

On the algal composition of Saria Stream in the Diyala Province– Iraq

Ismail A. M. ¹, and Al-Haidarey M. J. S. ²

¹ Departments of Biology–Collage of Science for Women/ University of Baghdad , Baghdad , Iraq

² Wetland Biogeochemistry, College of Pharmacy, Univ. of Kufa , Kufa , Iraq

Abstract:

Monthly water samples were taken from two selected sites, for nine months starting in Jan 1999. Eighty five taxa were identified at site one and seventy four taxa at site two. There were fifty two common species in both sites. Diatoms were the dominant group at both sites, followed by greens and then blue greens algae, and the seasonal variations of the species were discussed.

Key word: Algae composition, Saria Stream.

Introduction

Saria Stream is a branch from Diyala River in Diyala Government. Few investigations were published on the aquatic system in Diyala Province dealing with algal composition such as: Ismail & Saadalla (2); Sulaiman *et al.* (3); Kassim & Ismail (11); and Al-Lami *et al.* (4). The present study deals with the algae of Saria Stream which will be important as irrigation canal as well as its water using for drinking purpose.

Material and methods

Saria Stream is 81.5 km length, 12 m width, and 3m depth with discharge 36m³.sec. Two selected sites were chosen represented, upstream (St.1), and downstream (St.2) (Fig: 1). Hydro-Bios plankton net of 20μ in pore size was used to collect phytoplankton and fixed with 4% formalin solution in the field. Identification of the species was confirmed by several references (5, 6, 7, 8).

Results and discussion:

A total of 85 taxa were identified in this study. Out of the total species, 63 species was identified in the St. 1, and 74 species was identified in the St.2 (table: 1). As illustrated in the table (2), there were 52 common taxa between the two stations. Diatoms were the dominant group (49.41%), Green algae were followed (23.35%), and then Blue green algae (17.64%) from total identified species.

Such of results were observed clearly in Mahrut River (10, 3) this result showed that the water in the investigated area was not polluted. Spring was the characteristic season diversity of species at both stations (Fig: 2). Diatoms were the dominant group (68.18% and 74% respectively), Pennals were represented 85.71% from the total diatoms number (table: 1), the abundance of diatoms give a good indication for water quality (9). Such results were reported in nearby aquatic system (4, 10, 11), as well as other Iraqi running waters (12, 13). The most dominant group followed by Green algae (24.39%), then Blue green algae (18.29%) from the total identified species in the study area, such dominancy sequence was observed clearly in aquatic system (13, 14), mean while after groups were represented 9.75% from the total identified species (table: 2).

Its worthy to mention that some recorded species (*Pediastrum duplex*, *Cymbella affinis*, *Fragillaia ulnsa*, *Nitzschia palae*, and *Navicula cryptosephala*) had a wide range of appearance through the study period, as appeared more than 9 month due to there high tolerance and adaptation to different ecological ariation (table: 1). This results are come agree with other studies on Iraqi aquatic system (13, 14, 15).

As illustrated in table (1), some genera were represented by highest number of species these were: *Nitzschia* (7 species), *Cymbella* (6 species), and *Oscillatoria* (5 species).

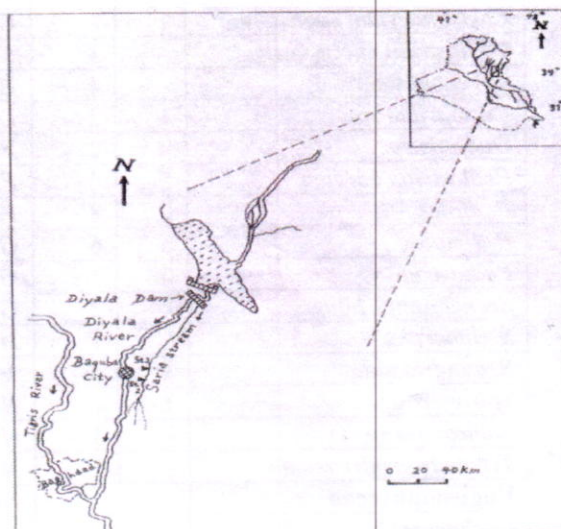


Fig.(1) Map of Iraq showing the studied stations within Saria stream

Table (1): Number of identified species according to the major classes in the period of study

Class	St.1	St.2	Common
Cyanophyceae	12	12	9
Chlorophyceae	12	16	8
Euglenophyceae	4	4	4
Dinophyceae	3	3	3
Chrysophyceae	1	1	1
Bacillariophyceae	31	38	27
Total Number	63	74	52

Table (2): List of identified algal species in Sara Stream and number of appearance.

