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Effect of Magnesium Insecticide and Bio - Organic Fertilizer on Some Soil Properties Cultured with Yellow Corn Extract.

Dr. Kahramana Hussein Habib Khuzaie
University of Wasit - Faculty of Agriculture

Abstract: *The experiment was carried out in the fields of the silt loan of 2017 in Sil soil. The RCBD was used in three components. Three levels of Mg2, Mg1, Mg2, The two organic fertilizer levels are 4.0 mAg, symbolized by O1, O0 respectively and the third bio-fertilizer FB1, FB0. The results showed the following: A significant increase in CEC values was achieved in the addition of the M fertilizer (120,80,40) days of planting with an increase rate of 18.37,14.43,12.32% for the time periods respectively and by 16-20% and an increase in CEC values (M2 + FB1) in the CEC and organic matter values. The triple interference treatment achieved the highest level (M2 + FB2 + O2) in the organic fertilization.) Highest level of CEC values and organic matter. We note from the study that there is a decrease in pH, thus increasing nutrient availability in the soil and the presence of the effect of triangular intervention in reducing the degree of reaction of increased nutrient readiness in the soil Keywords:*

Keywords: *Magnesium - organic fertilizer - and vitality - soil qualities*

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I. Introduction

Magnesium is a key element in plant nutrition and has a significant effect on photosynthesis. Magnesium is the center of the chlorophyll molecule, which accounts for 2.7% of its partial weight. It is essential for the stabilization of the ribosomes on the endoplasmic network and the activation of many enzymatic reactions. (Hasan and others 1995) Recently, researchers have been interested in adding bio-fertilizers in several areas of the world, whether bacteria or fungal, or both, after isolation and added by a vaccine to add to the soil or work with seeds and crops are many and this leads to the tendency to fertilize different sources (Dodhinch et al., 2011). The interest in bio-fertilization (bio fretilizers) has also begun to play an active role in improving soil fertility and thus contributes to environmental pollution and is a cheap source of food. Relatively pricey. As alternatives to chemical fertilizers (McMahar, 2008)

Objective of the research.

1 - Study the effect of magnesium fertilizer, organic manure and bio-fertilizer and its interactions in some soil properties pH and CEC and organic matter.

2 -Effect of fertilizers mentioned above during the period. 40-80-120 days after planting and yield of mainland

II. Materials and methods of work

Soil was implemented for the season (2017) In mixed green soil and shown in tables (1), smoothing and sowing, and was divided into units. The plants were distributed according to the RCBD and three replicates. The total number of plates was 36, Kg-The seed of yellow maize (Zea mays L) was planted with a research class 106, which is 25 kg shaped lines in the panels . If the distance between the line and another 50 cm between the estate and the other. 25Cm and with plant density (8000)plant placed3-2 Seed in each estate after two weeks of germination and then the plants were reduced to one plant in each nut was fighting the yolk of the corn using the herbicide dabazione granulated 10% effective material and the amount of 6kg was conducted operations of the service of the crop of sinking and grassed as needed. The field was fertilized with nitrogen and potassium fertilizer And phosphate if the nitrogen is added to the 200kg in the form of urea (46%)and potassium sulphate 160kg (K%41.5) and for all the experimental treatments. Fertilizers were mixed and added to lines at planting. Nitrogen was added in the first two half of the quantity at the planting and the other half at the vegetative stage. The organic fertilizer was added before planting by 106kg In addition to cracks by line of cultivation at a depth of 10 cm before planting B1 and B0respectively

Table (1) Some chemical and physical properties of the soil of the study before planting

