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Effect of Spraying of Organic Fertilizers (ALGAZON) and Dry Yeast Extract on some Vegetative Parameters and the Yield of Volatile Oil and its Qualities of Myrtus (*Myrtus communis* L.)

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Abstract: This study was conducted at the nursery of Agricultural Research Station, Agriculture College, University of Basrah, Qarmat Ali campus, at the agricultural season 2018-2019. The Experiment was conducted using Randomized Complete Block Design (R.C.B.D), with two factors, the First factor was organic fertilizer (ALGAZON) with three concentrations (0, 1.5 and 3) ml. L^{-1}, the Second factor was dry yeast extract in three concentrations (0, 3 and 6) g. L^{-1}, by five sprinkles one month between them and a five-day difference between the factors. The results showed that spraying with organic fertilizer (Algazon) at a concentration of 3 ml.L^{-1}, led to a significant increase on the plant height, the main stem diameter, leaf area, main branches number, the fresh and dry weight of the leaves, the dry matter percentage of the leaves, the percentage of oil, the oil yield in the plant, the productivity of volatile per hectare, specific weight and the density of the oil. Sprinkle with dry yeast extract at 6 g. L^{-1}, resulted a significant increase in all vegetative parameters studied and oil yield. The interaction between the organic fertilizers (ALGAZON) spraying treatments was 3 ml. L^{-1} and dry yeast extract 6 g. L^{-1}, were a significant effect, led to an increase in plant height, the main stem diameter, leaf area, the branches number , Fresh and dry weight of the leaves and the percentage of dry matter, the percentage of oil, Yield oil in plant, productivity of volatile per hectare, refractive index, specific weight and the density of the oil.

Keywords: (ALGAZON), Yeast, Vegetative, Volatile oil, Myrtus (*Myrtus communis* L.).

Introduction

Myrtus *Myrtus communis* L., belong to the Myrtaceae Asian family, includes 150 genera and more than 5500 species, naturally cultivated around the world, the native to the northern Mediterranean (Jamshidi-Kia *et al.*, 2018). Myrtus is an evergreen shrub, it is 2-5 meter long (Bouzabata *et al.*, 2016), the stem of the plant is upright, the leaves are green, spear full, edge smooth leather facing, with a distinctive aroma, its length is 3-5 cm, the fruits are black, pear-shaped, medicinal and aromatic plant, important, economic and religious, contains essential oils and anthropomorphic substances (Hajiaghaee *et al.*, 2016). The stomach astringent and antiseptic, anti-inflammatory, pain relievers and reduce blood sugar (Jabri *et al.*, 2016), myrtus suitable as a vegetable fence, because it is capable of cutting and shaping, it works in most lands, myrtus propagation by cutting,

restraint and tissue culture (Ebrahimabadi *et al.*, 2016).

Seaweed extract is one of the most important recently used organic fertilizers, to improve plant growth with high efficiency and less pollution to the environment, Including Algazon extract, which is extract from algae brown *Ascophyllum nodosum*, belongs to the Fucaceae family, characterized by its dark colour, which ranges between brown and almost black, this is due to high content of humic compounds such as polyphenols (Al-Janabi & Al-Shabani, 2017), so it is one of the organic fertilizers that nourish the plant, contains major, minor and rare elements, such as N, K, P, Co, Mg, Br, Mo, Zn, Cu, and Fe (Eyras *et al.*, 2008).

Salman & Sachet (2013) they found when spraying the dill plant grown in Babel governorate with liquid organic fertilizer, at a concentration of 6 ml L^{-1}, resulted in a significant increase in the yield of volatile oil, oil productivity per unit area, oil density and refractive index, compared to plant not sprayed. Matroad *et al.* (2016) showed that the spraying *Ocimum basilicum* L basil plants, Kelpak seaweed extract, at a concentration of 0 and 2 ml. L^{-1}, results showed that a significant effect, plants sprayed with seaweed extract at a concentration of 2 ml. L^{-1} were significantly increasing the percentage of oil, yield of one plant, productivity per hectare of oil, and the specific density of essential oil, compared to plants that have been sprayed with distilled water only.

