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ROLE OF CAMEL'S URINE IN GROWTH RATE OF CHROOCOCCUS SP.

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INTRODUCTION

Cyanobacteria are common and natural aquatic organisms present in many surface water. Cyanobacteria are single-celled microscopic bacteria and can be found in fresh, salt or brackish. Like plants, they use sunlight to make food and energy (Mundt and Teuscher, 1988). Under eutrophic conditions these organisms are able to form intense blooms. The bloom-forming process can be caused by increase levels of nutrients like phosphorus and nitrogen, and thus lead to water pollution in large quantities of phosphates and nitrates as well as other organic materials are therefore more aggregates of Cyanobacteria algae presence in contaminated areas containing organic waste (Reference.). The presence of algae in water sources damaged many of them drinking water contamination, leading to damage the lives of millions of the world's population in addition to algal toxins secreted into working on the death of aquatic organisms such as fish, invertebrates and other organisms (Palmer, 1977).

The medicine properties of the camel were known to Arab physicians. In days of old, Arabs have been used the camel's urine in therapy and they also treated the patients by camel's urine after boiling (Al-Nusaymi, 1984). Camel's urine has in general several chemical characteristics, its having high levels of potassium and proteins, its effectiveness as fibrinolytic factor and as a drug of useful antimicrobial activity and efficiency (Ba' Smaeel, 2004). Also camel's urine used as a disinfectant to wash wounds and sores and hair growth and strengthen hair loss and treatment As well for the treatment of baldness, dandruff disease and in the treatment of abdominal pains of and eye afflictions (Ohaj, 1993).

The current study aimed to determine the possibility of getting rid of algae contaminated ecosystem using different concentrations of camel's urine.

MATERIALS AND METHODS

Isolation and purification of algae

Chroococcus sp. isolated and scrubbed according to (Stien,1973), then purified for the purpose of obtaining axenic cultures depending on the method of (Al-Arajy, 1996) and then diagnosed based on) Desikachary, 1959; Prescott, 1975).

Development and propagation of algae

Chroococcus sp. was grown using a the middle Chu-10 axis by (Al-Arajy, 1996) and after obtaining sufficient amounts transferred to the 100 ml bottles filled with 70 ml of the former the middle and incubated at atemperature (25 ±3)˚C.

Measuring the rate of growth

The growth rate of algae counted directly by Chamber Shidu (Coombs *et al*., 1985).

Camel's urine

Urine samples were collected from camel farm in the Al- Nassiriya city, Thi-Qar province, Iraq. The samples were collected in sterile screw bottles and kept in cool boxes until transported to the laboratory.

experimental groups

Different concentrations of camel's urine and added to the algal farms which were divided into five groups as following:

Group I: the control group, contained 100 ml from *Chroococcus sp.* only.
Group II: contained 100 ml of *Chroococcus sp.* with 1ml of camel's urine (1%).
Group III: contained 100 ml of *Chroococcus sp.* with 2ml of camel's urine (2%).
Group IV: contained 100 ml of *Chroococcus sp.* with 3ml of camel's urine (3%).
Group V: contained 100 ml of *Chroococcus sp.* with 5ml of camel's urine (5%).

RESULTS

The results of the present study shown in table (1). The results indicated the camel's urine caused a significant decrease ($p < 0.05$) in the growth of algae *Chroococcus sp.* for all duration of the experiment with different concentrations of

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urine (1, 2, 3 and 5ml/100ml of farms) compared with the control group. The lowest rate ofgrowth of algae on the first day in group(V). In the first day, there was a significant decrease ($p< 0.05$) in the growth rate of *Chroococcus sp.* in groups (II,III,IV and V) compared with group (I) after one day of treatment with different concentrations (1%, 2%, 3% and 5%) of camel's urine. Also, there was a significant decrease ($p< 0.05$) in the growth rate of groups (III, IV and V) compared with group(II) in the same day (figure 1).

In the second day, the results indicated a significant decrease ($p< 0.05$) in the growth rate of *Chroococcus sp.* in groups (II,III,IV and V) compared with the control

group (group I), Also, there was a significant decrease ($p< 0.05$) in the growth rate groups (III, IV and V) compared with group (II) (figure 2).

In the third day of treatment, the results indicated a significant decrease ($p< 0.05$) in the growth of rate of *Chroococcus sp.* in groups (II,III,IV and V) compared with the control group (group I). Also, there was a significant decrease ($p< 0.05$) in the growth rate of group
(III) compared with group(II). Also, the results recorded a significant decrease ($p <0.05$) in the growth rate of *Chroococcus sp.* in groups (IV and V) compared with group (II) (figure 3).

In the fourth day, there was a significant decrease ($p< 0.05$) in the growth rate of *Chroococcus sp.* in groups (II,III, IV and V) compared with the control group. Also, theresults recorded a significant decrease ($p <0.05$) in the growth rate of *Chroococcus sp.* in groups (IV and V) compared with group (I). The growth rate of *Chroococcus sp.* decreased significantly ($p <0.05$) in groups (III, IV and V) compared with group (II) (figure 4).

