

USING ORE MINERALS FOR FERTILIZING EGGPLANT IN RELATION TO ITS NUTRIENT, UPTAKE YIELD AND QUALITY

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ABSTRACT

A pot experiment was conducted at Agric. station of Faculty of Agric. Mansura University In 14 March; 2013 to study the effect of using some natural materials (phosphate rock and mineral sulfur ore) at two levels along with control treatment as fertilizers on eggplant growth, yield and some nutrients uptake.

Split-split complete block design was used with three replicates. The main treatments (3treatments) represent the studied natural materials and the sub-main treatments were arranged for theirs levels (two levels more than control) of the natural materials used. The sub-sub main treatments were oriented for bacterial treatments (with and without bacterial inoculation). The two levels of natural material used were 1.5 and 3 g pot⁻¹ for each one and added to surface of soil and mixed with it before planting. Urea (46% N), superphosphate (15.5% P₂O₅) and potassium sulphate (50 % K₂O₅) fertilizers were applied at rates of 2.0; 1.5 and 0.5 g pot⁻¹, respectively (200 kg urea fed⁻¹, 100 kg supper phosphate fed⁻¹ and potassium sulphate 50 kg fed⁻¹).

Data revealed that application of some natural materials as fertilizers (phosphate rock and mineral sulfur ore) to soil due to increase some growth parameters (length, diameter, fresh weight and dry weight of eggplant), increased NPK % in whole plant and fruit of eggplant, and increased some nutrient uptake both of eggplant at different periods and eggplant fruit at two collections.

INTRODUCTION

Solanum melongena L. (known as eggplant of America and aubergine in France and England) is one of the few cultivated solanaceous species originating from the Old World. It is known as brinjal in its home country, India, where it was domesticated long ago and where the greatest diversity is found.

In Egypt, eggplant is cultivated long ago because Egyptian people like to eat it in different farms. It's production is 1291 thousand tons year⁻¹. Nutritionally the value of eggplant per 100g fresh edible portion contains 93% moisture, energy 20 cal, CHO 4g, Protein 1.1g, fat 0.1mg, fibre 1g, Ca 7mg, phosphorus 25mg, iron 0.4mg, vitamin A 70IU, thiamine 0.09mg, ascorbic acid 15mg, riboflavin 0.2mg, nicotine amide 0.6mg and niacin 0.6mg (Norman, 1992).

Phosphorus is this nutrient plays an important role on energy transfer in cells, respiration, and photosynthesis, besides being a structural component of nucleic acids, as well as of several coenzymes, phosphoproteins, and phospholipids (Grant *et al.*, 2001). Choudhary *et al.*, (2005) found that the highest values for plant growth parameters and yield were recorded with *Azotobacter*, Phosphate Solubilizing Bacteria and

farmyard manure alongwith inorganic fertilizers. The combined use of organic manure, biofertilizers and inorganic fertilizers sustained the productivity. Saif-El-Deen, (2005) found that eggplant fruit weight loss and decay were negatively correlated with P-rates application. Also, increasing P-rate up to 60 kg P₂O₅ fed⁻¹ significantly decreased the percentages of the above mentioned parameters during storage.

Sulfer is also an essential plant nutrient. It's function is somewhat like phosphorus in that it is involved in plant cell energetic. Sulfer also improves the yield and quality parameters of important vegetable crops. Sulfer is a constituent of secondary compounds viz., allin, cycloallin and thiopropanol which not only influence the taste, pungency and medicinal properties of vegetable crops but also induce resistance against pests and diseases (Tabatabai, 2001). Mahmoud (2000) found that the application of sulfur (100 kg feddan⁻¹) in combination with 0.2% P gave the best results for growth characters, total yield, dry matter (%) and mineral content (N, K and Fe) of eggplant. Phosphate content increased due to treatments of Phosphate application alone or in combination with sulfur. Haidar and Sidahmed, (2006) indicated that sulphur alone was increasing the yield of eggplant. The mixtures of chicken manure and sulphur at 8 and 12 Ton ha⁻¹ infestation later in the season (75 and 90 days after transplanting) in eggplant, However, the mixtures of chicken manure and sulphur at all tested rates increased eggplant yield compared with the control. Therefore, the main objective of this research is to evaluate the response of eggplant to some natural materials as fertilizers and their effects on growth, yield and nutrient uptake. The objective of this work is studying the effect of using some natural materials as fertilizers on eggplant growth, yield and nutrient uptake.

MATERIALS AND METHODS

This work was carried out in a pot experiment during season (2013) at Agric. station of Faculty of Agric. Mansura University, Egypt to study the effect of using some natural materials (phosphate Rock and mineral sulfur ore) at two levels along with control treatment as fertilizers on eggplant growth, yield and some nutrient uptake. Each pot was filed with 10 kg soil of Agric. experiment. The length of pot is 30 cm and its diameter is 20 cm. Eggplant seedlings of variety, White ice, were cultivated on 14th of March 2013 and each pot was irrigated up to field capacity of soil (40% moisture content) and the amount of water needed was calculated by difference in weight of pot at every irrigation, between field capacity and moisture content before irrigation. Air dry soil samples after sieving were taken for analysis according to Jackson (1967) before planting (Table1) and after harvest to study some soil physical and chemical properties and also it was extracted for determine some available nutrients contents

Table 1: Some physical and chemical properties of experiment soil

Partial size distribution				Available Nutrient, mg/kg soil			Soluble cations (meq L ⁻¹)				Soluble Anions (meq L ⁻¹)			
Sand%	Silt%	Clay%	Texture				Ca ⁺²	Mg ⁺²	Na ⁺	K ⁺	HCO ⁻	Cl ⁻	SO ₄ ⁻	CO ₃ ⁻
15.90	44.47	39.63	clay soil	N	P	K	5.4	1.7	3.2	0.5	2.5	4.6	3.7	0.00
				19	7	320								
Some Physical and Chemical properties														
pH (1:2.5)		EC dSm ⁻¹		Organic matter (%)			Total CaCO ₃ (%)			Field capacity (%)				
7.8		2.8		2.05			2.02			42.20				

Split-split complete block design was used with three replicates. The main treatments (3treatments) represent studied some natural material and the sub-main treatments were arranged for their levels (two levels along with control) of the natural materials used. The sub-sub main treatments were oriented for bacterial treatment (with and without bacterial inoculation). The two levels of natural material used were 1.5 and 3.g pot⁻¹ for each one and added to surface of soil and mixed with it before planting. Urea (46% N), superphosphate (15.5% P₂O₅) and potassium sulphate (50 % K₂O) fertilizers were applied at rates of 2.0; 1.5 and 0.5 g/pot respectively. (200 kg urea fed⁻¹,100 kg supper phosphate fed⁻¹ and potassium sulphate 50 kg fed⁻¹).Nitrogen fertilizer was applied in three doses, the first one was applied after 15 days from planting and the second one after one month and the third one after two months from planting, while phosphorus fertilizer was applied before planting and Potassium fertilizer was applied in two doses, the first one after 15 days from planting and the second one after one month from planting. The plant were thinned to one plant in each pot after one month from planting. Effect of using some natural materials as need to determine the following parameters:

1. length of eggplant fruit.
2. diameter of eggplant fruit.
3. fresh weight of eggplant fruit.
4. dry weight of eggplant fruit.
5. NPK % in eggplant at the end of cultivation.
6. NPK % in eggplant fruit at the fifth collections.
7. NPK uptake of eggplant at different periods
8. NPK uptake of eggplant fruit at two collections.