Dry yeast extract *Saccharomyces cerevisiae* of biological stimuli and natural biological fertilizers, promoted to improvement plant growth and its quality (Abd El-Motty *et al.*, 2010), they are eukaryotic organisms, belongs to the Saccharomycetaceae family, within the Division of Cystic Fungi Ascomycetes, considered from the organic sources, to agricultural production improve, a supplement to fertilizers. Al-Samaraee *et al.* (2011) showed that the treatment with activated yeast suspension at 2 $g.l^{-1}$ caused a significant increase in plant height, number of lateral branches, and number of leaves, compare with yeast suspension at 1g. L and the control. Al-Doghachi *et al*. (2012) report that leave and soils praying with active dry yeast extracts were a significantly improved on some traits of Cumin plant *Cuminum cyminum* L..

The medical importance of plant, experiment was conducted to determine the effect of best concentration of organic fertilizer (Algazon) and dry yeast extract, to improving the vegetative growth and the yield of volatile of myrtus plant.

Materials & Methods

This study was conducted at the nursery of Agricultural Research Station, Agriculture College, University of Basrah, Qarmat Ali campus, for the agricultural season 2018-2019, to determine the effect of spraying of organic fertilizers (ALGAZON) and dry yeast extract on some vegetative parameters and the yield of volatile of Myrtus (*Myrtus communis* L.). Brought the plants from one of the private nurseries in Basrah on 5/9/2018, Plant age was two years old, transported to large size plastic pots, 30 cm in diameter and 30 cm in depth, capacity of 12.5 kg of soil with peat moss, in a ratio of 1: 2, the height of the plants was standardized to 55 cm, leaving 5 branches. Plant $^{-1}$ at 17/9/2018. Random samples were taken from This mixture to analyze some of its chemical and physical properties, as well as analysis of watering samples in the central laboratory of

Agriculture College, University of Basrah were done (Tables 1 and 2).

Table (1): Some physical and chemical properties of the soil used in the study.

Properties	Value
Electrical Conductivity (ds.m-1)	1.53
pH	7.49
Total nitrogen (mg. L-1)	0.87
Available phosphorus	17.75
Available potassium	22.15
Organic matter (%)	0.42
Physical soil properties (%)	
Sand	50.94
Silt	29.05
Clay	20.01
Soil texture	Sandy clay

Table (2): Some chemical properties of the irrigation water used in the study.

Properties	Value
pH	7.6
Bicarbonate	41.2 mg. L^{-1} (ppm)
Sulphate	18.3 mg. L^{-1}
Sodium	21.9 mg. L^{-1}
Calcium	3.6 mg. L^{-1}
Magnesium	19.0 mg. L^{-1}
Potassium	1.00 mg. L^{-1}
Chloride	50.2 mg. L^{-1}
Fluoride	0.02 mg. L^{-1}
Nitrate	6.8 mg. L-1

Experiment was conducted using Randomized Complete Block Design (R.C.B.D), with two factors, in three replicates (the experimental unit includes 6 plants), First Algazon marine algae extract were used, extracted from brown seaweed (*Ascceufelume nodosum*), production in Aljoud Company, a subsidiary of the Iraqi Alkafeel company, components were described in table (3), sprayed in three concentrations 0, 1.5 and 3 ml. L^{-1}, and dry yeast extract components were described in table (4), with concentrations (0, 3 and 6) g. L^{-1}, dry yeast extract was prepared, by melt 3 and 6 g separately in a liter of warm distilled water, at a temperature of 32 °C, with addition of 1 g of sugar (sucrose) to activate the yeast. Sprinkle myrtus vegetables with Algazon fertilizer and dry Yeast Extract at the required concentrations, in the early morning until completely wet, an average of five sprinkles from one sprinkle to another 30 days, starting from 17 October 2018, a five-day difference between the factors (Table 5.).

Table (3): Some components of Algazon seaweed extract used in the study.