Adjective		Quantity	measruing unit
Soil interaction (PH) (1: 1)		7.60	-----
EC (1: 1)		3.40	Desi Siemens. M^{-1}
Exchange capacity of positive ions CEC)		23.50	We will fund shipment. Kg^{-1} soil
Organic matter		11.30	Kg kg^{-1}
Calcium carbonate ($CaCO_3$)		193.80	Kg kg^{-1}
Ions	Calcium	11.94	Mimol . L^{-1}
	magnesium	6.50	Mimol . L^{-1}
	Potassium	0.12	Mimol . L^{-1}
	Sodium	10.31	Mimol . L^{-1}
Negative dissolved ions	Carbonates	Nill	Mimol . L^{-1}
	Bicarbonate (HCO_3-)	6.88	Mimol . L^{-1}
	Sulfates	8.87	Mimol . L^{-1}
	Chlorine	13.21	Mimol . L^{-1}
Elements Ready-made	Nitrogen NO_3^- - N)	16.00	amalgam. Kg^{-1}
	Nitrogen NO_4^+ - N)	31.00	amalgam. Kg^{-1}
	Phosphorus	17.00	amalgam. Kg^{-1}
	Potassium	276.00	amalgam. Kg^{-1}
Field capacity		25.60	%
Virtual density		1.36	Mica Gram. M^{-3}
Analysis of soil minutes volumes	the sand	232.60	Kg kg^{-1}
	The gluten	543.56	Kg kg^{-1}
	Clay	221.84	Kg kg^{-1}
Class the tissue		Incense Greenwich	

The soil samples of the plates were randomly selected in a representative form prior to planting from the surface layer (20-0)cm and then dried for 2 ml and mixed to form a composite sample. Physical and chemical analyzes as soil samples were collected from each plate for each stage of the maize plant growth at times (125,85,45)from agriculture. Measure the volumetric distribution of the soil minutes in a pipette-based manner. For the method contained in. (1) The pH of 1: 1 was estimated by using the pH meter according to the method used in Jacson (1958). Electrical conductivity (EC) was measured in the 1: 1 extract using The Conductivit Bridge Electrical device. According to Jacson (1958), the exchange capacity of positive cation (CEC) was estimated using NH4OAC (IN). (PH = 7.0) for the method described in. Black (1965) Potassium Sodium and Potassium by Flame Photometer According to the method presented in Jacson (1958). The amount of dissolved calcium corrected with Farsite (Na2-EDTA) using a revealer Ammonium purpurate by method Heald ,Lanyon(1982) calcium - magnesium detector by correcting with Farsite(Na2-EDTA) using EBT (Erchrome Black) and then subtracting calcium with total (calcium + magnesium) according to the method of Heald , Langon. Percentage of calcium carbonate minerals using. (NHCl) The remainder of the acid was eroded by (1N) NaoH According to Jacson (1958). Potassium ammonium (NH4-N) prepared by potassium chloride solution (2MKCl) and magnesium oxide MgO Nitrate (NH3-N) was estimated after ion ammonium ionization and reduction of nitrate ion to ammonium (NH4) by Devarl alloy and distillation with the microcodal and in the Nelson Keeney method, described in 1982, Phosphorus was estimated using 0.5 NaHCO3 at pH = 8.5 according to the Olsen method in page (1982). The color was developed with ammonium polysaccharides and ascorbic acid and was estimated using the Spectrophotometer spectroscopy at 882 nm Chlorine was estimated to be corrected with silver nitrate (0.05NagNo3) according to Jacson (1958). So4 sulphate (Turbidity) and

Spectrophotometer spectroscopy were estimated in Bashur. Potassium was extracted by NH4OAc (1N) at pH (7) and measured by the Flame photometer according to the method presented in page (1982).

III. Results and discussion

The results of the tables (1,2,3) showed that the levels of manganese manure did not affect the values during the growth periods of 40 days of planting when the values of the coefficients were significantly lower than the periods 80-120 days but the results showed in the tables a significant decrease in pH values With the organic fertilizer added at the time period we note a significant decrease in values of the degree of soil reaction pH is due to the decomposition of organic matter, which decomposes especially at time 120 days. The results showed that there were no significant differences in the levels of biomass treatments at pH at 40 days from planting, while at the time of 80-120 days, the values of the organic matter and the release of the organic acids that reduced pH (1988, Hevnrg) Havlin2005. The coefficients were significantly reduced if the highest drop was 7.65.7.65pH of the biomass.