Taxa	Station		Taxa	Station	
	St.1	St.2		St.1	St.2
Cyanophyceae			Bacillariophyceae (Centrales)		
<i>Anabaena affinis</i>	1	-	<i>Aulacosiera granulate</i>	8	8
<i>Aphanotheca clathrata</i>	1	2	<i>Coscinodiscus lacustris</i>	3	5
<i>Gleocapsa aeruginosa</i>	1	-	<i>Cyclotella comta</i>	1	1
<i>Gomphosphaerium aponiana</i>	2	1	<i>C. meneghiniana</i>	2	3
<i>Lyngbya sp.</i>	1	1	<i>C. ocellata</i>	3	8
<i>Merismopedia couvuluta</i>	-	1	<i>Cyclotella sp.</i>	2	2
<i>Merismopedia glanea</i>	-	1	Bacillariophyceae (Pennales)		
<i>Microcystis sp.</i>	1	-	<i>Achnanthes minutissima</i>	4	6
<i>O. Oscillatoria amphibi</i>	1	1	<i>Amphora ovals</i>	-	3
<i>O. limosa</i>	1	1	<i>Anomoeneis exilis</i>	5	7
<i>O. O.curviceps</i>	2	2	<i>Amphirora alata</i>	-	2
<i>O. princeps</i>	-	1	<i>Bacillaria pexillifer</i>	4	8
<i>O. tenuis</i>	5	3	<i>Caloneis sp.</i>	3	-
<i>Scytonema sp.</i>	1	2	<i>Cocconeis pediculus</i>	1	3
<i>Spirulina sp.</i>	2	4	<i>C. placentula</i>	6	7
Chlorophyceae			<i>Cymatophura elliptica</i>	5	5
<i>Antistrodesmus flactus</i>	2	-	<i>C. solea</i>	4	6
<i>Cladophera sp.</i>	1	-	<i>Cymbella affinis</i>	9	9
<i>Closterium acerosam</i>	7	5	<i>C. aspera</i>	3	3
<i>C. lanceolata</i>	2	2	<i>C. turgid</i>	-	2
<i>Coelsphaerium kuetzigiana</i>	1	-	<i>C. ventricosa</i>	-	3
<i>Coelastrum microporum</i>	-	3	<i>Cymbella sp.</i>	2	1
<i>C. reticulatum</i>	-	4	<i>Diatoma elongatum</i>	-	2
<i>Cosmarium sp.</i>	1	2	<i>D. ruglar</i>	6	6
<i>Oocystis sp.</i>	-	2	<i>Fragillaria faciculata</i>	-	3
<i>Pediastrum boryam</i>	5	6	<i>F. ulva</i>	9	4
<i>P. diplex</i>	9	8	<i>Fragillaria sp.</i>	5	7
<i>P. simplex</i>	6	6	<i>Gomphonema lanceolatum</i>	4	4
<i>Pediastrum sp.</i>	2	3	<i>G. gracile</i>	2	-
<i>Scenedesmus bijuga</i>	-	2	<i>Gyrosigma sp.</i>	-	4
<i>S. dimorphy</i>	-	1	<i>Hantzschia amphioxys</i>	3	-
<i>S. quadricanda</i>	4	6	<i>Matstigia sp.</i>	3	3
<i>Spirogyra sp.</i>	1	1	<i>Navicula cryptocephala</i>	6	6
<i>Stanrastrm sp.</i>	-	3	<i>N. radiosa</i>	-	3
<i>Tetraedron mirrimum</i>	-	1	<i>N. rhyncocehale</i>	-	2
Euglenophyceae			<i>Nitzschia acicularis</i>	2	3
<i>Euglena acus</i>	1	1	<i>N. longissima</i>	-	2
<i>E. gracilis</i>	1	2	<i>N. palae</i>	9	9
<i>Euglena sp.</i>	1	1	<i>N. sigmoidae</i>	8	8
<i>Phacus candatus</i>	2	3	<i>Nitzschia sp</i>	-	3
Dinophyceae			<i>Surirella ovalis</i>	6	8
<i>Ceratium hirundinella</i>	5	5	<i>S. robusta</i>	2	3
<i>Peridinium cinctum</i>	5	5	<i>Surirella sp.</i>	1	-
<i>P. pusillum</i>	2	1	Total Number of Identified species	63	74
Chrysophyceae					
<i>Dinobryon divergen</i>	3	1			