Organic fertilizer (Algazon) Composition	Extract (%)	Organic fertilizer (Algazon) Composition	Extract (%)
N	7.80	Indole acetic acid	0.002
P	3.90	Phosphorus oxide p_2o_5	0.5
K	13	Alanine	0.026
MO	0.4	Phytin	0.003
Fe	0.1	Menthol	0.001
Zn	0.5	Organic matter	6
K_2O	4%	Carbohydrate and Vitamins	16-12%
Mg	32ppm	Glytamic acid	0.0019
Mn	31ppm	Fats	7-11%
Cu	12.6ppm	Auxins, cytokinins and gibberlins	28-32%
		Proteinz	50-55%

Table (4): Some dry yeast components used in the study for the 2018-2019 season.

Amino acids	Value (mg. g^{-1})	Mineral elements	Value (mg. g)	Nucleic acids	Value (mg. g)
Glycine	0.103	P	12.50	Adenine	5.48
Alanine	0.132	K	30	Guanine	5.66
Isoleucine	0.421	Na	56	Xanthine	3.25
Aspartic acid	0.274	Mg	2	Cytosine	3.31
Glutamic acid	0.367	Ca	0.1	Uracil+Thymine	5.97
Serine	0.523	Mn	5.69	Another components	Value (mg. g^{-1})
Threonine	0.206	Zn	69.5	Total Nitrogen	90
Tyrosine	0.031	Cu	0.02	Carbohydrate	82
Phenyl alanine	0.116	Fe	0.05	Ash	10.51
Proline	0.041	Co	0.005	Water	5.0
Arginine	0.073	Vitamins	Value (mg. g^{-1})	Chlorides	13.1
Lysine	0.089	Vit. B1	28.1	Phosphate	38
Cysteine	0.025	Vit. B2	31.7	Amino acid nitrogen	40
Methionine	0.012	Vit,B6	46.1	Natural growth regulators	-
Tryptophan	0.020	Pantothenic acid	52.5		
Leucine	0.067	Biotin	1.6		
		Niacin	5.3		
		Inositol	33.9		

Table (5): Number and timing of sprinkles for each factor of the study.

Sprinkles	Extract	Spraying date
First spraying	Algazon seaweed extract	17/10/2018
	Dry yeast extract	21/10/2018
Second spraying	Algazon seaweed extract	17/11/2018
	Dry yeast extract	21/11/2018
Third spraying	Algazon seaweed extract	17/12/2018
	Dry yeast extract	21/12/2018
Forth spraying	Algazon seaweed extract	17/1/2019
	Dry yeast extract	21/1/2019
Fifth spraying	Algazon seaweed extract	17/2/2019
	Dry yeast extract	21/2/2019

An 8- litres manual sprinkler was used, after adding the spreader (Tween- 20) at a concentration of 0.01% of the spray solutions, for reducing surface tension and increasing the adhesion of this material to the leaves.

The data were statistically analyzed by the GenStat statistical program, the significant differences between the averages were compared with Modified Less Significant Difference (LSD) test with at probability level 0.05 (Al-Rawi & Khalaf-Allah, 2000). The vegetative growth parameters were studied, includes plant height (cm), stem diameter (mm), leaf area (cm^2), main branches number (plant. $branch^{-1}$), fresh and dry weight of leaves (g), percentage of dry matter in leaves (%), oil percentage (%), oil yield (g) and volatile oil per hectares (kg). Physical parameters were measured, includes refractive index, specific weight and specific density (mg. μL^{-1}) of oils.