In the fifth day, the results showed a significant decrease ($p< 0.05$) in the growth of rate of *Chroococcus sp.* in groups (II, III, IV and V) compared with the control group. Also, the results recorded a significant decrease ($p< 0.05$) in the growth rate of *Chroococcus* in groups(IV and (V) compared with group (I). There was a significant decrease ($p< 0.05$) in the growth rate of *Chroococcus sp.* in groups (III, IV and V) compared with group (II). While, there was no significant differencebetween groups (IV and V) (figure 5).

Table (1): Role of camel's urine in growth rate of *Chroococcus sp.*

Treatments	Growth rate (cells\1 ml)				
	1 day	2 days	3 days	4 days	5 days
Group I	44.67 ±0.88 ^{A}	94.67 ±2.60 ^{A}	55.00 ±0.58 ^{A}	49.00 ±6.66 ^{A}	33.67 ±1.86 ^{B}
Group II	17.33 ±2.19 ^{B}	53.33 ±2.85 ^{A}	47. 00 ±0.58 ^{A}	45.33 ±2.03 ^{A}	16.67 ±1.76 ^{B}
Group III	14.33 ±0.88 ^{B}	32.67 ±1.76^{A}	40.00 ±1.15 ^{A}	36.67 ±4.41 ^{A}	14.00 ±1.53 ^{B}
Group IV	11.00 ±0.58 ^{E}	27. 33 ±0.88 ^{A}	23.33 ±0.88 ^{B}	20.00 ±0.58 ^{C}	13.33 ±0.88 ^{D}
Group V	10.67 ±0.67 ^{C}	19.33 ±0.88 ^{A}	15.33 ±0.67 ^{B}	20.00 ±1.15 ^{A}	13.00 ±2.52 ^{B}

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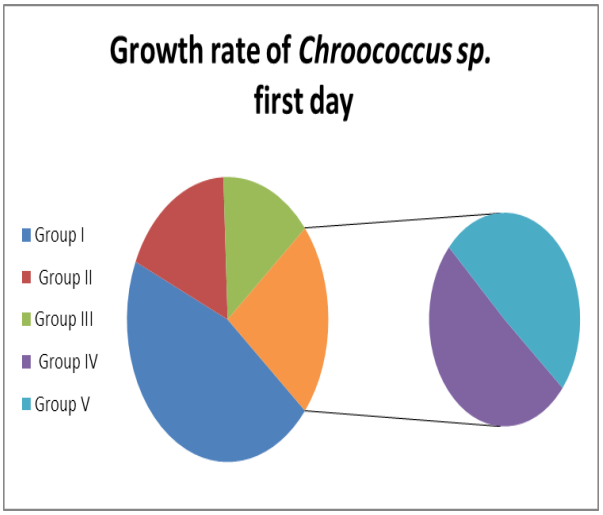

Figure (1) shows the growth rate of *Chroococcus sp.* at first day.

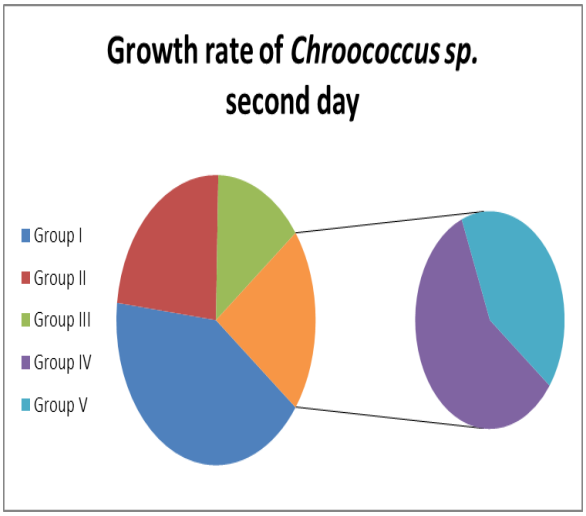

Figure (2) showed the growth rate of *Chroococcus sp.* at second day.

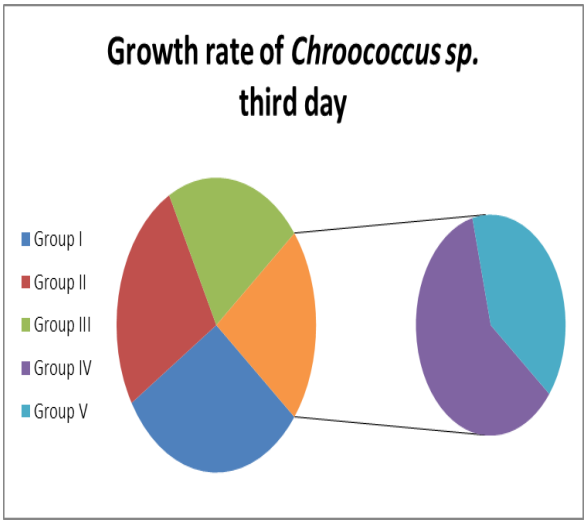

Figure (3) shows the growth rate of *Chroococcus sp.* at third day.

