

Catostylus perezii

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(1) (2)
(2)

(1)
(2)

2010/12/06
2011/05/02

Catostylus

perezii

()

(94.18 : 220.7 ±22.8 :) / 439.7 118.8
1.76 :) / 55.2
/ 0.371 0.035 (0.57 0.25±
31.56 .(0.1: 0.027 ± 0.111 :)
%53.48
(53.71 : 11.01 ±161.6 :) / 229.9 168.2
(79.9) / 100
(1.43 : 0.31 3.21± :) / 6.2 1.05
:) / 60
:) %74.7 56.4 .(17: 3.7±23
. (5.7: 1.2 ±64.8

...

Study of chemical composition of zooplankton and jellyfish *Catostylus perezii* of coastal area of Al-Khobar, Kingdom of Saudi Arabia

M. A. Al-Owafeir⁽²⁾; M. M. Baker⁽¹⁾
and A. M. Al-Jaber⁽²⁾

⁽¹⁾ Department of Ecology, Faculty of Sciences, Damascus University, Syria

⁽²⁾ Dept. of Animal and Fish Production, College of Agriculture and Food Sciences, King Faisal University, Hofuf, Kingdom of Saudi Arabia

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ABSTRACT

This paper investigates the proximate analysis of zooplankton and the jellyfish *Catostylus perezii* through studying the content of proteins, lipids and carbohydrates (as glucose) in three different stations of Al-Khobar coastal area (Saudi Arabia) during four seasons. Physical and chemical factors of water, specific composition, abundance and biomass of zooplankton were also studied. The results indicate clear temporal and spatial differences in the content of organic matter of zooplankton. Proteins values were between 118.8 and 439.7 mg/g and lipids values were between below detection levels and 55.2 mg/g; whereas carbohydrates values ranged between 0.035 and 0.371 mg/g as dry weight. The results indicate clear differences in the content of organic matter of the jellyfish parts especially the medusa. Protein values were between 168.2 and 229.9 mg/g and lipids values were between 1.05 and 6.2 mg/g; whereas carbohydrates values were between below detection levels and 60 µg/g as dry weight. Correlation coefficient values between organic matter, chlorophyll and biomass of zooplankton were calculated.

Key Words: Biochemical composition, Zooplankton, Jellyfish, Arabian Gulf, Saudi waters.

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(Raymont, 1971; Donaldson, 1976; Morris and Hopkins, 1983; De la Bigne, 1985; Phleger *et al.*, 2000; Ikhtyar *et al.*, 2000, 2002; Yousefian & Kideys, 2003; Vijverberg & Frank, 2006)

.(Clarke & Bishop, 1948; Veloza, 2005)

(Giani, 1991)

(McClatchie, 1985; Fukuda and Naganuma, 2001; Thor *et al.*, 2002; Choe *et al.*, 2003; Richoux *et al.*, 2005; Aleya *et al.*, 2006; Jagadeesan *et al.*, 2010)

)
Catostylus perezii (2004)

(Field, 2000)

(St.1)
26 14 10N, 5013 18 E :
(26 14 04N – 50 13 30E)
26 09 44)

(St.2)
(St.3)
(N- 50 12 51E
2004

2005

2005 2004
(2004)

500 ()

176 (WP2)
200 50) 56

(0.5-)

(Refractometer)

³ /

(Dubois *et al.*, 1956)

(Malara and Chara,1972)

0490

(AOAC, Kjeldhal

1990)

()

(AOAC, 1990)

600

(AOAC, 1990) 100*

19

31.5

%057 46

St.1

.St.3

St.1

2005

/ 1.266
 .2005 / 2.74
 / 0.272 St.2 / 0.523
 .St.3

Phytoplankton

Dinoflagellates

Diatoms

Goniaulax sp,

Prorocentrum (C. furca)

.(

Pleurosigma, Coscinodiscus,

Ceratium sp, Gymnodinium sp

) *Protoperidinium sp. micans*

.Chaetoceros Rhizosolenia

St.1 ³ / 140000
³ / 25

St.3 2004
 2005

(St.1,St.2)

