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THE EFFECT OF ADDITION OF ACETAMIPRID, SALICYLIC ACID AND BIO-HEALTH TO THE CULTURE MEDIUM TO DETERMINING THE CHEMICAL CONTENT OF ALGAE SPECIES FROM CARBOHYDRATES.

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Abstract

This study was conducted at the Laboratory of Life Sciences, College of Education for Girls, University of Kufa to study and stimulate the chemical content of some microalgae species (*Chroococcus minor, Spirulina gigantea, Chlorella vulgaris*) attached of some aquatic plants (*Ceratophyllum demersum, Phragmites australis* and *Typha domingensis*) spread in different locations of the Shutt AL-Kuf. Where these algae have been isolated, diagnosed and developed were selected three culture medium (Chu10, Chu13, BG11) for culturing and development of these algae under control conditions (2 ± 25°C, intensity of illumination 3000 Lux and 8:16 light: darkness system). This study included the follow-up of the effect of some factors such as (1- Acetamiprid insecticide; 2- Salicylic acid; 3- bio-health fertilizer) in determining the chemical content of algae studied from (carbohydrates).

As for the amount of carbohydrates, their content may be affected morally when the implants are treated with insecticide. We found that the highest production of carbohydrates was recorded in *Chroococcus minor* when developed in Chu 10 after treatment with acetamiprid at 47.23 mg/g (dry weight), while the lowest amount was recorded at *Chroococcus minor* when developed in Chu13 and reached 30.53 mg/ g(dry weight). For Salicylic acid treatment, the highest amount of carbohydrates was isolated from *Chlorella vulgaris* after developing in BG11 and reached 97.30 mg/g (dry weight). The lowest amount obtained from the moss *Spirulina gigantea* when developed in BG11 was 83.50 mg/g (dry weight). While the highest amount of carbohydrates was recorded at the development of *Chlorella vulgaris* in BG11 after the treatment of bio-health fertilizer at 98.80 mg/g (dry weight) and the lowest value recorded at *Spirulina gigantea* and reached 80.83 mg /g (dry weight) at Development in BG11.

Key words: Chemical, content, carbohydrates, *Chlorella vulgaris*, *Chroococcus minor*, *Spirulina gigantea*.

Introduction

Algae is a group of autotrophic thallus that have no roots, legs, or leaves. As well as the lack of ownership of the fruits and flowers and they contain photosynthesis pigment (chlorophyll), as it is Chlorophyll A is the main pigment in photosynthesis as it possesses algae. Algae also have many auxiliary pigments, including chlorophyll (b, c, d, e) as well as carotenoid symbiotics, zanthophiles and bileprotein (Athbi, 2011). Microalgae are important components of different ecosystems and are important in being the primary products in the food chain. On which organisms depend for their food, they are the first links of the food chain and through the process of photosynthesis prepares the medium in which they grow with the necessary oxygen for the breathing of other organisms, their cells are simple in their composition, but they are a completely mutated plant, so under controlled environmental conditions, they transform, efficiently, the photo-relationship and nutrients available in the environment into different bio compounds of high nutritional value (Goldman, 1979). Algae are characterized by their presence within two kingdoms where blue-green algae, called Cyanobacteria are placed within the kingdom of the primitive Monera and are characterized by being primitive beings prokaryote, while the rest of the algae people are located within the kingdom of the avant-garde Protista, which is Real-core eukaryotic objects (Sze, 1997). Cells high algal growth and the ability to absorb nutrients and within a temperate climate with natural conditions compared to high-end plants (Mulbry