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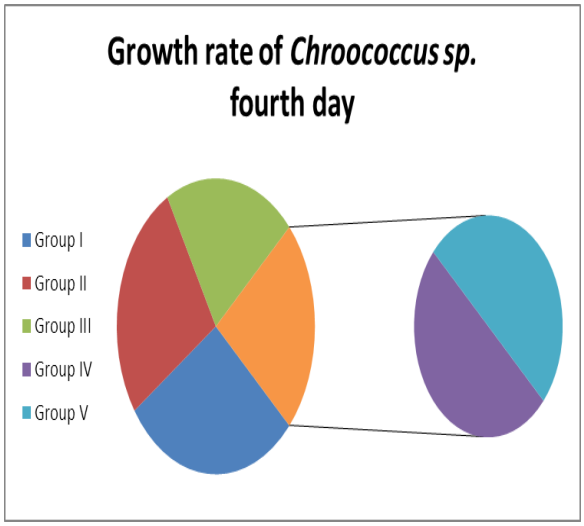

figure (4) shows the growth rate of *Chroococcus sp.*

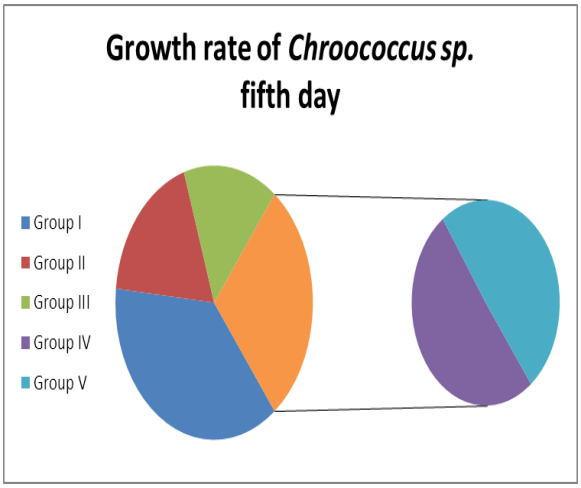

figure (5) shows the growth rate of *chroococcus sp.* at fifth day.

DISCUSSION

Cyanobacteria blooms are often called blue-green algae. Algal blooms may occur in freshwater as well as marine environments. Typically, only one or a small numberof phytoplankton species are involved, and some blooms may be recognized by discoloration of the water resulting from the high density of pigmented cells. Freshwater algal blooms are the result of an excess of nutrients, particularly some phosphates (Gilbert and Dejong, 1977). The excess of nutrients may originate from fertilizers that are applied to land for agricultural or recreational purposes.

They may also originate from household cleaning products containing phosphorus. These nutrients can then enter watersheds through water runoff. Excess carbon and nitrogen have also been suspected as causes. Presence of residual sodium carbonate acts as catalyst for the algae to bloom by providing dissolved carbon dioxide for enhanced photo synthesis in the presence of nutrients (Landsberg, 2002).

When phosphates are introduced into water systems, higher concentrations cause increased growth of algae and plants. Algae tend to grow very quickly under high nutrient availability, but each alga is short-lived, and the result is a high concentration of dead organic matter which starts to decay. The decay process consumes dissolved oxygen in the water, resulting in hypoxic conditions. Without sufficient dissolved oxygen in the water, animals and plants may die off in large numbers (Van Dolah, 2000).

The camel's urine from animal sources that havepowerful effects and medical uses a wide, as it contains many complex bioactive compounds which can act against bacterial, fungal, viral, parasitic and carcinogenic agents, and it has the ability to protect the liver against toxic agents (Salwa *et al*., 2009).

Camel’s urine contains high concentrations of (K, Mg, BUN and Ca) and low concentrations (Na, PHOS and GLU) in

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addition to the other physical, chemical and microscopic of healthful camel's urine and hydration conditions and feeding on different forages (Al- Talhi and Al-Bshan, 2006). It contains low levels of enzymatically hypoxanthin-guanine, hepatic guanase. These enzymes and the limit the cracking process and analysis of the material purine metabolic anticancer thus,a increase in the the levels of certain substances such as anti-cancer And the Alheiboxantin purine bases, And the more than that chemical analysis for the presence ofpurine bases And the in the urine of camels (Mura *et al.*, 1986).

CONCLUSION

Our results demonstrate that camel urine is able to events noticeable change in inhibition the rate of growth of algae. Camel's urine contains many chemical compounds that can be used in medical, economically and industrially. Further studies are required, using a human population to confirm theses protective effects.

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