Results

Table (6) shows that, a significant increased when spray with the organic fertilizer extract, Algazon, at a concentration of 3 ml. L^{-1} on plant height, main stem diameter, the leaf area, the branches number, the fresh and dry weight of the leaves and the percentage of dry matter, the highest values of 87.54 cm, 13.13 mm, 8.77 cm^2,10.85 branches. $plant^{-1}$, 442.0 g, 95.55 g, and 21.52%, respectively, compared with the control treatment, which gave the lowest values as they reached 74.55 cm, 8.31 mm, 5.11 cm^2, 7.04 branches. $plant^{-1}$, 1344.70 g., 69.77 g and 19.94%, respectively. As for the effect of dry yeast extract on vegetative growth, the results showed that the plants sprayed with dry yeast extract 6 g. L^{-1} were a significant exceeded on the plant height, gave the highest value of 90.31 cm, compare with all other concentrations and control plants, which gave the lowest value was 71.11 cm, the yeast extract at a concentration of 6 g. L^{-1} was a significant increase on the stem diameter, reached 11.37 mm, compared to the control treatment, which gave the lowest stem diameter of 9.32 mm, the effect of yeast extract with concentration 6 g. L^{-1} was significant increase, in the leaf area, the branches number, the fresh and dry weight of the vegetative group and the percentage of dry matter, recorded the highest values of 7.61 cm^2, 10.85 branches. $plant^{-1}$, 406.23 g, 85.81 g and 20.89%, respectively, compared to the control treatment, the lowest values were recorded 6.58 cm^2, 6.41 branches. $plant^{-1}$, 366.80 g, 75.32 g and 20.31%, respectively.

Table (6): The effect of spraying of organic fertilizers (ALGAZON) and dry yeast extract on some vegetative parameters of Myrtus (*Myrtus communis* L.) for the season 2018-2019 (Means± Standard error).

Organic Fertilizer conc. (ml. L^{-1})	Yeast conc. (g. L^{-1})	plant height (cm)	stem diameter (mm)	leaf area (cm^2)	main branches number (plant. $branch^{-1}$)	fresh weight of leaves (g)	dry weight of leaves (g)	percentage of dry matter (%)
0	0	65.27±3.2c	7.67±0.16b	4.53±0.09c	5.78±0.07c	327.0±17.2c	66.50±5.3c	19.80±0.22b
	3	73.36±1.2b	7.83±0.09b	4.90±0.10b	6.44±0.11b	337.5±20.4b	67.71±5.7b	19.85±0.17b
	6	85.03±5.4a	9.43±0.14a	5.90±0.07a	8.89±0.08a	369.5±19.2a	75.12±4.8a	20.18±0.11a
1.5	0	70.00±4.8c	8.24±0.11c	6.85±0.11b	5.89±0.05c	353.9±16.4c	71.10±6.2c	20.14±0.09b
	3	78.02±2.7b	9.00±0.05b	7.38±0.07a	7.00±0.07b	359.1±11.6b	73.91±5.9b	20.25±0.16b
	6	88.02±4.3a	10.60±0.06a	7.78±0.22a	9.78±0.09a	379.3±15.4a	78.77±7.1a	20.54±0.14a
3	0	78.04±2.3c	12.06±0.11c	8.36±0.18b	7.56±0.07c	419.3±12.7c	88.37±6.6c	21.00±0.15c
	3	86.695.5b	13.27±0.11b	8.79±0.25b	9.11±0.05b	436.7±22.7b	94.72±7.0b	21.61±0.09b
	6	97.89±3.4a	14.08±0.06a	9.14±0.20a	13.89±0.19a	469.9±25.2a	103.55±4.2a	21.96±0.10a
$L.S.D_{0.05}$		2.020	7.67	0.5353	0.5846	11.92	1.583	0.4828
Organic Fertilizer means	0	74.55±2.7c	8.31±0.05b	5.11±0.07c	7.04±0.07c	344.7±19.8c	69.78±5.2c	19.94±0.11c
	1.5	78.68±1.9b	9.28±0.04b	7.34±0.11b	7.56±0.08b	364.1±20.4b	74.59±5.8b	20.31±0.13b
	3	87.54±2.4a	13.13±0.07a	8.77±0.09a	10.19±0.11a	442.0±23.1a	95.55±6.6a	21.52±0.07a
$L.S.D_{0.05}$		1.194	0.01238	0.3093	0.3378	6.88	0.915	0.278
Yeast treatment means	0	71.11±3.6c	9.32±0.06c	6.58±0.05c	6.41±0.05c	366.8±21.0c	75.32±4.3c	20.31±0.15b
	3	79.36±3.3b	10.03±0.05b	7.02±0.06b	7.52±0.08b	377.8±19.2b	78.78±3.2b	20.57±0.14b
	6	90.31±6.1a	11.37±0.05a	7.61±0.05a	10.85±0.11a	406.2±21.2a	85.81±5.4a	20.89±0.12a
$L.S.D_{0.05}$		1.196	0.01235	0.3090	0.3374	6.88	0.913	0.2787

Means followed by the same letters are not significantly different ($P<0.05$) according to modified L.S.D test .