Table (1) Effect of Manganous Fertilizer and Organic and Bio fertilizer in soil reaction pH at time (40) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M0	M_0	7.90	7.80	7.85
	M_1	7.69	7.67	7.68
M1	M_0	7.77	7.72	7.74
	M_1	7.64	7.57	7.60
M2	M_0	7.73	7.71	7.72
	M_1	7.62	7.52	7.57
LSD (0.05)		0.37		0.26

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	7.79	7.73	7.76
	M_1	7.70	7.64	7.67
	M_2	7.67	7.61	7.64
LSD (0.05)		N.S		N.S

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	7.80	7.74	7.77
	M_1	7.65	7.58	7.61
LSD (0.05)		0.21		0.15

Bio fertilizer (FB)	7.72	7.66
LSD (0.05)	N.S	

Table (2) Effect of Manganous Fertilizer and Organic and Bio fertilizer in soil reaction pH at time (80) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	7.90	7.80	7.85
	M_1	7.67	7.66	7.66
M_1	M_0	7.78	7.69	7.73
	M_1	7.65	7.57	7.61
M_2	M_0	7.76	7.68	7.69
	M_1	7.58	7.55	7.56
LSD (0.05)		0.08		0.06

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M	M0	7.78	7.73	7.75
	M1	7.71	7.63	7.67
	M2	7.64	7.61	7.62
LSD (0.05)		0.06		0.04

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	7.79	7.72	7.75
	M_1	7.63	7.59	7.61
LSD (0.05)		0.05		0.03

Bio fertilizer (FB)	7.71	7.65
LSD (0.05)	0.03	

Table (3) Effect of Manganous Fertilizer and Organic and Bio fertilizer in soil reaction pH at time (120) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	7.86	7.80	7.83
	M_1	7.66	7.65	7.65
M_1	M_0	7.79	7.68	7.73
	M_1	7.63	7.56	7.59
M_2	M_0	7.69	7.67	7.68
	M_1	7.57	7.51	7.54
LSD (0.05)		0.10		0.07

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	7.76	7.72	7.74
	M_1	7.71	7.62	7.66
	M_2	7.63	7.59	7.61
LSD (0.05)		0.07		0.05

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	7.78	7.71	7.74
	M_1	7.62	7.57	7.59
LSD (0.05)		0.05		0.04

Bio fertilizer (FB)	7.70	7.64
LSD (0.05)	0.04	

The results in the tables above showed significant differences in the binary interaction between the levels of the manganese and organic manure for the period of time in which the activity of some types of bacteria with the organic fertilizer leads to the degradation of organic matter and the degradation of microorganisms. The highest decrease of 7.27,7.26 and 7.54 PH for the time period respectively at the interference level (M1 + FB1) The differences between the levels of manganese and bio-fertilizer treatments were significant. Among the results in tables (3,2,1) there was a decrease in the pH values and the duration of the period 120,80 days with the highest decrease in the pH values of 7.59,7061 (M + FB1). For 40 days of cultivation, the results showed no significant effect on the values of the soil-soil interference coefficients for the 80,40 time periods, where the highest soil pH values were 7.58.7.57 The mean differences in mean values for the time periods were 120,80,40 days, respectively This is consistent with what happened (Dadhich, 2011, et al.), Which gives the importance of triple interference in reducing the pH degree, thus increasing nutrient

readiness in the soil The results in tables (6,5,4) showed a significant increase in CEC soil values, with the increase of the values of the level coefficients with the addition of the magnesium fertilizer for the periods 120,80,40 days of planting and the treatment level exceeded 20 kg at the highest CEC rate and the increase in values of 18.37 , 14.33,12.33% for a period of time respectively due to the presence of organic fertilizer and bio with magnesium and their effect on the values of CEC in the soil and this is confirmed by the role of organic fertilizer and bio-magnesium and their impact on the values of CEC in the soil and this is explained by organic fertilizer in the increase shown in the values above.