Chemical composition: Plant and fruit samples were taken at different periods; washed with distilled water; dried at 70C⁰ in oven until constant weight; grounded and kept for chemical analysis according to page, *et al.*, (1982). 0.2 g from each dried plant sample was digested by adding 2ml from sulphoric acid overnight and then 0.2ml mixture (1:1) of both perchloric and sulphoric acids was added to sample and put on sand path

until reach to white colour. The content of each flask for each sample was diluted by using distilled water and kept in bottle of 100ml to carry and different chemical analysis of studied nutrients Nitrogen was determined according to the method described by Black, (1982); using micro-kjeldhl method. Phosphorus was determined colourmetrically according to the procedure outlined by Ryan, *et al.*, (1996). Potassium was determined using Flame Photometer according to Black, (1965).

All data were statistically analyzed according to the technique of analysis variance (ANOVA) and the least significant difference (LSD) was used to compare the difference between the mean of treatment values as described by Gomez and Gomez (1984). All statistical analyses were performed using analysis of variance technique by mean of COSTATE computer software.

RESULTS AND DISCUSSION

1-Effect of using some natural materials as fertilizers on fruit length of eggplant.

Data in Table (2) show the effect of using some natural materials as fertilizers on fruit length of eggplant at the different collections. Results illustrated that the length was influenced significantly by using studied natural materials (phosphate rock and mineral sulfur ore and). The highest value of length of eggplant fruits was obtained from treatment of mineral S ore compared to control and P rock treatment for all collection except 2nd collections.

With regard to the effect of using two levels of some natural materials as fertilizer on dry weight of eggplant fruits, results in Table (2) showed that the highest value of length of eggplant fruit was recorded from the second level (3 g plant⁻¹) compared to control and the first level (1.5 g plant⁻¹) for all collection.

Concerning the effect of using some natural materials as fertilizers with bacterial treatment and without bacterial treatment on length of eggplant fruits. Also results in Table (2) revealed that the highest values of length of eggplant fruits were obtained from treatments with bacteria compared to other treatment without bacteria inoculation for all collections. As for interaction effect among treatments of using some natural materials as fertilizers, two levels of them and inoculation with bacteria or without bacteria indicated, in that general, application of (natural materials+L2(level 2)+B1(with bacteria) increased the length

T2

2- Effect of using some natural materials as fertilizers on diameter of eggplant fruit.

With respect to application of some natural materials as fertilizers (phosphate rock and mineral sulfur ore) affected diameter of eggplant fruit for different collections, the data are illustrated in Table (3). The highest value of diameter of eggplant fruits was obtained from treatment mineral S ore compared to control and P rock treatment for all collections except 2nd collection.

Concerning the effect of using two levels of some natural materials as fertilizers on diameter of eggplant fruits, results in Table (3) indicated that the highest value of diameter of eggplant fruit was obtained from the second level compared to the first level and control for all collections.

With respect to the effect of using some natural materials as fertilizers with bacterial inoculation and without bacterial treatment on fresh diameter of eggplant fruits, showed that treating eggplants with bacteria obtained the best results compared to untreated plants.

The effect of interaction among treatments of using some natural materials as fertilizers, two levels of them and inoculation with bacteria or without bacteria, results indicated that, application of (natural materials+L₂+B₁) commonly increased the diameter of eggplant fruit.

3-Effect of using some natural materials as fertilizers on fresh weight of eggplant fruit:

Data in Table (4) show the effect of using some natural materials as fertilizers on fresh weight of eggplant fruit at the different collections.

Results illustrated that the fresh weight was influenced significantly by using studied natural materials (phosphate rock and mineral sulfur ore). The highest value of fresh weight of eggplant fruits was obtained from treatment of mineral S ore compared to control and P rock treatments for all collection, except 4th collection, where the highest value is (7.98 g plant⁻¹) for the first collection.

Regarding the effect of using two levels except control of some natural materials as fertilizers on fresh weight of eggplant fruits, results in Table(4) illustrated that the best treatment was obtained from the second level of natural material used in this experiment where it recorded the highest value of fruit fresh weight compared to the first level and control.

Concerning the effect of some natural materials as fertilizers on eggplant inoculated with bacteria and uninoculated with bacterial treatment on fresh weight of eggplant fruits, results in Table (4) showed that treating eggplants with bacteria obtained the best results compared to untreated plants (control).

The effects of interactions among treatments of using some natural materials as fertilizers, two levels of them and with bacteria or without bacteria inoculate are showed in Table (4). Results indicated, generally, increasing the value of fresh weight of eggplant fruit with using natural materials containing nutrients obtained from these rocks (P and S) when applied at high level and inoculated with mixture of bacteria.

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t4

4-Effect of using some natural materials as fertilizers on dry weight of eggplant fruit:

Data in Table (5) show the effect of using some natural materials as fertilizers on dry weight of eggplant fruit at the different collections. Results illustrated that the dry weight was influenced significantly by using studied natural materials (phosphate rock and mineral sulfur ore). for 2nd and 5th collection where the highest value of dry weight of eggplant fruits was obtained from treatment of mineral S ore compared to control and P rock, but the highest value of dry weight of eggplant fruits obtained from treatment P rock compared to control and mineral S ore treatments for other collections.

Concerning the effect of using two levels (along with control) of some natural materials as fertilizer on dry weight of eggplant fruits, results in Table (5) indicated that the highest value of dry weight of eggplant fruit was obtained from the second level (3g/pot) compared to control and the first level (1.5 g/pot) for all collections.