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and Wlkie, 2001). A number of studies and research aimed at stimulating and increasing the production of biomass of algae, especially microalgae, have been conducted in recent years, because of their high nutrient absorption ability and their rapid growth rates when compared with Other plant organisms, so they're algae. One of the most efficient organisms in the production of biomass and because of this distinct content of proteins, fats, carbohydrates and fatty acids enabled them to be more resistant to other organisms to environmental changes in the medium on which they grow. Also because of its ability to compete with other neighborhoods in access to food and energy, it was able to be present and widespread in various environments and even extreme ones (Patil *et al*., 2007; Jayanta *et al*., 2012; Wolk, 1973; Al-Salman, 2015). Therefore, the study of chemical content is one of the methods used to estimate the content Because algae contain these important nutrients, a number of attempts have been made to use them as food for fish, poultry and others and to determine the importance of the presence of each acid. It is included in its chemical composition, its faecal effects and its benefits for these organisms, which depend on it in its diet, as is the case with research and studies conducted by researchers (Al-Rikabi, 2003; Lopez *et al*., 2015). As a result of the foregoing, there has been great interest in identifying the chemical composition of algae and their faecal properties and this interest has coincided with the development of different chemical testing mechanisms and devices Some research has addressed this aspect of the fact that these organisms are rich in proteins, carbohydrates, vitamins and fats, including these studies (Al-Rikabi, 2003; Al-Ali, 2004; Al-Badri, 2001) as well as foreign studies focused on the identification of chemical content (Plaza *et al*., 2008; Spolaore *et al*., 2006; Gouveia *et al*., 2008).

A number of scientific studies were conducted in different regions of the world to establish what is known as algal farms and then treat these farms with various growth stimulants and these processes have given positive results in raising the biochemical content of carbohydrates, proteins and total fats, fatty acids) Talebi *et al*., 2015).

Materials and Methods

Collection of samples

The samples were collected from the Shatt al-Kufa (Zerga area), which is located north of the city of Kufa, about 5 km at latitude 32.25 north and longitude 44.1 east, in November, 2018 to study and stimulate the chemical content of some species algal attached on some aquatic plants which plants (*Ceratophyllum demersum*, *Phragmites australis* and *Typha domingensis*) spread in different locations of the Shatt al-Kufa. Where was isolated and the diagnosis and purification of a set of conjoined micro-algal species of these plants included these species (*Chroococcus minor, Chlorella vulgaris, Spirulina gigantea)*.

Preparation of the culture of growth.

Be among the growth medium was Stoke solutions this study, three types of these media were used in the implantation medium (Chu10, Chu13, BG11) and these circles were sterilized by autoclave for 20 minutes under pressure of 1.5 atmospheres at a temperature of 120 m (Al-Aarajy, 1996).

Algae isolation and purification

• Method of dilution: Ten test tubes were prepared, each containing a volume of 9 milliliters of liquid implantation, then one milliliter of water sample was added to tube 1 and then taken the volume of 1 milliliter from it and transferred to tube no. 2 and so on to tube no. 10, then the test tubes in the growth cabin were held freely 2±25ºC and lighting ranging from (130-150) microns thin/ m^2/tha and for 8:16 hours lighting: darkness until a single moss isolation was obtained (Stein, 1973).

• Spray plate of Method: A drop or two of the sample leaker to isolate and purify the algae was taken from it on the surface of a petri dish containing the solid clay center and was deployed on the hard surface of the dish and the dishes were heated for a period ranging from (4-8) days in the growth cabin and under the conditions of growth mentioned above after the development of moss on a solid center, was Isolated by a needle, Loop was transferred to another solid medium and this process was restored until a single moss farm was acquired cultures Unialgal (Stein, 1975).

Algae culture

After the isolation and diagnosis, the algae were transferred to the liquid implant edifice by means of a sterile pipette in the case of the liquid medium and by the sterile loop in the case of the solid middle or from both mediums to a number of 100 milliliters of glass rotors each containing 70 milliliters of sterile implant center and closed the nozzle. The roundabout was soured with sterile cotton and transported to the growth cabin under the conditions previously mentioned, after which the farmer was shaken and the transplant continued until good growth was achieved in the stabilization phase (Stein, 1975).