Table (4) Effect of manganese Fertilizer and bio-fertilizer in the exchange capacity of positive ions (CEC) (measured in kg-1 soil) at time (40) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	18.74	22.48	20.61
	M_1	22.57	25.01	24.79
M_1	M_0	22.54	22.82	22.68
	M_1	25.48	27.12	26.30
M_2	M_0	23.69	24.27	23.98
	M_1	26.06	27.97	27.01
LSD (0.05)		3.42		2.42

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	21.66	23.74	22.70
	M_1	24.01	24.97	24.49
	M_2	24.87	26.12	25.50
LSD (0.05)		2.42		1.71

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	21.66	23.19	22.42
	M_1	25.37	26.70	26.03
LSD (0.05)		1.97		1.39

Bio fertilizer (FB)	23.51	24.94
LSD (0.05)	1.39	

Table (5) Effect of manganese Fertilizer and bio-fertilizer in the exchange capacity of positive ions (CEC) (We will charge 1kg of soil) at time (80) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	18.03	23.56	20.79
	M_1	26.45	27.13	26.79
M_1	M_0	23.48	25.73	24.60
	M_1	27.60	29.27	28.44
M_2	M_0	24.55	26.01	25.28
	M_1	28.07	30.18	29.13
LSD (0.05)		1.78		1.26

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	22.24	25.35	23.79
	M_1	25.54	27.50	26.52
	M_2	26.31	28.10	27.20
LSD (0.05)		2.42		0.89

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	22.02	25.10	23.56
	M_1	27.38	28.86	28.12
LSD (0.05)		1.02		0.72

Bio fertilizer (FB)	24.70	26.98
LSD (0.05)	0.72	

Table (6) Effect of manganese Fertilizer and bio-fertilizer in the exchange capacity of positive ions (CEC) (We will charge 1kg of soil) at time (120) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	15.74	19.72	17.73
	M_1	22.51	23.02	22.76
M_1	M_0	20.48	22.00	21.24
	M_1	22.24	26.09	24.16
M_2	M_0	21.47	22.30	21.89
	M_1	25.61	26.50	26.06
LSD (0.05)		2.08		1.47

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	19.12	21.37	20.25
	M_1	21.36	24.04	22.70
	M_2	23.54	24.40	23.97
LSD (0.05)		1.47		1.04

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	19.23	21.34	20.28
	M_1	23.45	25.20	24.33
LSD (0.05)		1.20		0.85

Bio fertilizer (FB)	21.34	23.27
LSD (0.05)	0.85	

The results of the tables indicate that the CEC values increased significantly with organic fertilization and 16-20% compared to the non-additive treatment and the studied time periods due to the increase in CEC values with organic fertilization to increase the percentage of organic matter and contain the aggregates. (CoH), which indicated a negative load on humus. The results showed that the increase in CEC values with the increase in the level of addition of manure and the time period (120,80,40) days where the level of addition of bio fertilizer significantly exceeded the level of non-addition and 9.02.9 23.6.08% for the time period (120,80,40) days respectively. The results showed that there was a significant effect on the two-dimensional interaction between magnesium levels in CEC values with an increase of 46.98,40.11,31.05% for the time periods mentioned above. The results in the tables above show a significant effect of bilateral interference in the level of MEG and CEC values for time periods The overlap resulted in an increase in CEC values with an increase in the level of intervention and a higher level of treatment of M2 + FB1 than the treatment level M0 + FB0 and 27.61,26.39.20.59% for the time periods. 120,80.40 days for agriculture The O2 + FB1 treatment exceeded the level of M0 + FB0 and the increase rate of 31.04.31.06.23.26% for the time periods 120,80,40 days of planting.

The result of the triple interference in the values was significant and the treatment was over. On the rest of the coefficients these results are consistent with Dadhich and others (2011) who found an increase in significant values in CEC soil when adding mineral, organic and bio fertilizer Results are shown in tables. (9,8,7) to the absence of significant differences in values and clear organic soil when adding magnesium manure. The results showed that there was a significant effect on the values of the processes that gave magnesium fertilizer with organic and bio fertilizer, where the increase in organic matter was increased by 2.4.2-24.4%. The results indicated in the above tables indicate that the increase in organic matter. And the increase in the organic matter with the increase in the level of addition of organic fertilizer for the periods mentioned above, where the treatment of the addition and a significant increase from the level of non-addition of 42.22-46.05-42.92% for the time period (120,80,40) days respectively, Dissolving organic compounds lead to an increase in the values of organic matter because the organic matter is degraded and converted into a humus and becomes part of the added soil material. This is consistent with Ewulo et al. (2008). The results in the tables above show a significant increase in organic matter values with an increase. The level of addition of bio-manure and the time periods where the level of addition of manure exceeded the level of treatment not add in the transactions where the increase rate of 12.29,12.71,12.31%