2005

2005

St.3

.St.1

³ / 1.5

Copepoda

%60) 58

93

7814

St.1

2005

³ /

St.3

.%66.23

Hydromedusa

Ctenophora

Cirripedia

³ /

20

³ /

282

St1

St3

(³ /

3.84)

St2

.(2005

)

:

Appendicularia

()

: Chaetognaths

.(Moller, 1984; Axiak and Civili, 1991)

(Axiak and Civili, 1991)

(Fraser, 1962;

.Morand and Dallot, 1985; Purcell, 1997)

.()

: -1

/ 439.7 118.8.
%43.97-11.8

(1)

.22.8 ± 220.7

St3 St.2

St1

2004

/ 200

St1

.2005

2004

St2

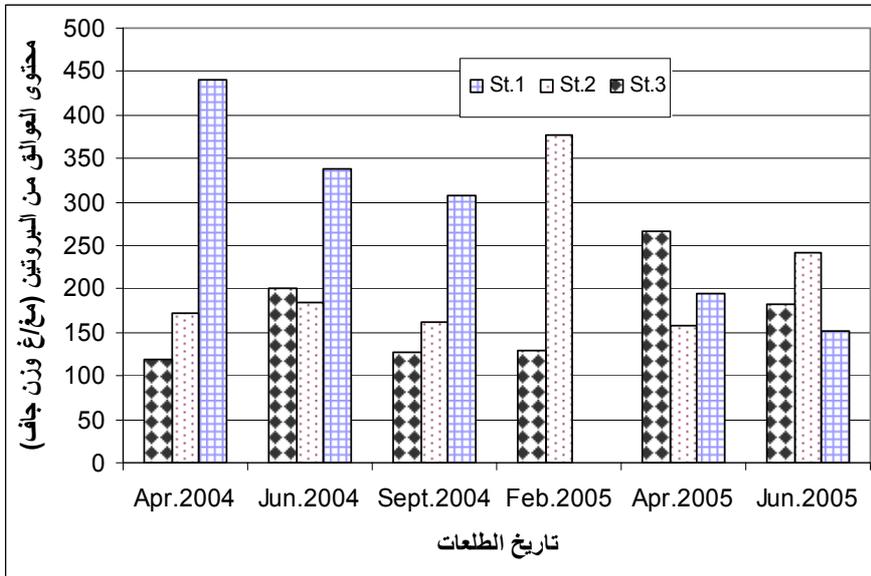
(/ 372)

St3

.2005

.2005

2005 2004



(/)

(1)

: -2

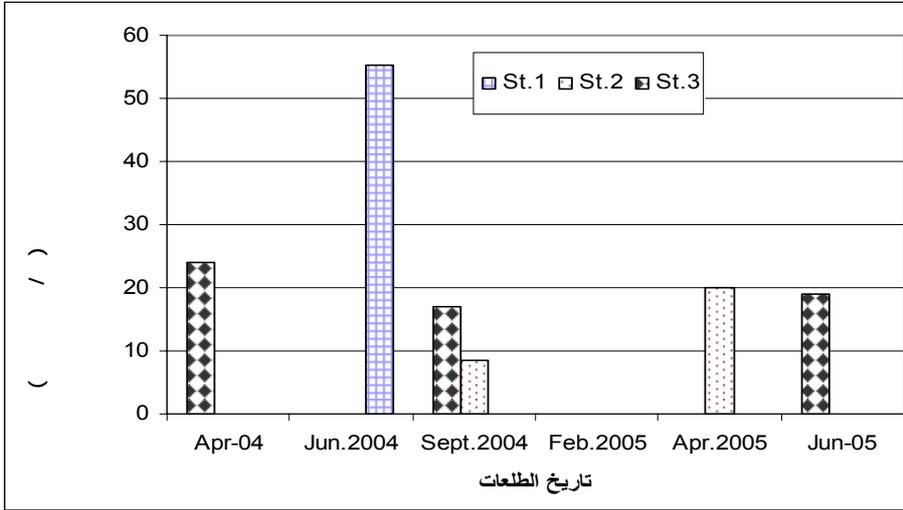
(2) St.1 / 55.2) 2004 (%5.52

St3 St2

%2.2

) St2 St3

.(0.25±1.76



(/)

(2)