Algae identification

Algae was diagnosed using Olympus photomicroscope using (Prescott, 1982; Prescott, 1984; Edward *et al*., 2010).

Table 1: The cultures media (Chu10, Chu13 and BG11) used in algae development.

T	The concentration Chu-10	The solution concent.g / L	Size Added L/ ml	The concentrations Chu-13	The solution concent.g / L	Size Added L/ ml	The concentrations BG11	The solution concent.g/L	Size Added L/ ml
1	$NaNO_3$	150	10	CaCl2	10.7	10	$NaNO_3$	150	10
2	$MgSO_4.7H_2O$	7.5	10	K2PO4	8	10	$MgSO_4.7H_2O$	7.5	10
3	$K2HPO_4.3H_2O$	4.0	10	KNO3	40	10	$K2HPO_4.3H_2O$	4.0	10
4	$CaCl_2.2H_2O$	3.6	10	MgSO4.7H2O	20	10	$CaCl_2.2H_2O$	3.6	10
5	Citric acid	0.6	10	Ferric citrate	2	10	Citric acid	0.6	10
6	Ferric citrate	0.6	10	Citric acid	10	10	Ferric citrate	0.6	10
7	$Na_2 CO_3$	2.0	10	Micro element		1	$Na_2 CO_3$	2.0	10
8	EDTA-Na	0.1	10	a-H_3BO_3	5.1		EDTA-Na	0.1	10
9	Micronutrient Solution a- H_3BO_3 b-Zn $SO47H_2O$ c-$MnSO_4.H_2O$ d-Cu $SO_4.5H_2O$ e-$(NH_4)6Mo$ $7O24.4H_2O$	 Mg/l 61.0 287.0 169.0 2.5 12.5	1	b-$CoCl_2$ c-$ZnSO_4.7H_2O$ d-$CUSO_4.5H_2O$ e-Na_2MoO_4 f-$MnCl_2$	0.02 0.44 0.16 0.084 0.362		Micronutrient Solution a- H_3BO_3 b-Zn $SO47H_2O$ c-$MnSO_4.H_2O$ d-Cu $SO_4.5H_2O$ e-$(NH_4)6Mo$ $7O24.4H_2O$	 Mg/l 61.0 287.0 169.0 2.5 12.5	1

1. Division: Chlorophyta; Class: Chlorophyceae; Order: Chlorellales; Family: Chlorellaceae; Genus: *Chlorella vulgaris.*

2. Division: Cyanophyta; Class: Cyanophyceae; Order: Oscillatoriales; Family: Oscillatoriaceae; Genus*: Spirulina gigantea.*

3. Division: Cyanophyta; Class: Cyanophyceae; Order: Chroococcales; Family: Chroococcaceae; Genus: *Chroococcus minor*.

Study the impact of certain environmental factors on biochemical content and the nutritional value of moss

• First: The effect of treatment with acetamiprid insecticide:

It is a widespread insecticide if the concentration (3) mg/L in addition to the control treatment that was not treated with any concentration of Acetamiprid Mospilan and based on the concentration of the active substance installed on the packaging and in order to prepare the said concentration was prepared a series of fear for the pesticide and took volumes. It was added to the liter-sized moss farm and placed in the cab (Narasimha and Venkatarman,1985).

• Second: The effect of the treatment with Salicylic acid:

The Salicylic acid in the form of white granular was used at a concentration of (50) mg/l, then dissolved the (50) g in Salicylic acid (2ml) of ethyl alcohol both individually and then the volume was completed to 1 liter using distilled water to obtain the desired concentration in a dilution manner.

• Third: The effect of treatment with Biohealth:

Bio-health fertilizer used in this trial and produced by Human Tech Gmbh consists of 75% Humin acid, seaweed extracts 1% seaweed extracts, 11% Bacillus Trichmaoderandia mushroom and water by 11%. For 40 mg/L implants over time and time periods (0.10, 15, 20, 25, 30) days.