Table (7): The effect of spraying of organic fertilizers (ALGAZON) and dry yeast extract on availability of volatile oil and Physical parameters of Myrtus (*Myrtus communis* L.) for the season 2018-2019.

Organic Fertilizer conc. (ml. L^{-1})	Yeast conc. (g. L^{-1})	Oil percentage (%)	Oil yield (g)	Volatile oil per hectares (kg)	Refractive index	Specific weight	Density (mg. μL^{-1})
0	0	0.396±0.001c	0.265±0.001c	14.73±0.08a	1.470±0.02	0.748±0.005c	0.748±0.006c
	3	0.403±0.002b	0.277±0.001b	15.382±0.11b	1.471±0.01	0.762±0.006b	0.757±0.004b
	6	0.414±0.001a	0.313±0.001a	17.407±0.09c	1.472±0.01	0.798±0.001a	0.772±0.005a
1.5	0	0.419±0.001b	0.301±0.001b	16.727±0.12a	1.471±0.03	0.766±0.009c	0.754±0.005c
	3	0.417±0.003b	0.311±0.001b	17.271±0.11b	1.472±0.01	0.781±0.007b	0.757±0.004b
	6	0.426±0.001a	0.338±0.002a	18.758±0.09c	1.472±0.02	0.805±0.006a	0.804±0.005a
3	0	0.444±0.003b	0.394±0.001c	21.913±0.14a	1.473±0.02	0.793±0.005c	0.795±0.03b
	3	0.450±0.002a	0.428±0.001b	23.765±0.13b	1.472±0.01	0.799±0.004b	0.777±0.005c
	6	0.454±0.002a	0.473±0.002a	26.260±0.09c	1.473±0.02	0.811±0.006a	0.823±0.006a
$L.S.D_{0.05}$		0.0065	0.0098	0.5503	0.0008	0.0034	0.0043
Organic Fertilizer means	0	0.404±0.002b	0.285±0.001c	15.841±0.07c	1.471±0.02	0.769±0.006c	0.759±0.004a
	1.5	0.420±0.001b	0.317±0.001b	17.586±0.08b	1.472±0.01	0.784±0.005b	0.771±0.003b
	3	0.450±0.001a	0.432±0.002a	23.981±0.11a	1.473±0.01	0.801±0.004a	0.799±0.004c
$L.S.D_{0.05}$		0.0039	0.0059	0.3178	0.0005	0.0019	0.0025
Yeast treatment means	0	0.420±0.003b	0.320±0.002c	17.791±0.10c	1.471±0.01	0.769±0.005c	0.766±0.004b
	3	0.423±0.001b	0.339±0.001b	18.806±0.09b	1.472±0.02	0.781±0.005b	0.764±0.006b
	6	0.431±0.002a	0.375±0.001a	20.810±0.15a	1.472±0.01	0.805±0.004a	0.800±0.007a
$L.S.D_{0.05}$		0.0036	0.0057	0.3177	0.0005	0.0019	0.0025

Means followed by the same letters are not significantly different ($P<0.05$) according to modified L.S.D test .

The interaction between organic fertilizer (Algazon) spray was 3 ml. L^{-1} with yeast extract 6 g. L^{-1}, results showed that a significant effect in an increasing the vegetative growth, as height plant, main branches number, leaf area, stem diameter, fresh and dry weight of the leaves, and the percentage of dry matter, gives the highest values of 97.89 cm, 13.89 braches. plant-1, 9.14 cm^2, 14.08 mm, 469.9 g, 103.55 g and 21.96%. respectively, compared to other treatments and control plants, gave the lowest values of 65.27 cm, 5.78 branches. $plant^{-1}$, 4.53 mm, 7.67 cm 2, 327.0 g, 66.50 g, and 19.80%, respectively.