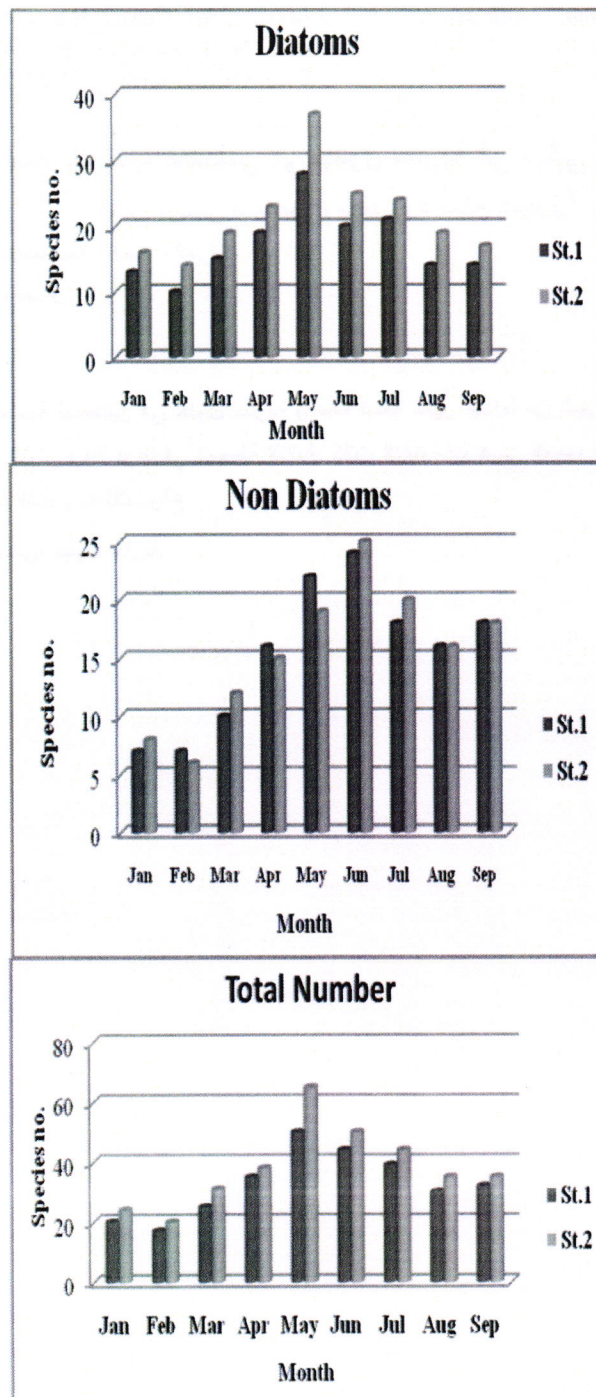


Fig (2): Monthly Variation of Diatoms, Non Diatoms, and Total Number of algae in the period of study.

References

1. H.A. Al-Saadi,, A. A. Al-Lami,, and T. I. Kassim, Regulated River: 12 (1996) 1, 27-38.
2. A. M. Ismail, and H. A. Saadula, Al-Fath. J: 10 (2001) 435-441.
3. N. I. Sulaiman, H. A.Saadula, and A. M. Ismail, International J. Environ. Studies: 58 (2001) 749-760
4. A. A. Al-Lami, H. A.Sadula, A. M. Ismail, and S. K. Salman, Al-Fath. J: 14 (2002) 289-302.
5. T. V. Desikachary, Cyanophyta (1959). Acad. Press, London, 686.
6. R. Patrick, and C. W. Reimer, The diatoms of United Stat (Vol. 2 part 1), (1975). Acad. Nat. Sci. Philadelphia Monogr. 213.
7. G. W. Prescott, How to know fresh water algae, 3rd ed. (1979), W. C. Brown, Co. Publ. Dubaqw, Iow, 977.
8. R. A. Hadi, A. A. Al-Sabonachi, and A. K. Haroon, Iraq Nova Hed. : 39 (1984) 513-557.
9. P. D. Rey, J. Taylor, A. Lass, L. Rensbery, and A. Vosloo, Determine the possible application value of diatoms as indicator of general water quality, 3rd ed. (2004) A comparison SASSS, 325-330.

10. A. M. Ismail, Diyala J: 10 (2000) 20-25.
11. T. I. Kassim, and A. M. Ismail, Diyala J: 14 (2002) 92-99.
12. A. M. Ismail, A. A. Al-Kubisi, , and H. A. Al-Saadi, Al-Qadissia Journal (2001).
13. H. A. Al-Saadi, H. A. Saddula, and A. M. Ismail, J. Al-Qadissia: 8 (2004) 1 241-254.
14. A. M. Ismail, and F. M. Hassan, J. for Aquiculture Marine, Sci, Center, Basra: 4 (2007) 1, 89-99.
15. N. I. Sulaman, and A. M. Ismail, J. Al-Nahrain Coll. Of Sci.:8 (2005) 2,23-29.

دراسة التركيب الطحلي في جدول سارية في ديالى / العراق

عباس مرتضى اسماعيل¹ ، محمد جواد صالح الحيدري²

¹قسم علوم الحياة ، كلية العلوم للبنات ، جامعة بغداد ، بغداد ، العراق

²كلية الصبيلة ، جامعة الكوفة ، الكوفة ، العراق

المخلص

أخذت العينات شهرياً من المياه السطحية لمحطتين في جدول سارية و لمدة تسعة اشهر ابتداءً من شهر كانون الثاني 1999، شخص 85 نوعاً من الطحالب منها 63 نوعاً في المحطة الاولى و 74 نوعاً في المحطة الثانية. كانت الدايتومات هي المجموعة السائدة تلتها الطحالب الخضراء و الخضر المزرق و تم مناقشة التغيرات الشهرية للأنواع.

الكلمات المفتاحية: التركيب الطحلي، جدول ساريا.