Estimating the amount of carbohydrates

The total amount of carbohydrates in moss samples was estimated based on the Phenol-Sulphuric acid method and according to the source (Herbert *et al*., 1971) and as described in the following steps:

1. We prepare a series of standard solutions for the treasury clocks to get the following concentrations (10, 20, 40, 60, 80 and 100) microgram/cm3

2. Take the size (0.5) cm^3 from the series of standard solutions prepared above and (0.5) cm^3 from the sample to estimate the amount of carbohydrates in it.

3. Add (0.5) cm^3 of phenol detector 5% which came with the addition of (5 g) of pure phenol in a certain volume of distilled water and then complete the volume to (100) cm^3 with distilled water for each test tube and mix well.

4. Add (2.5) cm^3 of pure concentrated sulphuric acid (98%) for each tube and then leave to cool at room temperature and the appearance of brown color.

5. Absorption measured at wavelength (488) nanometer use distilled water as a blank zeroing solution.

Make a standard curve for the relationship between glucose concentration and absorption and then calculate

Table 2: Effect of treatment culture medium with acetamiprid on the average chemical content of total carbohydrates mg / g (dry weight) of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Insecticide		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	63.37±1.95	38.27±0.81	42.97±2.55	33.57±10.85	33.07±3.15	45.57±5.89
Chroococcus minor	64.80±1.06	31.20±5.43	36.33±4.05	47.23±6.10	30.53±1.60	33.03±6.82
Spirulina gigantea	50.20±4.63	48.83±1.70	47.43±2.25	36.87±0.99	35.70±1.71	33.53±1.86
LSD	5.92	6.63	6.10	14.41	4.53	10.61

the concentration of glucose for the models used after comparing it with glucose concentrations in the standard curve brings the standard glucose solution with a concentration (100) microgram/cm^3 where it brings a dissolved (100) mg of glucose sugar in size (1 liter) water Distilled.

Statistical analysis

Statistical analysis was carried out by the Spss v.24 statistical program package where the descriptive count represented b (arithmetic average+standard deviation) and to compare the main and secondary totals to determine the lowest moral difference LSD was used the ANOVA single variance analysis test. Probability level 0.05.

Results and Discussion

The effect of treatment with insecticide (Acetamiprid) on the tested algae content of carbohydrates

The response of carbohydrates to the treatment of acetamiprid was clear, the results of acetamiprid indicated that there was a clear moral decrease when compared with the control of total carbohydrate production values. The algae *Chlorella vulgaris* was recored (33.57, 33.07, 45.57) mg/g (dry weight). While *Chroococcus minor* was (47.23, 30.53, 33.03) mg/g (dry weight) and *Spirulina gigantea* record (36.87, 35.70, 33.53) mg/g (dry weight) in Chu10, Chu13, BG11, respectively. As a result, the highest production of carbohydrates was recorded in *Chroococcus minor* when developed in Chu10 acepritamid pesticide laboratory at 47.23 mg/g (dry weight), while the lowest amount was recorded at *Chroococcus minor* when developed in Chu13 and reached 30.53 mg/g (dry weight) table 2.

When treating acetamiprid in the treatment of the pesticide, it has caused a moral decrease in the percentages of carbohydrates extracted from algae under test compared to control where the *Chlorella vulgaris* recorded (20.30, 18.00, 18.77%) and *Chroococcus minor*. It recorded (14.57, 23.90, 16.33%) and the *Spirulina gigantea* recorded (21.73, 21.40, 13.13%). When following the results of the percentage, we note that the highest percentage of carbohydrates recorded at *Chroococcus minor* was in Chu13 supported by insecticide and amounted to 23.90% while the lowest percentage of carbohydrates recorded from moss *Spirulina gigantea* when developed in BGll laboratory Acetamiprid insecticide reached 13.13% table 3.