Regarding the effect of some natural materials as fertilizers with bacterial inoculation and without bacterial treatment on dry weight of eggplant fruits, results in Table (5) showed that the highest value of dry weight of eggplant fruits were obtained from treatments with bacteria compared to other treatments uninoculated with bacteria for all collections.

The effects of interaction among treatments of using some natural materials as fertilizers, two levels of them and treating with bacteria or without bacteria are shown in Table (5). Results illustrated that, in general application of (natural materials+L₂+B₁) increased the dry weight of eggplant fruit.

5-Effect of using some natural materials as fertilizers on NPK % in whole eggplant at the end of cultivation:

Data presented in Table (6) point to application of some natural materials (phosphate rock and mineral sulphur ore) as fertilizers influenced on NPK % in whole eggplant at the end of cultivation. Application of PR to soil induced higher phosphate content % in whole eggplant. Adding of sulphur ore to soil mostly increased NPK % in whole eggplant.

Inoculation with bacteria increased NPK % in whole eggplant because its role in fixing more nitrogen and increasing the solubility of phosphorus residual in soil, and for less extent improving soil available potassium, its absorption by eggplant and percentage of content.

Increasing the level of these natural materials used for fertilizing soil with phosphorus and sulphur instead of chemical fertilizers increased NPK % in whole eggplant. These findings are in harmony with those obtained by (Sheng and Huang, 2002 and Turan, *et al.*, 2007)

T5

Table 6: Effect of using some natural materials as fertilizers on(N;P and K) concentration of whole eggplant at the end of cultivation(21:August;2013)

treatment		Bactria treat.	N%	P%	K%
	Level				
Control	Zero	B0	2.14	0.13	3.13
		B1	2.16	0.14	3.85
PR	1	B0	2.25	0.16	3.68
		B1	2.31	0.16	3.82
	2	B0	2.83	0.25	4.71
		B1	3.12	0.26	4.79
SO	1	B0	2.14	0.13	3.57
		B1	2.14	0.14	3.92
	2	B0	2.19	0.15	4.39
		B1	2.96	0.18	4.45

6-Effect of using some natural materials as fertilizers on NPK % in eggplant fruit at the fifth collection:

In the present investigation, application effects of some natural materials as fertilizers (phosphate rock and mineral sulphur ore) on NPK % of eggplant fruit at the fifth collection, of the experiment are illustrated in Table (7). Adding PR to soil recorded the highest value of phosphate % in eggplant fruit. Adding sulphur ore to soil generally increased NPK % in eggplant fruit.

Treating with bacteria increased NPK % in eggplant fruit because its role in fixing more nitrogen and increasing the solubility of phosphorus residual in soil.

Increasing the level of these natural materials used for supplying soil with phosphorus and sulphur instead of chemical fertilizers obtained higher value of NPK % of eggplant fruit.in comparison with control treatment. It can be ordered descending these materials used as follows: SO> PR> control in increment of soil available NPK. The cost of applied materials to soil is more cheaper than that chemical fertilizers used to supply soil with NPK. In the same time minimizing the quantity of these chemical fertilizers protect the soil and water from pollution and keep human health from its hazards.

Treating these rock nutrient –bearing rock materials with mixture of bacteria increased the amount of released nutrient from these rocks to soil to be in available form where plant can absorb them and uptake to promote the growth and yield even at lower or high level.

Table 7: Effect of using some natural materials as a fertilizers on (N;P and k) concentration in eggplant fruit at the fifth collection (21:Augus;2013)

treatment	Level	Bactria treat.	N%	P%	K%
Control	Zero	B0	2.43	0.32	3.42
		B1	2.59	0.32	3.44
PR	1	B0	2.66	0.36	3.92
		B1	2.65	0.36	3.91
	2	B0	2.65	0.41	3.80
		B1	2.83	0.46	4.30
SO	1	B0	2.61	0.39	3.34
		B1	2.76	0.33	3.60
	2	B0	2.77	0.33	3.65
		B1	3.06	0.44	4.68

7- Effect of using some natural materials as fertilizers on NPK uptake of eggplant at different periods:

Data presented in Table (8) point to application of some natural materials (phosphate rock and mineral sulphur ore) as fertilizers influenced on NPK uptake in whole eggplant at the different periods of cultivation. For all different periods, application of PR to soil induced the higher phosphate uptake by whole eggplant. Adding of mineral sulphur ore to soil mostly increased NPK uptake by eggplant.

Inoculation with bacteria increased NPK uptake in whole eggplant because its role in fixing more nitrogen and increasing the solubility of phosphorus residual in soil, and for less extent improving soil available potassium, its absorption by eggplant.

Increasing the application level of these natural materials used enriched with phosphorus and sulphur for soil instead of chemical fertilizers gained an increase in soil available NPK with increasing NPK uptake in whole eggplant. These findings are in harmony with those obtained by (Anith *et al.*, 2004 and Han *et al.*, 2006)

8-Effect of using some natural materials as fertilizers on some nutrients uptake of eggplant fruit at two collections:

Application of some natural materials as fertilizers (phosphate rock and mineral sulphur ore) increased NPK uptake in eggplant fruit at the first and fifth collection of the experiment as indicated in Table (9). For 1st and 5th collections adding PR to soil achieved the highest value of phosphate uptake in eggplant fruit. Application of mineral sulphur ore to soil generally increased NPK uptake in eggplant fruit.

Bacterial treatment caused less increase in potassium uptake of eggplant fruit but this effect was sharp for N and P uptake in eggplant fruit at two collections.

Increasing the application level of these natural materials used for fertilizing soil with phosphorus and sulphur instead of chemical fertilizers recorded higher NPK uptake value in eggplant fruit, because of increasing available NPK in soil which increased NPK uptake by eggplant fruit. These results are in agreement with those obtained by (Han and Lee, 2005)

T8-9

CONCLUSION

It can be concluded that using phosphate rock and mineral sulphur ore with bio fertilization is better than that chemical fertilizers because of its cheaper cost and minimizing pollution hazard for soil and water.

