بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

PHYSIOLOGICAL STUDIES ON SOME GREEN ALGAE

By

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ABSTRACT

Results obtained could be Summarized as follows :

Growth response of *Chlorella sorokiniana* and *scenedesmus dimorphus* to Physiological factors :

1-The results show clearly that the growth parameters of *Chlorella* at 22°C was more intense than other temperature degrees , which recorded maximum production during the period of 6 days of culture age , while growth of *Scenedesmus* at 17°C which recorded the best results were increasing until the end of incubation periods . The relative high temperature at 32°C led to a depression in growth of *Chlorella sorokiniana* and *Scenedesmus dimorphus* .

2- The results showed that growth parameters of *Chlorella and Scenedesmus* at 12000 Lux was reached highest represented as total cell count , yield and accumulation of pigments which compared with the other treatments, which recorded maximum production during the period 4 – 6 days of experimental periods , also the growth parameters of *Scenedesmus* at 5000 Lux were increasing until 6 days followed by drop in Chlorophyll accumulation .

3-The results showed that growth parameters of *Chlorella* at Continuous light treatment (24L\0D Light-dark cycle) was increasing yield , which recorded maximum production at 4 days of incubation periods compared with the other treatments, as well as there was *Scenedesmus* at the same treatment ,which recorded maximum production during the period of 4 days of culture age , it is also obvious that these growth parameters recorded their highest at 10 L\ 14 D treatment at the end of incubation periods (8 days) represented as total cell count , weight gain and pigments content , this phenomenon could be explained highly at 12L\ 12D of 4 days , while that was accumulation of pigments increased intensified at 6 days .

4- The results showed that growth parameters of *Chlorella* at treatment two T_2 : B.B.M medium supplemented with BA at a concentration of 0.25 mg/L medium was increasing yield expressed as total cell count during the period 6 days of incubation periods compared with other treatments , also obvious that pigments accumulated recorded their highest values at the end of incubation periods (8 days), while the growth parameters of examined algae was more intensive at treatment one T_1 : B.B.M medium supplemented with BA at a concentration of 0.5 mg/L which recorded maximum production during the period of 4 days .

5- The results showed that growth parameters of *Chlorella* at four Lines was more highest represented as cell numbers , yield gain and Chlorophyll content compared with the other treatments, which recorded maximum production during the period of 6 days of incubation periods , but revealed drop in Carotenoids content , while growth *Scenedesmus* recorded maximum production at control treatment (one lines)of 6 days of culture age represented as total cell count, but also the yield and pigments accumulation which recorded highest values until the end of incubation periods (8 days) .

Key words :-
Green algae – Physiological factors – Enviroment-
***Chlorella – Scenedesmus*- Heavy metals .**

*The results showed that mass production of examined algae in outdoor conditions which recorded maximum production of 4 days of outdoor cultivation ,The Crude protein content of Chlorella sorokiniana was 46.7 % ,The Crude fat content was 14.8 %, Total Carbohydrate content was 11.6 % , Ash was 17.5 % . Crude Fiber 9.30 %, Nucleic acid content (RNA 2.63 % and DNA 1.72 %),and Vitamins group antioxidant B6 ,B12 ,E ,C ,B-carotene (µg\g) were found to be 0.05, 0.08, 2.20, 16.0 and 0.01 . While the Chemical composition of Scenedesmus dimorphus were found 52.3 %,12.20 %,10.06%, 14.92%, 8.83%,(3.16 and 1.43), 0.27 ,0.78 ,0.01 ,21.8 and 238.5 respectively .

* *Scenedesmus sp. and Chlorella sp.* were compared for their use in the removal and toxicity bioassays of Cu and Fe. A decrease in toxicity with regard to growth and uptake of NO_3- and NH_4 was immobilized cells had higher uptake rates of Cu and Fe suggesting that immobilization offers protection against metal toxicity. greater efficiency for metal removal . This reduction in removal efficiency was, however, more pronounced for Fe and Cu with harvesting and potential for repeated use makes the immobilized cells good tools for scavenging heavy metals from metal-contaminated environments. Results of heavy metals concentration in tissue muscle revealed that differences among the treatments control treatment, inoculated with ***Chlorella*** treatment and inoculated with ***Scenedesmus*** treatment which recorded at 12 days represented as Fe, Zn, Cu and Pb. 7.32, 13.52, 2.61 and 1.06 & 4.21, 9.64, 1.07 and 0.50 &3.82, 8.74, 0.94 and 0.96 µg\g respectively .The results showed that the drainage water treated with examined algae creates a more appropriate environment for fishes condition factor is essentially a measure of relative muscle to bone growth because the aquatic environment with its water quality is considered the main factor controlling fish health and the use of water source of a good quality is the key for successful fish production. So, the primary goal of this study was to determine agriculture drainage could be suitable for fish culture used for safe human consumption.

* This study clarify the beneficial role which the phytoplankton performs in such circumstances, where it uptakes the nitrogenous compounds, thus maintaining healthy conditions to the fish and other organisms. This phytoplankton function is helpful in resisting pollutants in water, The results show clearly that the agriculture drainage water and sewage waste water were appropriate for fish production because it is reached with inorganic nutrient but this fish are not safe for human consumption especially which heavy metals analysis revealed that highest concentration did not comply with the standards levels recommended by WHO and USEPA , must be avoided used sewage wastewater in fish culture ponds potential adverse health effects while were potential used agriculture drainage water is sufficiently treated before used by examined microalgae as mentioned in this research . Moreover ,the treated of drainage water with microalgae was the best for treatment , where it gave better water quality and fish safety adverse health human effects .

Eglal Haib

LIST OF CONTENTS