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 1 g L and the control. Al-Doghachi et al. (2012) report that leaves 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 (*Ascceuflume 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 Composition | Extract (%) | Organic fertilizer (Algazon) Composition | Extract (%) |
|-------------------------------|-------------|-------------------------------------------|-------------|
| N                             | 7.80        | Indole acetic acid                         | 0.002       |
| P                             | 3.90        | Phosphorus oxide p2o5                      | 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           |
| K2O                           | 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) | Other components | Value (mg. g⁻¹) |
|---------------|-----------------|------------------|---------------|---------------|---------------|------------------|----------------|
| Glycine       | 0.103           | P                | 12.50         | Adenine       | 5.48          | Another components | 90             |
| 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          | Adenine       | 5.48          |                  |                |
| 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          | Phosphate     | 38            |                  |                |
| Leucine       | 0.067           | Biotin           | 1.6           | Niacin        | 5.3           |                  |                |
|               |                 | Inositol         | 33.9          |               |               |                  |                |
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 (cm²), 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 cm², 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 cm², 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 cm², 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 cm², 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 (cm²) | main branches number (plant. branch⁻¹) | fresh weight of leaves (g) | dry weight of leaves (g) | percentage of dry matter (%) |
|-----------------------------------|-----------------------|--------------------|--------------------|-----------------|----------------------------------------|---------------------------|--------------------------|-------------------------------|
|                                   | 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.D₀.₀₅                         |                      | 2.02               | 7.67               | 0.535           | 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.D₀.₀₅                         |                      | 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.D₀.₀₅                         |                      | 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±0.02a     | 0.748±0.005c  | 0.748±0.006c   |
|                                  | 3                   | 0.403±0.002b         | 0.277±0.001b  | 15.382±0.11b                  | 1.471±0.011a    | 0.762±0.006b  | 0.757±0.004b   |
|                                  | 6                   | 0.414±0.001a         | 0.313±0.001a  | 17.407±0.09c                  | 1.472±0.01a     | 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±0.03b     | 0.766±0.009c  | 0.754±0.005c   |
|                                  | 3                   | 0.417±0.003b         | 0.311±0.001b  | 17.271±0.11b                  | 1.472±0.01a     | 0.781±0.007b  | 0.757±0.004b   |
|                                  | 6                   | 0.426±0.001a         | 0.338±0.002a  | 18.758±0.09c                  | 1.472±0.02b     | 0.805±0.006a  | 0.804±0.005a   |
| 3                                | 0                   | 0.444±0.003b         | 0.394±0.001c  | 21.913±0.14a                  | 1.472±0.02b     | 0.793±0.005c  | 0.795±0.003b   |
|                                  | 3                   | 0.450±0.002a         | 0.428±0.001b  | 23.765±0.13b                  | 1.472±0.01b     | 0.799±0.004b  | 0.777±0.005c   |
|                                  | 6                   | 0.454±0.002a         | 0.473±0.002a  | 26.260±0.09c                  | 1.473±0.02b     | 0.811±0.006a  | 0.823±0.006a   |
| L.S.D₀.₀₅                        |                     | 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±0.02b                   | 0.769±0.006c    | 0.759±0.004a  |
| 1.5                              | 0.420±0.001b         | 0.317±0.001b         | 17.586±0.08b | 1.472±0.01b                   | 0.784±0.005b    | 0.771±0.003b  |
| 3                                | 0.450±0.001a         | 0.432±0.002a         | 23.981±0.11a | 1.473±0.01b                   | 0.801±0.004a    | 0.799±0.004c  |
| L.S.D₀.₀₅                        |                     | 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±0.01b                   | 0.769±0.005c    | 0.766±0.004b  |
| 3                                | 0.423±0.001b         | 0.339±0.001b         | 18.806±0.09b | 1.472±0.02b                   | 0.781±0.005b    | 0.764±0.006b  |
| 6                                | 0.431±0.002a         | 0.375±0.001a         | 20.810±0.15a | 1.472±0.01b                   | 0.805±0.004a    | 0.800±0.007a  |
| L.S.D₀.₀₅                        |                     | 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 خمرة الخبز الجافة في بعض الصفات الخضرية لنبات الياس Myrtus communis L. وحاصله من الزيت الطيار

أقياس إسماعيل صالح وفاطمة علي حسن وخولة حمزة محمد

المستهل: 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 خمرة الخبز الجافة في بعض الصفات الخضرية لنبات الياس Myrtus communis 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 تركيزات 0, 1.5 وا 3 مل لتر-1 والعامل الثاني مستخلص خمرة الخبز الجافة بالتركيزات 0, 3 وا 6 غم لتر-1. ويخضع خمسة رشات بين رشة واحدة شهر، واستعمل البرنامج الإحصائي GenStat 2013 لتحليل البيانات وقوئنت المتوسطات حسب اختبار أقل فرق معنوي L.S.D (LS Means) على مستوى احتمال 5%.

أظهرت النتائج أن الرش بالسماد العضوي Algazon تركيز 3 مل لتر-1 أدى إلى زيادة معنوية في ارتفاع النبات وقطر الساق الرئيس والمساحة الورقية وعدد الافرع والوزن الطري والجاف للأوراق والنسبة المئوية للمادة الجافة. إذ أعطت أعلى القيم بلغت 8.77 سم، 13.13 ملم، 10.19 فرع نبات-1، 442.0 غم، 95.55 غم، 21.52 % على التوالي. ونسبة الزيت وحاصل النبات، وانتاجية الهكتار من الزيت الطيار ومعامل الانكسار وكثافة الزيت، إذ بلغ 0.450 %، 0.432 غم، 0.801,1.473, 0.799 ملغم. ماكروليتر على التوالي كما أظهرت النتائج أن الرش بالسماد العضوي تركيز 3 مل لتر-1 أدى إلى زيادة معنوية في جميع الصفات الخضرية المدروسة وحاصل الزيت. وكان للاختلاف بين معالجات الرش بالسماد العضوي تركيز 3 مل لتر-1 مستخلص خمرة الخبز الجافة تركيز 6 غم. لتر-1 تأثيراً مشابه انcreaseاً إلى زيادة ارتفاع النبات وقطر الساق الرئيس والمساحة الورقية وعدد الافرع والوزن الطري والجاف للأوراق، والنسبة المئوية للمادة الجافة إذ بلغت 97.89 سم، 14.08 ملم، 13.89 فرع نبات-1، 469.9 غم، 103.55 غم، 21.96 %، على التوالي. وكان التوالي قياسياً بالمقارنة مع ذلك أدأ إلى زيادة النسبة المئوية للزيت وحاصل النبات، وانتاجية الهكتار من الزيت الطيار ومعامل الانكسار للزيت ووزنه النوعي وكثافة الزيت معامل الانكسار، على التوالي، 0.81,1.473, 0.823 ملغم ماكروليتر-1، على التوالي مقارنة مع معاملة المصدرة وارتفاع التأثير كلما زاد التركيز。

كلمات مفتاحية: نبات الياس، السماد العضوي Myrtus communis L، السماد العضوي Algazon، خمرة الخبز الجافة، الزيت الطيار.