: -3

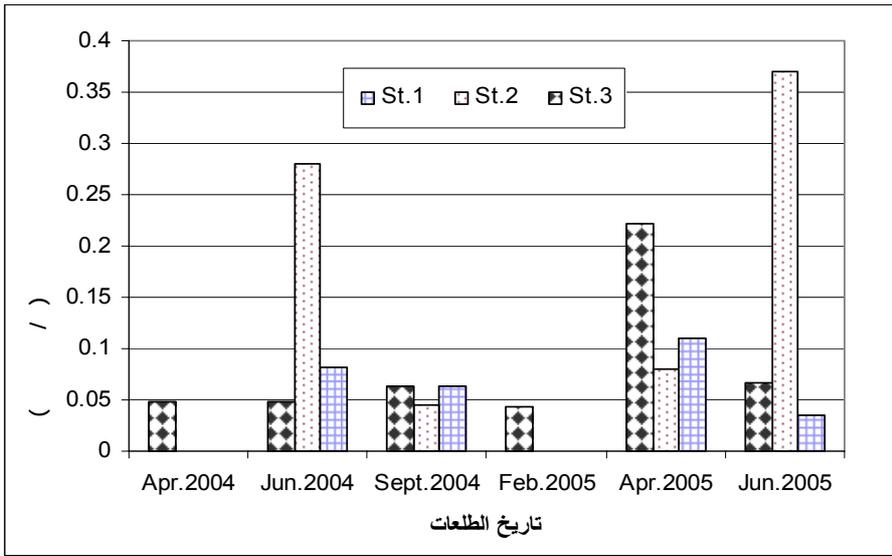
(0.027±0.111) / 0.371 0.035

%0.0371 0.0035

St2 (2005 2004)

St3 / 0.1

.(3) 2005



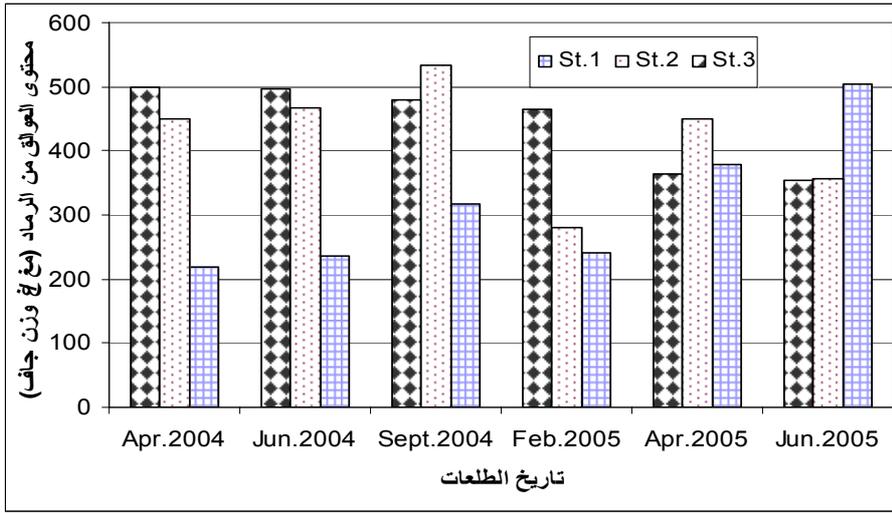
(/)

(3)

:) / 534.8 315.8 : -4
 %53.48 % 31.58 (23± .397
 .(4) St2 .

St1
 St2 2005 2004 St3
 .2005

.(Morris and Hopkins,1983)



(/)

(4)

Mc Clatchie (1985)
)

(*Goniaulax. Ceratium*

(%9.3-)

(%30-)
(%66 24)

(Parson *et al.*, 1961; Haug

and Myklestad, 1976)
Assimilation

(Lowry *et al.*, 1966)

.(Phleger *et al.*, 2000) *Salpa*

(Childress *et al.*, 1990)

.(Morris and Hopkins,1983)

Mysidacea () %35 %3
 .(Morris and Hopkins, 1983; Richoux *et al.*, 2005)

(Clarke, 1977;

.Vieira *et al.*, 2002)

()

(Ortega *et al.*,1984)

.(Bacelar-Nicolau *et al.*,2003)

(Pastorinho *et al.*, 2003)

()