Table (7) shows the effect of organic fertilizer and dry yeast extract on oil yield and its parameters, spray the plants with organic fertilizer in a concentration of 3 ml. L^{-1}, led to a significant increase in the percentage of oil, oil yield per plant, yield per hectare of volatile oil, specific weight and oil density except the refractive index, reached 0.450%, 0.432 g, 23.981 kg. ha^{-1}, 0.801, 0.799 mg. μL^{-1}, 1.473, respectively, compared to the control treatment that gave the lowest values, it reached 0.404%, 0.285 g, 15.841 kg, 0.769, 0.759 mg. μL^{-1}, 1.471, respectively. Also the spray with dry yeast extract at 6 g. L^{-1} significant affected in all oil yield and characterization except the refractive index compared with the control treatment.

Interaction between spraying with organic fertilizers extract 3 m. L^{-1}, and spraying with dry yeast extract 6 g. L^{-1} , a significant increase in the percentage and yield of the plant from the volatile oil and the yield per hectare of the volatile oil, gave the highest values of 0.454%, 0.473 g, 26.26 kg. ha^{-1}, compared to other treatments, especially the control treatment, which recorded the lowest values, reached 0.396%, 0.265 g and 14.73 kg. ha^{-1}, respectively, the physical parameters of the oil were significantly affected by interaction, sprinkle the organic fertilizer Algazon with a concentration of 3 ml L^{-1} with a dry yeast extract at a concentration of 6 g. L^{-1}, as the specific weight and density increased as a result of interaction, reached 0.811 and 0.823 mg . μL^{-1}, respectively, compared to other and control treatment, which gave the lowest values, reached 1.470, 0.748, and 0.748 mg. μL^{-1}, respectively.

Discussion

This increases in plant height (table, 6) when spraying organic fertilizer extract, (Algazon), at a concentration of 3 ml. L^{-1} on plant height may be due to the organic fertilizer content (table 3) of the major elements (K, P and N), which the plant needs in large quantities, due to their importance in the growth and development of the plant, it is involved in the formation of chlorophyll, amino acids, hormones and energy-rich compounds, increased readiness of the plant and transition to vegetative parts (Idris, 2009). May be due to the increase in the leaf area, to increase the concentration of the extract, as well as increasing the number of sprays, or may be due to the organic fertilizer content, which increases the number and elongation of cells, it is also an enzyme accompanying in the metabolism of carbohydrates and the production of energy necessary to perform vital processes in cells, which results in increased growth (Devlin & Witham, 1993), may be due to an increase in the percentage of dry matter in the leaves, organic fertilizers contain organic acids, it is a storehouse of nutrients, which improves cation

exchange (shipment exchange), increase the percentage of ready-made nutrients, encourages photosynthesis, and increase the accumulation of materials manufactured in the leaves such as carbohydrates and proteins, improved vegetative growth, positively affected dry weight gain (Al-Sahaf *et al.*, 2018), or due to the organic fertilizers contained cytokines and growth stimuli, helps increase the leaf area, increase the process of photosynthesis, increases the dry matter in the leaves (Jensen, 2004).

The plants sprayed with dry yeast extract 6 g. L^{-1} were a significant exceeded may be to the effect of yeast in the vegetative growth, to produce ATP and D-Ribose phosphate –S-S- energy, as well as its role in increasing the production of substances that stimulate plant growth, contains the major and minor nutrients shown in Table 4., effect of the synthesis of amino acids, helps divide and elongate cells, which reflects positively in increasing the height of the plant. (Reed & Nagodawithana, 1991), or due to the content of yeast extract from stimulating substances for growth, such as cytokines, thiamin, niacin, riboflavin, vitamin B12 and folic acid, important for growth, represents the increase in the leaf area, positively affects the increase of photosynthesis activity, reflected positively on the vegetative system, including the number of branches (Hegazi & Awad, 2002).