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استخدام المعادن الخام لتسميد الباذنجان وعلاقته بامتصاص العناصر الغذائية والمحصول وجودته
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أجريت تجربة اصص فى محطة البحوث بكلية الزراعة - جامعة المنصورة فى ١٤ مارس ٢٠١٣ لدراسة تأثير استخدام بعض العناصر الطبيعية (صخر فوسفات و خام الكبريت المعدنى) بمستويات اعلى من كترول على نمو المحصول و دراسة بعض العناصر فى الباذنجان. استخدام القيمة الاحصائى فى قطاعات كاملة عشوائية منشقة مرتين رتب وذلك فى ثلاثة مكررات. تم وضع الخامة الصخرية الطبيعية كمعاملات رئيسية وضع مستويين اضافة اعلى من معاملة المقارنة كمعامل رئيسية وامعاملات بالبيكترىا كمعاملات تحت تحت رئيسية. كانت مستويات اضافة هى ١.٥، ٣، ٥ و ١٠ و ١٥ و ٢٠ و ٣٠ و ٤٠ و ٥٠ و ٦٠ و ٧٠ و ٨٠ و ٩٠ و ١٠٠ و ١٢٠ و ١٤٠ و ١٦٠ و ١٨٠ و ٢٠٠ و ٢٢٠ و ٢٤٠ و ٢٦٠ و ٢٨٠ و ٣٠٠ و ٣٢٠ و ٣٤٠ و ٣٦٠ و ٣٨٠ و ٤٠٠ و ٤٢٠ و ٤٤٠ و ٤٦٠ و ٤٨٠ و ٥٠٠ و ٥٢٠ و ٥٤٠ و ٥٦٠ و ٥٨٠ و ٦٠٠ و ٦٢٠ و ٦٤٠ و ٦٦٠ و ٦٨٠ و ٧٠٠ و ٧٢٠ و ٧٤٠ و ٧٦٠ و ٧٨٠ و ٨٠٠ و ٨٢٠ و ٨٤٠ و ٨٦٠ و ٨٨٠ و ٩٠٠ و ٩٢٠ و ٩٤٠ و ٩٦٠ و ٩٨٠ و ١٠٠٠ و ١٠٢٠ و ١٠٤٠ و ١٠٦٠ و ١٠٨٠ و ١١٠٠ و ١١٢٠ و ١١٤٠ و ١١٦٠ و ١١٨٠ و ١٢٠٠ و ١٢٢٠ و ١٢٤٠ و ١٢٦٠ و ١٢٨٠ و ١٣٠٠ و ١٣٢٠ و ١٣٤٠ و ١٣٦٠ و ١٣٨٠ و ١٤٠٠ و ١٤٢٠ و ١٤٤٠ و ١٤٦٠ و ١٤٨٠ و ١٥٠٠ و ١٥٢٠ و ١٥٤٠ و ١٥٦٠ و ١٥٨٠ و ١٦٠٠ و ١٦٢٠ و ١٦٤٠ و ١٦٦٠ و ١٦٨٠ و ١٧٠٠ و ١٧٢٠ و ١٧٤٠ و ١٧٦٠ و ١٧٨٠ و ١٨٠٠ و ١٨٢٠ و ١٨٤٠ و ١٨٦٠ و ١٨٨٠ و ١٩٠٠ و ١٩٢٠ و ١٩٤٠ و ١٩٦٠ و ١٩٨٠ و ٢٠٠٠ و ٢٠٢٠ و ٢٠٤٠ و ٢٠٦٠ و ٢٠٨٠ و ٢١٠٠ و ٢١٢٠ و ٢١٤٠ و ٢١٦٠ و ٢١٨٠ و ٢٢٠٠ و ٢٢٢٠ و ٢٢٤٠ و ٢٢٦٠ و ٢٢٨٠ و ٢٣٠٠ و ٢٣٢٠ و ٢٣٤٠ و ٢٣٦٠ و ٢٣٨٠ و ٢٤٠٠ و ٢٤٢٠ و ٢٤٤٠ و ٢٤٦٠ و ٢٤٨٠ و ٢٥٠٠ و ٢٥٢٠ و ٢٥٤٠ و ٢٥٦٠ و ٢٥٨٠ و ٢٦٠٠ و ٢٦٢٠ و ٢٦٤٠ و ٢٦٦٠ و ٢٦٨٠ و ٢٧٠٠ و ٢٧٢٠ و ٢٧٤٠ و ٢٧٦٠ و ٢٧٨٠ و ٢٨٠٠ و ٢٨٢٠ و ٢٨٤٠ و ٢٨٦٠ و ٢٨٨٠ و ٢٩٠٠ و ٢٩٢٠ و ٢٩٤٠ و ٢٩٦٠ و ٢٩٨٠ و ٣٠٠٠ و ٣٠٢٠ و ٣٠٤٠ و ٣٠٦٠ و ٣٠٨٠ و ٣١٠٠ و ٣١٢٠ و ٣١٤٠ و ٣١٦٠ و ٣١٨٠ و ٣٢٠٠ و ٣٢٢٠ و ٣٢٤٠ و ٣٢٦٠ و ٣٢٨٠ و ٣٣٠٠ و ٣٣٢٠ و ٣٣٤٠ و ٣٣٦٠ و ٣٣٨٠ و ٣٤٠٠ و ٣٤٢٠ و ٣٤٤٠ و ٣٤٦٠ و ٣٤٨٠ و ٣٥٠٠ و ٣٥٢٠ و ٣٥٤٠ و ٣٥٦٠ و ٣٥٨٠ و ٣٦٠٠ و ٣٦٢٠ و ٣٦٤٠ و ٣٦٦٠ و ٣٦٨٠ و ٣٧٠٠ و ٣٧٢٠ و ٣٧٤٠ و ٣٧٦٠ و ٣٧٨٠ و ٣٨٠٠ و ٣٨٢٠ و ٣٨٤٠ و ٣٨٦٠ و ٣٨٨٠ و ٣٩٠٠ و ٣٩٢٠ و ٣٩٤٠ و ٣٩٦٠ و ٣٩٨٠ و ٤٠٠٠ و ٤٠٢٠ و ٤٠٤٠ و ٤٠٦٠ و ٤٠٨٠ و ٤١٠٠ و ٤١٢٠ و ٤١٤٠ و ٤١٦٠ و ٤١٨٠ و ٤٢٠٠ و ٤٢٢٠ و ٤٢٤٠ و ٤٢٦٠ و ٤٢٨٠ و ٤٣٠٠ و ٤٣٢٠ و ٤٣٤٠ و ٤٣٦٠ و ٤٣٨٠ و ٤٤٠٠ و ٤٤٢٠ و ٤٤٤٠ و ٤٤٦٠ و ٤٤٨٠ و ٤٥٠٠ و ٤٥٢٠ و ٤٥٤٠ و ٤٥٦٠ و ٤٥٨٠ و ٤٦٠٠ و ٤٦٢٠ و ٤٦٤٠ و ٤٦٦٠ و ٤٦٨٠ و ٤٧٠٠ و ٤٧٢٠ و ٤٧٤٠ و ٤٧٦٠ و ٤٧٨٠ و ٤٨٠٠ و ٤٨٢٠ و ٤٨٤٠ و ٤٨٦٠ و ٤٨٨٠ و ٤٩٠٠ و ٤٩٢٠ و ٤٩٤٠ و ٤٩٦٠ و ٤٩٨٠ و ٥٠٠٠ و ٥٠٢٠ و ٥٠٤٠ و ٥٠٦٠ و ٥٠٨٠ و ٥١٠٠ و ٥١٢٠ و ٥١٤٠ و ٥١٦٠ و ٥١٨٠ و ٥٢٠٠ و ٥٢٢٠ و ٥٢٤٠ و ٥٢٦٠ و ٥٢٨٠ و ٥٣٠٠ و ٥٣٢٠ و ٥٣٤٠ و ٥٣٦٠ و ٥٣٨٠ و ٥٤٠٠ و ٥٤٢٠ و ٥٤٤٠ و ٥٤٦٠ و ٥٤٨٠ و ٥٥٠٠ و ٥٥٢٠ و ٥٥٤٠ و ٥٥٦٠ و ٥٥٨٠ و ٥٦٠٠ و ٥٦٢٠ و ٥٦٤٠ و ٥٦٦٠ و ٥٦٨٠ و ٥٧٠٠ و ٥٧٢٠ و ٥٧٤٠ و ٥٧٦٠ و ٥٧٨٠ و ٥٨٠٠ و ٥٨٢٠ و ٥٨٤٠ و ٥٨٦٠ و ٥٨٨٠ و ٥٩٠٠ و ٥٩٢٠ و ٥٩٤٠ و ٥٩٦٠ و ٥٩٨٠ و ٦٠٠٠ و ٦٠٢٠ و ٦٠٤٠ و ٦٠٦٠ و ٦٠٨٠ و ٦١٠٠ و ٦١٢٠ و ٦١٤٠ و ٦١٦٠ و ٦١٨٠ و ٦٢٠٠ و ٦٢٢٠ و ٦٢٤٠ و ٦٢٦٠ و ٦٢٨٠ و ٦٣٠٠ و ٦٣٢٠ و ٦٣٤٠ و ٦٣٦٠ و ٦٣٨٠ و ٦٤٠٠ و ٦٤٢٠ و ٦٤٤٠ و ٦٤٦٠ و ٦٤٨٠ و ٦٥٠٠ و ٦٥٢٠ و ٦٥٤٠ و ٦٥٦٠ و ٦٥٨٠ و ٦٦٠٠ و ٦٦٢٠ و ٦٦٤٠ و ٦٦٦٠ و ٦٦٨٠ و ٦٧٠٠ و ٦٧٢٠ و ٦٧٤٠ و ٦٧٦٠ و ٦٧٨٠ و ٦٨٠٠ و ٦٨٢٠ و ٦٨٤٠ و ٦٨٦٠ و ٦٨٨٠ و ٦٩٠٠ و ٦٩٢٠ و ٦٩٤٠ و ٦٩٦٠ و ٦٩٨٠ و ٧٠٠٠ و ٧٠٢٠ و ٧٠٤٠ و ٧٠٦٠ و ٧٠٨٠ و ٧١٠٠ و ٧١٢٠ و ٧١٤٠ و ٧١٦٠ و ٧١٨٠ و ٧٢٠٠ و ٧٢٢٠ و ٧٢٤٠ و ٧٢٦٠ و ٧٢٨٠ و ٧٣٠٠ و ٧٣٢٠ و ٧٣٤٠ و ٧٣٦٠ و ٧٣٨٠ و ٧٤٠٠ و ٧٤٢٠ و ٧٤٤٠ و ٧٤٦٠ و ٧٤٨٠ و ٧٥٠٠ و ٧٥٢٠ و ٧٥٤٠ و ٧٥٦٠ و ٧٥٨٠ و ٧٦٠٠ و ٧٦٢٠ و ٧٦٤٠ و ٧٦٦٠ و ٧٦٨٠ و ٧٧٠٠ و ٧٧٢٠ و ٧٧٤٠ و ٧٧٦٠ و ٧٧٨٠ و ٧٨٠٠ و ٧٨٢٠ و ٧٨٤٠ و ٧٨٦٠ و ٧٨٨٠ و ٧٩٠٠ و ٧٩٢٠ و ٧٩٤٠ و ٧٩٦٠ و ٧٩٨٠ و ٨٠٠٠ و ٨٠٢٠ و ٨٠٤٠ و ٨٠٦٠ و ٨٠٨٠ و ٨١٠٠ و ٨١٢٠ و ٨١٤٠ و ٨١٦٠ و ٨١٨٠ و ٨٢٠٠ و ٨٢٢٠ و ٨٢٤٠ و ٨٢٦٠ و ٨٢٨٠ و ٨٣٠٠ و ٨٣٢٠ و ٨٣٤٠ و ٨٣٦٠ و ٨٣٨٠ و ٨٤٠٠ و ٨٤٢٠ و ٨٤٤٠ و ٨٤٦٠ و ٨٤٨٠ و ٨٥٠٠ و ٨٥٢٠ و ٨٥٤٠ و ٨٥٦٠ و ٨٥٨٠ و ٨٦٠٠ و ٨٦٢٠ و ٨٦٤٠ و ٨٦٦٠ و ٨٦٨٠ و ٨٧٠٠ و ٨٧٢٠ و ٨٧٤٠ و ٨٧٦٠ و ٨٧٨٠ و ٨٨٠٠ و ٨٨٢٠ و ٨٨٤٠ و ٨٨٦٠ و ٨٨٨٠ و ٨٩٠٠ و ٨٩٢٠ و ٨٩٤٠ و ٨٩٦٠ و ٨٩٨٠ و ٩٠٠٠ و ٩٠٢٠ و ٩٠٤٠ و ٩٠٦٠ و ٩٠٨٠ و ٩١٠٠ و ٩١٢٠ و ٩١٤٠ و ٩١٦٠ و ٩١٨٠ و ٩٢٠٠ و ٩٢٢٠ و ٩٢٤٠ و ٩٢٦٠ و ٩٢٨٠ و ٩٣٠٠ و ٩٣٢٠ و ٩٣٤٠ و ٩٣٦٠ و ٩٣٨٠ و ٩٤٠٠ و ٩٤٢٠ و ٩٤٤٠ و ٩٤٦٠ و ٩٤٨٠ و ٩٥٠٠ و ٩٥٢٠ و ٩٥٤٠ و ٩٥٦٠ و ٩٥٨٠ و ٩٦٠٠ و ٩٦٢٠ و ٩٦٤٠ و ٩٦٦٠ و ٩٦٨٠ و ٩٧٠٠ و ٩٧٢٠ و ٩٧٤٠ و ٩٧٦٠ و ٩٧٨٠ و ٩٨٠٠ و ٩٨٢٠ و ٩٨٤٠ و ٩٨٦٠ و ٩٨٨٠ و ٩٩٠٠ و ٩٩٢٠ و ٩٩٤٠ و ٩٩٦٠ و ٩٩٨٠ و ١٠٠٠٠ و ١٠٠٢٠ و ١٠٠٤٠ و ١٠٠٦٠ و ١٠٠٨٠ و ١٠١٠٠ و ١٠١٢٠ و ١٠١٤٠ و ١٠١٦٠ و ١٠١٨٠ و ١٠٢٠٠ و ١٠٢٢٠ و ١٠٢٤٠ و ١٠٢٦٠ و ١٠٢٨٠ و ١٠٣٠٠ و ١٠٣٢٠ و ١٠٣٤٠ و ١٠٣٦٠ و ١٠٣٨٠ و ١٠٤٠٠ و ١٠٤٢٠ و ١٠٤٤٠ و ١٠٤٦٠ و ١٠٤٨٠ و ١٠٥٠٠ و ١٠٥٢٠ و ١٠٥٤٠ و ١٠٥٦٠ و ١٠٥٨٠ و ١٠٦٠٠ و ١٠٦٢٠ و ١٠٦٤٠ و ١٠٦٦٠ و ١٠٦٨٠ و ١٠٧٠٠ و ١٠٧٢٠ و ١٠٧٤٠ و ١٠٧٦٠ و ١٠٧٨٠ و ١٠٨٠٠ و ١٠٨٢٠ و ١٠٨٤٠ و ١٠٨٦٠ و ١٠٨٨٠ و ١٠٩٠٠ و ١٠٩٢٠ و ١٠٩٤٠ و ١٠٩٦٠ و ١٠٩٨٠ و ١١٠٠٠ و ١١٠٢٠ و ١١٠٤٠ و ١١٠٦٠ و ١١٠٨٠ و ١١١٠٠ و ١١١٢٠ و ١١١٤٠ و ١١١٦٠ و ١١١٨٠ و ١١٢٠٠ و ١١٢٢٠ و ١١٢٤٠ و ١١٢٦٠ و ١١٢٨٠ و ١١٣٠٠ و ١١٣٢٠ و ١١٣٤٠ و ١١٣٦٠ و ١١٣٨٠ و ١١٤٠٠ و ١١٤٢٠ و ١١٤٤٠ و ١١٤٦٠ و ١١٤٨٠ و ١١٥٠٠ و ١١٥٢٠ و ١١٥٤٠ و ١١٥٦٠ و ١١٥٨٠ و ١١٦٠٠ و ١١٦٢٠ و ١١٦٤٠ و ١١٦٦٠ و ١١٦٨٠ و ١١٧٠٠ و ١١٧٢٠ و ١١٧٤٠ و ١١٧٦٠ و ١١٧٨٠ و ١١٨٠٠ و ١١٨٢٠ و ١١٨٤٠ و ١١٨٦٠ و ١١٨٨٠ و ١١٩٠٠ و ١١٩٢٠ و ١١٩٤٠ و ١١٩٦٠ و ١١٩٨٠ و ١٢٠٠٠ و ١٢٠٢٠ و ١٢٠٤٠ و ١٢٠٦٠ و ١٢٠٨٠ و ١٢١٠٠ و ١٢١٢٠ و ١٢١٤٠ و ١٢١٦٠ و ١٢١٨٠ و ١٢٢٠٠ و ١٢٢٢٠ و ١٢٢٤٠ و ١٢٢٦٠ و ١٢٢٨٠ و ١٢٣٠٠ و ١٢٣٢٠ و ١٢٣٤٠ و ١٢٣٦٠ و ١٢٣٨٠ و ١٢٤٠٠ و ١٢٤٢٠ و ١٢٤٤٠ و ١٢٤٦٠ و ١٢٤٨٠ و ١٢٥٠٠ و ١٢٥٢٠ و ١٢٥٤٠ و ١٢٥٦٠ و ١٢٥٨٠ و ١٢٦٠٠ و ١٢٦٢٠ و ١٢٦٤٠ و ١٢٦٦٠ و ١٢٦٨٠ و ١٢٧٠٠ و ١٢٧٢٠ و ١٢٧٤٠ و ١٢٧٦٠ و ١٢٧٨٠ و ١٢٨٠٠ و ١٢٨٢٠ و ١٢٨٤٠ و ١٢٨٦٠ و ١٢٨٨٠ و ١٢٩٠٠ و ١٢٩٢٠ و ١٢٩٤٠ و ١٢٩٦٠ و ١٢٩٨٠ و ١٣٠٠٠ و ١٣٠٢٠ و ١٣٠٤٠ و ١٣٠٦٠ و ١٣٠٨٠ و ١٣١٠٠ و ١٣١٢٠ و ١٣١٤٠ و ١٣١٦٠ و ١٣١٨٠ و ١٣٢٠٠ و ١٣٢٢٠ و ١٣٢٤٠ و ١٣٢٦٠ و ١٣٢٨٠ و ١٣٣٠٠ و ١٣٣٢٠ و ١٣٣٤٠ و ١٣٣٦٠ و ١٣٣٨٠ و ١٣٤٠٠ و ١٣٤٢٠ و ١٣٤٤٠ و ١٣٤٦٠ و ١٣٤٨٠ و ١٣٥٠٠ و ١٣٥٢٠ و ١٣٥٤٠ و ١٣٥٦٠ و ١٣٥٨٠ و ١٣٦٠٠ و ١٣٦٢٠ و ١٣٦٤٠ و ١٣٦٦٠ و ١٣٦٨٠ و ١٣٧٠٠ و ١٣٧٢٠ و ١٣٧٤٠ و ١٣٧٦٠ و ١٣٧٨٠ و ١٣٨٠٠ و ١٣٨٢٠ و ١٣٨٤٠ و ١٣٨٦٠ و ١٣٨٨٠ و ١٣٩٠٠ و ١٣٩٢٠ و ١٣٩٤٠ و ١٣٩٦٠ و ١٣٩٨٠ و ١٤٠٠٠ و ١٤٠٢٠ و ١٤٠٤٠ و ١٤٠٦٠ و ١٤٠٨٠ و ١٤١٠٠ و ١٤١٢٠ و ١٤١٤٠ و ١٤١٦٠ و ١٤١٨٠ و ١٤٢٠٠ و ١٤٢٢٠ و ١٤٢٤٠ و ١٤٢٦٠ و ١٤٢٨٠ و ١٤٣٠٠ و ١٤٣٢٠ و ١٤٣٤٠ و ١٤٣٦٠ و ١٤٣٨٠ و ١٤٤٠٠ و ١٤٤٢٠ و ١٤٤٤٠ و ١٤٤٦٠ و ١٤٤٨٠ و ١٤٥٠٠ و ١٤٥٢٠ و ١٤٥٤٠ و ١٤٥٦٠ و ١٤٥٨٠ و ١٤٦٠٠ و ١٤٦٢٠ و ١٤٦٤٠ و ١٤٦٦٠ و ١٤٦٨٠ و ١٤٧٠٠ و ١٤٧٢٠ و ١٤٧٤٠ و ١٤٧٦٠ و ١٤٧٨٠ و ١٤٨٠٠ و ١٤٨٢٠ و ١٤٨٤٠ و ١٤٨٦٠ و ١٤٨٨٠ و ١٤٩٠٠ و ١٤٩٢٠ و ١٤٩٤٠ و ١٤٩٦٠ و ١٤٩٨٠ و ١٥٠٠٠ و ١٥٠٢٠ و ١٥٠٤٠ و ١٥٠٦٠ و ١٥٠٨٠ و ١٥١٠٠ و ١٥١٢٠ و ١٥١٤٠ و ١٥١٦٠ و ١٥١٨٠ و ١٥٢٠٠ و ١٥٢٢٠ و ١٥٢٤٠ و ١٥٢٦٠ و ١٥٢٨٠ و ١٥٣٠٠ و ١٥٣٢٠ و ١٥٣٤٠ و ١٥٣٦٠ و ١٥٣٨٠ و ١٥٤٠٠ و ١٥٤٢٠ و ١٥٤٤٠ و ١٥٤٦٠ و ١٥٤٨٠ و ١٥٥٠٠ و ١٥٥٢٠ و ١٥٥٤٠ و ١٥٥٦٠ و ١٥٥٨٠ و ١٥٦٠٠ و ١٥٦٢٠ و ١٥٦٤٠ و ١٥٦٦٠ و ١٥٦٨٠ و ١٥٧٠٠ و ١٥٧٢٠ و ١٥٧٤٠ و ١٥٧٦٠ و ١٥٧٨٠ و ١٥٨٠٠ و ١٥٨٢٠ و ١٥٨٤٠ و ١٥٨٦٠ و ١٥٨٨٠ و ١٥٩٠٠ و ١٥٩٢٠ و ١٥٩٤٠ و ١٥٩٦٠ و ١٥٩٨٠ و ١٦٠٠٠ و ١٦٠٢٠ و ١٦٠٤٠ و ١٦٠٦٠ و ١٦٠٨٠ و ١٦١٠٠ و ١٦١٢٠ و ١٦١٤٠ و ١٦١٦٠ و ١٦١٨٠ و ١٦٢٠٠ و ١٦٢٢٠ و ١٦٢٤٠ و ١٦٢٦٠ و ١٦٢٨٠ و ١٦٣٠٠ و ١٦٣٢٠ و ١٦٣٤٠ و ١٦٣٦٠ و ١٦٣٨٠ و ١٦٤٠٠ و ١٦٤٢٠ و ١٦٤٤٠ و ١٦٤٦٠ و ١٦٤٨٠ و ١٦٥٠٠ و ١٦٥٢٠ و ١٦٥٤٠ و ١٦٥٦٠ و ١٦٥٨٠ و ١٦٦٠٠ و ١٦٦٢٠ و ١٦٦٤٠ و ١٦٦٦٠ و ١٦٦٨٠ و ١٦٧٠٠ و ١٦٧٢٠ و ١٦٧٤٠ و ١٦٧٦٠ و ١٦٧٨٠ و ١٦٨٠٠ و ١٦٨٢٠ و ١٦٨٤٠ و ١٦٨٦٠ و ١٦٨٨٠ و ١٦٩٠٠ و ١٦٩٢٠ و ١٦٩٤٠ و ١٦٩٦٠ و ١٦٩٨٠ و ١٧٠٠٠ و ١٧٠٢٠ و ١٧٠٤٠ و ١٧٠٦٠ و ١٧٠٨٠ و ١٧١٠٠ و ١٧١٢٠ و ١٧١٤٠ و ١٧١٦٠ و ١٧١٨٠ و ١٧٢٠٠ و ١٧٢٢٠ و ١٧٢٤٠ و ١٧٢٦٠ و ١٧٢٨٠ و ١٧٣٠٠ و ١٧٣٢٠ و ١٧٣٤٠ و ١٧٣٦٠ و ١٧٣٨٠ و ١٧٤٠٠ و ١٧٤٢٠ و ١٧٤٤٠ و ١٧٤٦٠ و ١٧٤٨٠ و ١٧٥٠٠ و ١٧٥٢٠ و ١٧٥٤٠ و ١٧٥٦٠ و ١٧٥٨٠ و ١٧٦٠٠ و ١٧٦٢٠ و ١٧٦٤٠ و ١٧٦٦٠ و ١٧٦٨٠ و ١٧٧٠٠ و ١٧٧٢٠ و ١٧٧٤٠ و ١٧٧٦٠ و ١٧٧٨٠ و ١٧٨٠٠ و ١٧٨٢٠ و ١٧٨٤٠ و ١٧٨٦٠ و ١٧٨٨٠ و ١٧٩٠٠ و ١٧٩٢٠ و ١٧٩٤٠ و ١٧٩٦٠ و ١٧٩٨٠ و ١٨٠٠٠ و ١٨٠٢٠ و ١٨٠٤٠ و ١٨٠٦٠ و ١٨٠٨٠ و ١٨١٠٠ و ١٨١٢٠ و ١٨١٤٠ و ١٨١٦٠ و ١٨١٨٠ و ١٨٢٠٠ و ١٨٢٢٠ و ١٨٢٤٠ و ١٨٢٦٠ و ١٨٢٨٠ و ١٨٣٠٠ و ١٨٣٢٠ و ١٨٣٤٠ و ١٨٣٦٠ و ١٨٣٨٠ و ١٨٤٠٠ و ١٨٤٢٠ و ١٨٤٤٠ و ١٨٤٦٠ و ١٨٤٨٠ و ١٨٥٠٠ و ١٨٥٢٠ و ١٨٥٤٠ و ١٨٥٦٠ و ١٨٥٨٠ و ١٨٦٠٠ و ١٨٦٢٠ و ١٨٦٤٠ و ١٨٦٦٠ و ١٨٦٨٠ و ١٨٧٠٠ و ١٨٧٢٠ و ١٨٧٤٠ و ١٨٧٦٠ و ١٨٧٨٠ و ١٨٨٠٠ و ١٨٨٢٠ و ١٨٨٤٠ و ١٨٨٦٠ و ١٨٨٨٠ و ١٨٩٠٠ و ١٨٩٢٠ و ١٨٩٤٠ و ١٨٩٦٠ و ١٨٩٨٠ و ١٩٠٠٠ و ١٩٠٢٠ و ١٩٠٤٠ و ١٩٠٦٠ و ١٩٠٨٠ و ١٩١٠٠ و ١٩١٢٠ و ١٩١٤٠ و ١٩١٦٠ و ١٩١٨٠ و ١٩٢٠٠ و ١٩٢٢٠ و ١٩٢٤٠ و ١٩٢٦٠ و ١٩٢٨٠ و ١٩٣٠٠ و ١٩٣٢٠ و ١٩٣٤٠ و ١٩٣٦٠ و ١٩٣٨٠ و ١٩٤٠٠ و ١٩٤٢٠ و ١٩٤٤٠ و ١٩٤٦٠ و ١٩٤٨٠ و ١٩٥٠٠ و ١٩٥٢٠ و ١٩٥٤٠ و ١٩٥٦٠ و ١٩٥٨٠ و ١٩٦٠٠ و ١٩٦٢٠ و ١٩٦٤٠ و ١٩٦٦٠ و ١٩٦٨٠ و ١٩٧٠٠ و ١٩٧٢٠ و ١٩٧٤٠ و ١٩٧٦٠ و ١٩٧٨٠ و ١٩٨٠٠ و ١٩٨٢٠ و ١٩٨٤٠ و ١٩٨٦٠ و ١٩٨٨٠ و ١٩٩٠٠ و ١٩٩٢٠ و ١٩٩٤٠ و ١٩٩٦٠ و ١٩٩٨٠ و ٢٠٠٠٠ و ٢٠٠٢٠ و ٢٠٠٤٠ و ٢٠٠٦٠ و ٢٠٠٨٠ و ٢٠١٠٠ و ٢٠١٢٠ و ٢٠١٤٠ و ٢٠١٦٠ و ٢٠١٨٠ و ٢٠٢٠٠ و ٢٠٢٢٠ و ٢٠٢٤٠ و ٢٠٢٦٠ و ٢٠٢٨٠ و ٢٠٣٠٠ و ٢٠٣٢٠ و ٢٠٣٤٠ و ٢٠٣٦٠ و ٢٠٣٨٠ و ٢٠٤٠٠ و ٢٠٤٢٠ و ٢٠٤٤٠ و ٢٠٤٦٠ و ٢٠٤٨٠ و ٢٠٥٠٠ و ٢٠٥٢٠ و ٢٠٥٤٠ و ٢٠٥٦٠ و ٢٠٥٨٠ و ٢٠٦٠٠ و ٢٠٦٢٠ و ٢٠٦٤٠ و ٢٠٦٦٠ و ٢٠٦٨٠ و ٢٠٧٠٠ و ٢٠٧٢٠ و ٢٠٧٤٠ و ٢٠٧٦٠ و ٢٠٧٨٠ و ٢٠٨٠٠ و ٢٠٨٢٠ و ٢٠٨٤٠ و ٢٠٨٦٠ و ٢٠٨٨٠ و ٢٠٩٠٠ و ٢٠٩٢٠ و ٢٠٩٤٠ و ٢٠٩٦٠ و ٢٠٩٨٠ و ٢١٠٠٠ و ٢١٠٢٠ و ٢١٠٤٠ و ٢١٠٦٠ و ٢١٠٨٠ و ٢١١٠٠ و ٢١١٢٠ و ٢١١٤٠ و ٢١١٦٠ و ٢١١٨٠ و ٢١٢٠٠ و ٢١٢٢٠ و ٢١٢٤٠ و ٢١٢٦٠ و