(Riccardi and Mangoni,1999)

(Ohman, 1996)

(1)

()

(Morris and Hopkins, 1983) (Clarke and Bishop, 1948)

(1)

(%)	(%)	(%)	(%)	
32.9-19.4	17.3-13.9	4.2-1.4	%59.1-2.5	Clarke and Bishop (1948)
-	28.99-4.86	42-7	83.8-58.2	Azeiteiro et al. (2003)
15.8-3.4	-	10 -1.9	67.7-29.6	Morris and Hopkins (1983)
-	2.5-1	12.6 -8.3	65.7-46.8	Donalston (1976) (Decapoda)
-	12.7-6.5	18-6.1	53.6-23.4	Rao and Kumari (2002)
12.9-1.4	5.1- 0.2	77-3	82.6-30	Riccardi & Mangoni (1999) (Copepods)
-	-	5.92 -1	-	Lokman (1993)
-	7.92-3.43	17.81-9.89	75.45-59.53	Perumal et al. (2009) (Copepods)
-	14.98-5.38	19.6-11.02	40.7 -21.07	Jagadeesan et al. (2010)
53.5 -31.6	%1	5.52 -1	43.97-11.8	

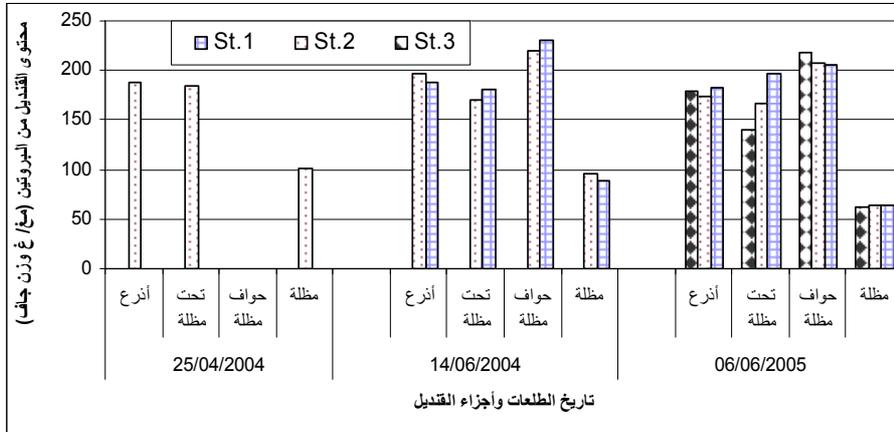
Catostylus perezii

Catostylus : () -1
 0.12± 92.91 :) %93.86 91.92 *perezii*
 .(0.54 :

: -2

11.01 :±161.6 : () / 229.9 168.2
 . %22.99 16.82 (:

140 (79.7) / 100 /
 .(5) /

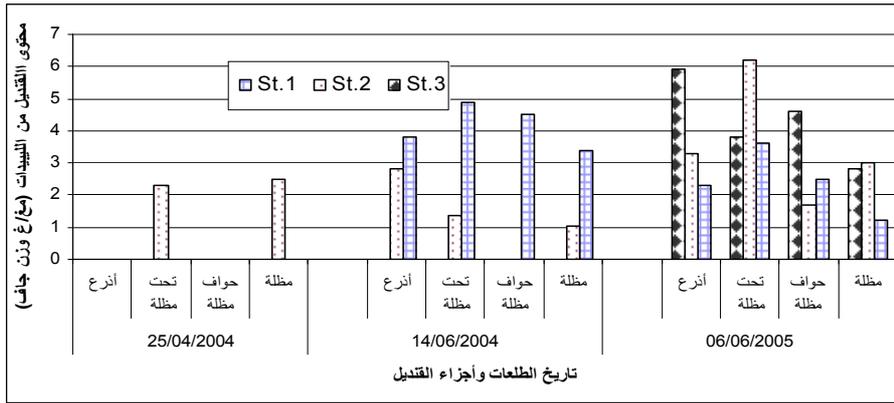


(/) *Catostylus perezii* (5)