Table (7) Effect of manganese Fertilizer and Organic and Bio fertilizer in organic matter (O.M) (Gg-1) At time (40) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	14.00	14.48	14.24
	M_1	18.43	19.53	18.98
M_1	M_0	15.02	16.51	15.77
	M_1	20.95	24.99	22.97
M_2	M_0	15.78	17.47	16.62
	M_1	22.52	26.85	24.69
LSD (0.05)		2.29		1.62

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	16.22	17.00	16.61
	M_1	17.98	20.75	19.37
	M_2	19.15	22.16	20.66
LSD (0.05)		1.62		1.14

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	16.15	14.94	15.54
	M_1	23.79	20.63	22.21
LSD (0.05)		1.32		0.93

Bio fertilizer (FB)	19.97	17.78
LSD (0.05)	0.93	

Table (8) Effect of manganese Fertilizer and Organic and Bio fertilizer in organic matter (O.M) (Gg-1) At time (80) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	15.03	15.97	15.50
	M_1	20.15	21.12	20.68
M_1	M_0	16.65	17.36	17.01
	M_1	23.17	28.43	25.80
M_2	M_0	16.92	19.29	18.10
	M_1	25.17	29.70	27.43
LSD (0.05)		2.61		1.85

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	17.59	18.59	18.09
	M_1	19.91	22.90	21.40
	M_2	21.04	24.49	22.77
LSD (0.05)		1.85		1.30

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	16.20	17.54	16.87
	M_1	22.83	26.45	24.64
LSD (0.05)		1.51		1.06

Bio fertilizer (FB)	19.51	21.99
LSD (0.05)	1.06	

Table (9) Effect of manganese Fertilizer and Organic and Bio fertilizer in organic matter (O.M) (Gg-1) At time (120) days

Magnesium Additive Levels (M)	Levels of Organic Bio fertilizer	Levels of Bio fertilizer (FB)		Manganous Fertilizer * Bio fertilizer M.O
		FB_0	FB_1	
M_0	M_0	13.60	14.01	13.80
	M_1	17.94	19.01	18.47
M_1	M_0	14.44	15.97	15.21
	M_1	19.70	23.73	21.71
M_2	M_0	15.23	16.96	16.10
	M_1	22.03	25.96	23.99
LSD (0.05)		4.04		2.86

				Magnesium Added (mg)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	15.77	16.51	16.14
	M_1	17.07	19.85	18.46
	M_2	18.63	21.46	20.04
LSD (0.05)		2.86		2.02

				Organic Bio fertilizer (O)
Manganous Fertilizer * Bio fertilizer (FB * M)	M_0	14.42	15.65	15.04
	M_1	19.89	22.90	21.39
LSD (0.05)		2.33		1.65

Bio fertilizer (FB)	17.16	19.27
LSD (0.05)	1.65	

Dadhich et al. 2011). The results showed that the effect of the binary between the levels of manganese fertilizer in the values of O.M for the time periods 120,80,40 Days of agriculture where interference resulted in increased organic matter values with increased interference level and superior M2 + FB1 and an increase from the M0 + FB0 transaction level of. 36.08.39.22,36.62% for the above mentioned time periods. The results showed that there was a significant effect of the interaction between the levels of organic and biological fertilizer where the interference resulted in an increase in the values of OM with increasing interference level and time periods 120,80,40 Days of agriculture and the level of M1 + B1 exceeded by a significant increase from the level of M0 + FB0 of 58.80,63.27.59.23% for time periods The results in the tables show that there is a significant effect on the overlap of the time periods mentioned above. Triangular interference exceeded the binary and individual interference factors. The interference resulted in an increase in the values of the organic matter with the addition of the added level and the time period mentioned earlier from agriculture. The treatment exceeded O1 + FB1 + M2 and increased significantly For the treatment O0 + FB + M0 of 91.78,97.60,90.88% for the time periods (40,80,120), respectively.

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