Table8: Effect of natural materials used as fertilizers on some nutrients uptake(mg/ plant) of eggplant at three periods of growth.

Treatment	Level	Bactria treat.	one month from planting (15:April) mg/ plant			middle of plant growth (20: may) mg/ plant			end of cultivation (21:August) mg/ plant		
			N	P	K	N	P	K	N	P	K
Control	Zero	B0	121.00	5.75	112.20	282.85	15.47	498.30	996.25	62.09	1457.23
		B1	119.51	5.93	108.38	299.16	17.33	538.73	1026.65	67.35	1832.26
PR	1	B0	166.51	10.27	170.73	449.96	28.58	872.62	1072.90	74.17	1753.88
		B1	186.38	10.89	189.24	567.26	31.02	876.00	1169.55	78.83	1933.68
	2	B0	216.94	16.95	277.28	760.68	39.93	1076.44	1433.93	127.65	2388.09
		B1	238.43	19.77	292.66	866.24	44.28	1152.17	1992.31	164.97	3062.61
SO	1	B0	150.54	6.52	138.94	415.38	18.04	609.42	1030.48	60.44	1721.41
		B1	181.62	12.26	162.42	447.61	22.53	656.70	1234.61	83.38	2266.33
	2	B0	207.94	14.58	200.54	719.53	38.42	1106.51	1557.40	109.99	3129.52
		B1	239.21	16.95	318.08	772.68	42.40	1158.34	2012.16	125.40	3025.83

Table9: Effect of natural materials used as fertilizers on some nutrients uptake (mg/ plant) of eggplant at the different collection.

Treatment	Level	Bactria treat.	first collection (27 June, 2013) mg/ plant			fifth collection (21August, 2013) mg/ plant		
			N	P	K	N	P	K
Control	Zero	B0	305.30	41.15	425.27	279.98	36.57	395.01
		B1	327.63	45.33	514.10	313.51	39.14	415.76
PR	1	B0	384.62	99.63	744.56	298.98	39.91	440.74
		B1	410.17	104.83	760.10	323.93	44.22	477.54
	2	B0	389.19	131.17	759.17	374.85	57.97	537.32
		B1	557.32	168.66	1005.76	404.89	65.45	616.24
SO	1	B0	430.66	53.57	782.51	437.09	65.59	559.03
		B1	411.73	59.16	798.91	443.47	53.27	578.28
	2	B0	788.04	89.28	1185.24	494.80	59.20	651.07
		B1	783.31	110.21	1212.94	598.58	86.95	914.93