Apoplastic ascorbate metabolism and its role in the regulation of cell signaling. Current Opinion in Plant Biology 6, 379–389.

[19] Radma, I. A. M. and Dagash, Y. M. I. (2013). Effect of Different Nitrogen and Weeding Levels on Yield of Five Maize cultivars under Irrigation. Universal J. of Agric.l Res. 1(4): 119-125.

[20] Shao , H. B.; Chu, L. Y.; Zhao, H. L. and Kang C. (2008). Primary antioxidant, free radical scavenging and redox signaling pathways in higher plant cells. Int. J.Biol. Sci., 4(1):8-14.

[21] USDA. (2019). World agriculture production, foreign agriculture service, office of global analysis, Washington, Circular Series WAP: 1-18.

[22] Zaidan , Safaa A. ; Mohsin, K.H. and Muhsin, S. J. (2019). Effect of genotypes and tillage systems in some growth characteristic of maize (Zea mays L.) Basrah J. Agric. Sci., 32(2): 7-15.

Table.1 Effect of Ascorbic acid concentration on growth, yield components, and yield for two genotypes of maize during 2019 fall season.

Treatments		Plant height (cm)	Leaves number	Leaf area (cm^2)	Rows number	Grain per rows	300 grain weight (g)	Grain yield ($t\ ha^{-1}$)
Genotypes	V1	137.22	10.87	4275.28	12.88	35.76	61.99	4.884
	V2	130.63	11. 67	4374.45	12.75	37.34	66.76	5.560
LSD($P \leq 0.05$)		2.36	0.38	85.43	N.S	N.S	2.38	0.42
Ascorbic acid (g/l)	0	113.24	10.33	3923.69	11.67	34.20	59.34	4.230
	2	128.67	10.83	4411.25	12.83	35.07	62.49	5.119
	4	135.12	11.17	4459.00	12.66	36.73	63.54	5.251
	6	133.82	12.33	4451.00	12.84	37.96	65.72	5.726
	8	141.20	11.67	4309.38	13.34	38.67	70.80	6.230
LSD($P \leq 0.05$)		3.30	0.549	179.33	0.96	2.29	1.69	0.60
V_1	0	120.30	9.33	3958.88	11.33	30.33	58.47	3.648
	2	131.77	9.67	4097.25	13.33	35.47	60. 60	5.526
	4	126.87	11.33	4282.50	11.65	39.67	63.07	5.929
	6	121.77	12.67	4481.25	11.67	32.35	62.70	4.227
	8	150.23	11.67	4536.50	13.67	37.67	65.13	5.090
V_2	0	106.17	11.33	3888.50	11.76	38.20	60. 20	4.812
	2	125.57	12.00	4515.25	11.33	31.67	64.38	4.732
	4	143.37	11.00	4435.50	13.67	33.78	64.00	4.573
	6	144.87	12.00	4366.75	14.00	43.33	68.73	7.210
	8	143.17	12.00	4062.25	13.00	39.67	76.47	7.550
LSD($P \leq 0.05$)		5.77	0.95	302.38	1.84	3.78	1.27	1.55