6.2 1.05 : -3
 0.1 (1.43 : 0.31±3.21 :) /
 (6) %0.62

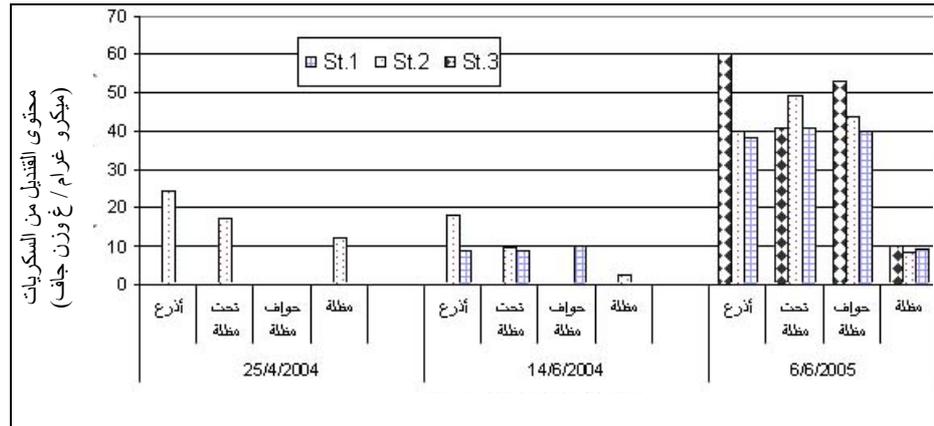
2005 2004
 St1

2005
 St.2
 .2005
 %50 (/ 3.4)



(/) *Catostylus perezii* (6) : -4

(3.7±23 :) / 60
 (7)
 / 24 2005 2004
 2005

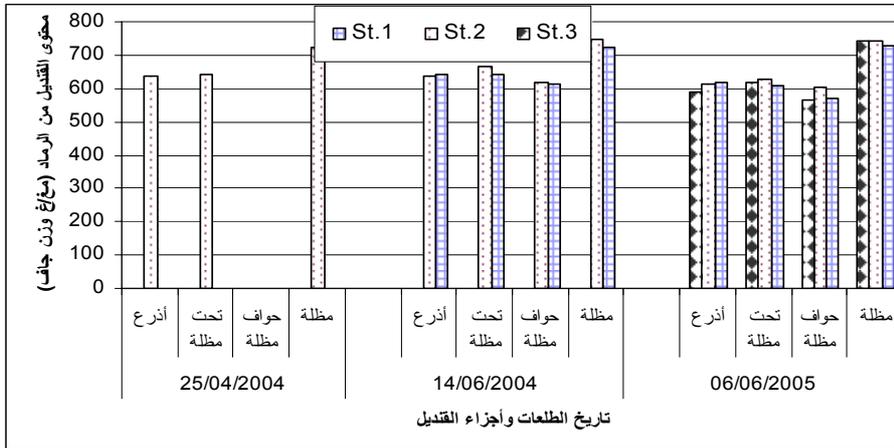


(/) *Catostylus perezii* (7)

56.4 : -5
 %74.7
) : 1.2±64.8
 (5.7 :
 / 747 564
 %70

(8)

2005 2004



Catostylus perezii

(8)

(/) .

(Arai *et al.*, 1989) (Larson, 1986; Gorsky *et al.*, 1988)

Malej %15

Pelagia noctiluca

(*et al.*, 1993)

C/P C/N

()

.(Zavodnik, 1991)

(Carli *et al.*,1991)

Cotylorhiza tuberculata *Rhizostoma pulmo*

%11.98 8.7

%27 13.73

%36.84 7.55

%0.7

%1.24 0.8

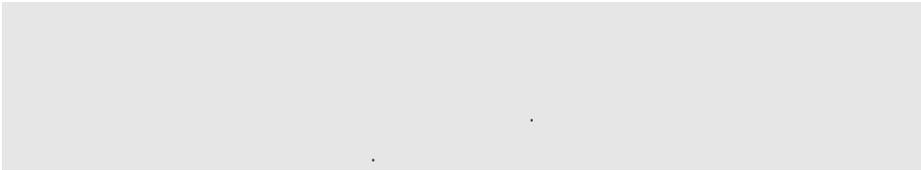
%6.4 0.47

Catostylus perezii

(2000

1999

) *Rhopilema nomadica*



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- 158
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- 32 -1 (2) 5
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