The effect of salicylic acid treatment on the tested algae content of carbohydrates

As for the effect of Salicylic acid treatment on the production of total carbohydrates, the results showed moral differences in the amount of total carbohydrate production of the tested species after their development in the circles of treatment Salicylic acid as follows, *Chlorella vulgaris* (89.90, 90.30, 97.30) mg/g (dry weight). The *Chroococcus minor* (92.90, 89.43, 91.83) mg/g (dry weight) while the *Spirulina gigantea* was (87.93, 85.17, 83.50) mg/g (dry weight) recorded in, Chu10 Chu13, BG11 supported by Salicylic acid respectively. By following up on the results it is clear that the highest amount of carbohydrates was isolated from *Chlorella vulgaris* after developing in BGll coefficient with Salicylic acid and amounted to 97.30 mg/g (dry weight). The lowest amount of total carbohydrates was obtained from *Spirulina gigantea* when developed in the BG11 and reached 83.50 mg/g (dry weight) table 4.

Table 3: Effect of treatment culture medium with acetamiprid on the mean percentage of total carbohydrate of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Insecticide		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	24.03±1.46	26.30±0.79	30.70±1.55	20.30±1.05	18.00±1.40	18.77±0.57
Chroococcus minor	23.00±3.58	25.80±1.31	35.77±3.64	14.57±1.99	23.90±1.73	16.33±0.40
Spirulina gigantea	34.53±1.67	26.37±2.42	27.57±1.91	21.73±1.83	21.40±1.20	13.13±1.01
LSD	4.85	3.31	5.06	3.35	2.92	1.42

Table 4: Effect of treatment with salicylic acid on average chemical content of total carbohydrates mg / g (dry weight) of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Salicylic acid		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	86.06±2.04	80.13±3.21	79.20±7.76	89.90±0.36	90.30±0.90	97.30±2.52
Chroococcus minor	80.57±1.34	77.13±2.61	83.40±5.67	92.90±4.25	89.43±0.75	91.83±2.02
Spirulina gigantea	81.50±1.06	81.40±1.13	77.80±4.95	87.93±1.40	85.17±4.07	83.50±2.78
LSD	4.95	3.07	12.47	5.17	4.89	4.92

When examining the effect of the treatment of Salicylic acid development circles on the average percentage of total carbohydrates of the moss tested, *Chlorella vulgaris* recorded (75.83, 76.57, 82.50%) while *Chroococcus minor* (75.83, 77.03, 79.17%) and *Spirulina gigantea* recorded (78.27, 76.50, 75.67%) in Chu10, Chu13, BG11, respectively. Therefore, the highest percentage of total carbohydrates was recorded at *Chlorella vulgaris*, specifically at the BG11 where it was 82.50% and the lowest percentage of carbohydrates was recorded from the *Spirulina gigantea* after its development in BG11 and when this medium was treated with Salicylic acid at 75.67%, table 5.

The effect of bio-health treatment on the tested algae content of carbohydrates

The results of the biohealth treatment on the average total carbohydrate content of the tested species of algal. *Chlorella vulgaris* produced a quantity of carbohydrates (84.13, 90.50, 98.80) mg/g (dry weight) while *Chroococcus minor* was (84.10, 83.17, 84.17) mg/g (dry weight) and this study indicated that the amount of carbohydrates produced from *Spirulina gigantea* was (90.53, 83.83, 3.37, 80.83) mg/g (dry weight) in Chu10, Chu13, BG11 respectively. Based on the results of this study, we found that the highest amount of carbohydrates was recorded when developing *Chlorella vulgaris* in BG11 after the treatment of biohealth and reached 98.80 mg/g (dry weight) and the lowest value in *Spirulina gigantea* was recorded 80.83 mg/g (dry weight) when developed in BG11 table 6.