Conclusions

Results showed in this experiment, Myrtus plant's response to spraying of organic fertilizer (ALGAZON) and dry yeast extract, which reflected a positively improvement in the vegetative parameters and yield of the volatile oil and its quality.

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Conflict of interest

The authors declare that they have no conflict of interest photographed the samples.

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تأثير الرش بالسماد العضوي ALGAZON ومستخلص خميرة الخبز الجافة في بعض الصفات الخضرية لنبات الياس .L *Myrtus communis* وحاصله من الزيت الطيار

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المستخلص: أجريت الدراسة في الظلة القماشية التابعة لمحطة الابحاث الزراعية، كلية الزراعة، جامعة البصرة، موقع كرمة علي للموسم الزراعي 2018– 2019 بهدف معرفة تأثير رش السماد العضوي Algazon ومستخلص خميرة الخبز الجافة في بعض الصفات الخضرية لنبات الياس .*Myrtus communs* **L** وحاصله من الزيت الطيار, نفذت الدراسة باستخدام تصميم القطاعات العشوائية الكاملة Randomized Complete Block Design (R.C.B.D) بعاملين الأول السماد العضوي بثلاث تراكيز (0 و 1.5و 3) مل لتر$^{-1}$ والعامل الثاني مستخلص خميرة الخبز الجافة بالتراكيز (0 و3 و6) غم لتر$^{-1}$ وبواقع خمسة رشات بين رشه واخرى شهر, واستعمل البرنامج الاحصائيGenStat 2013 لتحليل البيانات احصائيا وقورنت المتوسطات حسب اختبار اقل فرق معنوي (L.S.D) على مستوى احتمال 5%. أظهرت النتائج أن الرش بمستخلص السماد العضوي Algazon بتركيز 3مل.لتر$^{-1}$ أدى الى زيادة معنوية في ارتفاع النبات وقطر الساق الرئيس والمساحة الورقية وعدد الافرع والوزنين الطري والجاف للأوراق والنسبة المئوية للمادة الجافة لها, إذ أعطت أعلى القيم بلغت 8.77سم^2 ,13.13ملم , 10.19فرع نبات$^{-1}$,442.0 **غم** ,95.55 غم ,21.52% على التوالي والنسبة المئوية للزيت وحاصل النبات من الزيت وانتاجية الهكتار من الزيت الطيار ومعامل الانكسار والوزن النوعي وكثافة الزيت, إذ بلغ 0.450 %, 0.432 غم , 23.981 كغم .هكتار$^{-1}$,0.801,1.473, 0.799 ملغم. مايكروليتر على التوالي ,كما أظهرت النتائج أن الرش بمستخلص خميرة الخبز تركيز 6غم.لتر$^{-1}$ ادى إلى زيادة معنوية في جميع الصفات الخضرية المدروسة وحاصل الزيت. وكان للتداخل بين معاملات الرش بالسماد العضوي تركيز3 مل لتر$^{-1}$ ومستخلص خميرة الخبز الجافة تركيز 6غم. لتر$^{-1}$ تأثيراً معنوياً ,إذ أدى الى زيادة ارتفاع النبات وقطر الساق الرئيس والمساحة الورقية وعدد الافرع الوزنين الطري والجاف للاوراق والنسبة المئوية للمادة الجافة اذ بلغت 97.89 سم، 14.08ملم، 9.14سم^2 ،13.89فرع نبات$^{-1}$، 469.9غم، 103.55غم، 21.96%، على التوالي قياساً بالمقارنة وكذلك أدى الى زيادة النسبة المئوية للزيت وحاصل النبات وانتاجية الهكتار من الزيت الطيار ومعامل الانكسار للزيت ووزنه النوعي وكثافته 0.454% ،0.473غم، 26.260كغم هكتار$^{-1}$، 1.473، 0.811، 0.823 ملغم ماكروليتر$^{-1}$، على التوالي مقارنة بمعاملة المقارنة ,وازداد التأثير كلما زاد التركيز.

كلمات مفتاحية: نبات الياس *Myrtus communs* L , السماد العضوي Algazon, خميرة الخبز, النمو الخضري, الزيت الطيار.