When calculating the percentage of total carbohydrates when treating biohealth development circles, we find that this treatment has had an impact on the average chemical content of total carbohydrates mg/g (dry weight) of the tested moss types, as *Chlorella vulgaris* gave (75.47, 83.50, 87.17%) while *Chroococcus minor* recorded (78.97, 75.50, 81.83%) as well as *Spirulina gigantea* recorded (85.50, 91.83, 71.17%) in Chu13, Chu10, BG11, respectively and from follow-up results we find that the highest percentage of total carbohydrates was produced from *Spirulina gigantea* in Chu13 after the treatment of biohealth was 91.83%. The lowest value was recorded in *Spirulina gigantea* in, BG11 which accounted for 71.17%, table 7.

Discussion

This decrease in content is due to the containment of pesticides containing elements or compounds that have a detrimental effect on the content of the cell or the process of manufacture, for example, it has been found that pesticides containing cadmium or chlorine and high concentrations are associated with peptides and converted to other harmful compounds such as (Metallothioneins). It may be due to the effect of pesticides on moss in the phase of the psychological growth, which caused a decrease in cell division and decreased growth in general, which is accompanied by the lack of organic compounds (Dasilva *et al*., 1975) and may be due to the different response of moss to the effect of pesticides as the blue-green algae that is characterized by Being more sensitive than the rest of the types of algae being primitive nucleus and does not have complex devices to help them to exclude the effect of these pesticides where algae differ in terms of the composition of their bodies, for example, green algae blueness consists of gels mostly compared to other algae containing cellular walls High lycée that earns such races more resistant to pesticide entry than

Table 5: Effect of treatment with salicylic acid on the mean percentage of total carbohydrate of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Salicylic acid		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	54.67±4.05	62.77±11.71	57.40±8.03	75.83±3.75	76.57±1.69	82.50±4.27
Chroococcus minor	61.33±4.46	59.43±0.64	60.73±9.48	75.83±2.47	77.03±1.00	79.17±1.04
Spirulina gigantea	64.03±5.69	58.40±5.80	68.73±10.36	78.27±3.70	76.50±2.29	75.67±4.93
LSD	9.56	15.09	18.66	6.71	3.48	7.62

Table 6: Effect of treatment with salicylic acid on average chemical content of total carbohydrates mg / g (dry weight) of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Biohealth		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	74.13±4.41	76.90±3.00	70.77±10.41	84.13±4.23	90.50±4.92	98.80±1.48
Chroococcus minor	72.80±2.07	80.90±0.40	80.07±4.98	84.10±5.30	83.17±2.36	84.17±2.36
Spirulina gigantea	79.60±1.91	80.03±1.53	78.07±4.56	90.53±6.05	83.37±6.82	80.83±0.29
LSD	5.89	4.13	14.31	10.49	10.08	3.23

(Torres *et al*., 1988). This study is consistent with a study conducted by (Nystrom *et al*., 2002) effect of pesticides acetamiprid, glyphosate, two toxic substances where its effect on the process of photosynthesis was observed as it led to inhibition by inhibiting the chain of transmission of electrons, as observed its effect on the growth rate and decrease of p. The amount of carbohydrates within cell bodies, as well as inhibition of photosynthesis (Cheng *et al*., 1972). The sensitivity of different groups of algae to hexazinone was tested and it was shown that the blue-green algae and diatoms were more sensitive as there was a lack of fat content accompanied by a lack of growth of up to 50 percent (Peterson *et al*., 1997). The increase in the components of the content (carbohydrate) after treatment with bio health is due to the fact that biofertilizer is a living components that contains microorganisms (active and inactive) such as bacteria and fungi, which helps stabilize nitrogen and increased nutrient availability as well as the secretion of nutrients that help algae growth. bio health is a microbial vaccine of a variety of high-activity microbial species that act as plant and fertilizer feeders that stabilize nitrogen both takaful and non-tectonic and provide 25% nitrogen fertilizer, For example, the organic phosphate is dissolved which can be absorbed by the algae and provides 50% of phosphate fertilizers. Bio-fertilizers A substance that contains microorganisms at the plantation or added to the soil helps accelerate growth by increasing the availability of the plant's primary nutrients bio health adds nutrients through natural processes such as nitrogen stabilization in the atmosphere and the resistance of developing algae in these culture medium to salinity (Lee *et al*., 2013). Biofertilizer also has an important role in increasing the absorption of elements necessary for plant growth as it works on increasing the readiness of the elements to absorb and also increase the secretion of oxen, which helps to increase the division of cells and the extension and increase in size (Wahyuni *et al*., 2003) also found that the treatment of photo health and biophysics growth groups resulted in increased production of the alkaline content of studied algae compared to untreated control. The treatment of bio-fertilizing circles helps to increase the rate of chlorophyll building by activating the enzymes necessary for its construction and reducing the enzyme responsible for the destruction of the chlorophyll molecule. The bio-catalyst also increases the algal content of nitrogen because it contains the nitrogen-fixing bacteria as 70%. In the composition of chlorophyll, plastids contain half of the total algae content of nitrogen (Misra and Mohapatra, 2017). The bio health also plays an important role in increasing the formation of chlorophyll. This is demonstrated by high values of biomolecules in algae grown in circles The plant is treated with bio health fertilizer by helping to release compounds called siderophores, which act as a clotting agent for the iron element (Winget and Gold, 2007). The reason for the high values of the chemical content in algae grown in the culture medium added to the salicylic acid because this acid is a plant hormone, which plays an important role in the process of photosynthesis and preservation of organelles and promote the process of taking ions and transport within the body of the alga a significant role in making changes. In the formation of plastids, which helps to increase the production of biochemical compounds produced by the process of photosynthesis within the algae cell and fat and then increase the proportion of

Table 7: Effect of treatment the culture medium with bio health on the mean percentage of total carbohydrate of the test algal species.

Totals / Algae	Mean±SD			Mean±SD		
	Control			Biohealth		
	Chu 10	Chu 13	BG11	Chu 10	Chu 13	BG11
Chlorella vulgaris	68.70±10.44	67.43±7.46	62.37±8.40	75.47±5.64	83.50±3.77	87.17±0.76
Chroococcus minor	79.57±9.61	62.47±3.87	61.10±6.70	78.97±0.85	75.50±4.27	81.83±2.36
Spirulina gigantea	72.07±4.12	75.73±6.03	74.07±3.99	85.50±5.07	91.83±4.65	71.17±1.26
LSD	17.04	11.92	13.21	8.81	8.48	3.21

carbohydrate within the chemical content of algae under test. As well as its regulatory and mechanical role in different metabolic processes in plants (Rane *et al*., 1995). It also has a significant role changes in the structure of plastids, in addition to its regulatory and mechanical role in the various metabolic processes in the plant, as well as salicylic acid is responsible for raising the efficiency of the immune system of the algae as well as increasing the validity of nutrients and facilitate absorption and the secretion of substances that stimulate growth and strengthen the immune system in algae (Farooq, 2006).

Conclusions

The effect of the studied factors was acetamiprid, biohealth, salicylic acid an important role in determining the concentration of the biochemical content of tested algae (carbohydrates). The treatment of acetamiprid has shown a significant inhibitory effect on the process of building of carbohydrates. The results indicate that treatment of the culture medium with concentrations of (bio-health, salicylic acid) has increased the amount of (carbohydrates) in the test species (*Chroococcus minor, Spirulina gigantea, Chlorella vulgaris*). The results indicate that the microalgae have a good content of the carbohydrates and the ability to produce by high concentrations and easy to extract these components of biochemical.

Recommendations

Expanding the study and diagnosis of other types of algae from localized algae and providing large farms with large areas to benefit from their biochemical content in the fields of industry and fuel and it is possible to benefit from the components of the biochemical content that is stimulated by the production of medicines and antibiotics. Conducting other studies to determine the best ways to extract the biochemical molecules in terms of cost and efficiency.

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