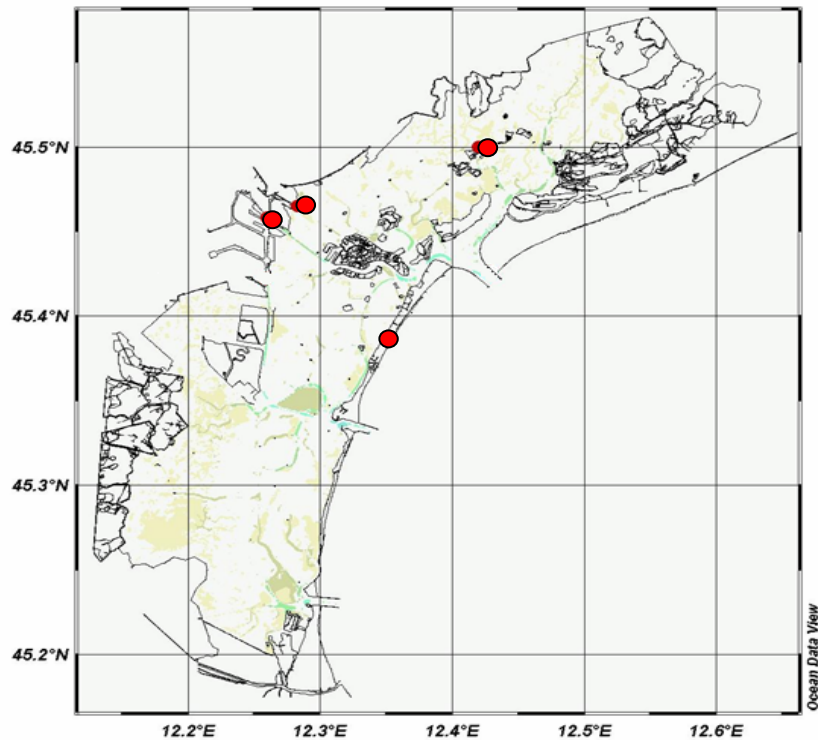


Ripartizione del carbonio nel comparto planctonico della laguna di Venezia e stima dei processi di produzione ed utilizzazione della sostanza organica

P. Del Negro, A. Pugnetti, F. Bernardi Aubry, E. Camatti, J. Coppola,
C. Larato, M. Minocci, A. Valeri, F. Acri, M. Giani, D. Berto

OGS - Dipartimento di Oceanografia Biologica (BiO)
CNR - ISMAR Venezia
ICRAM - Chioggia

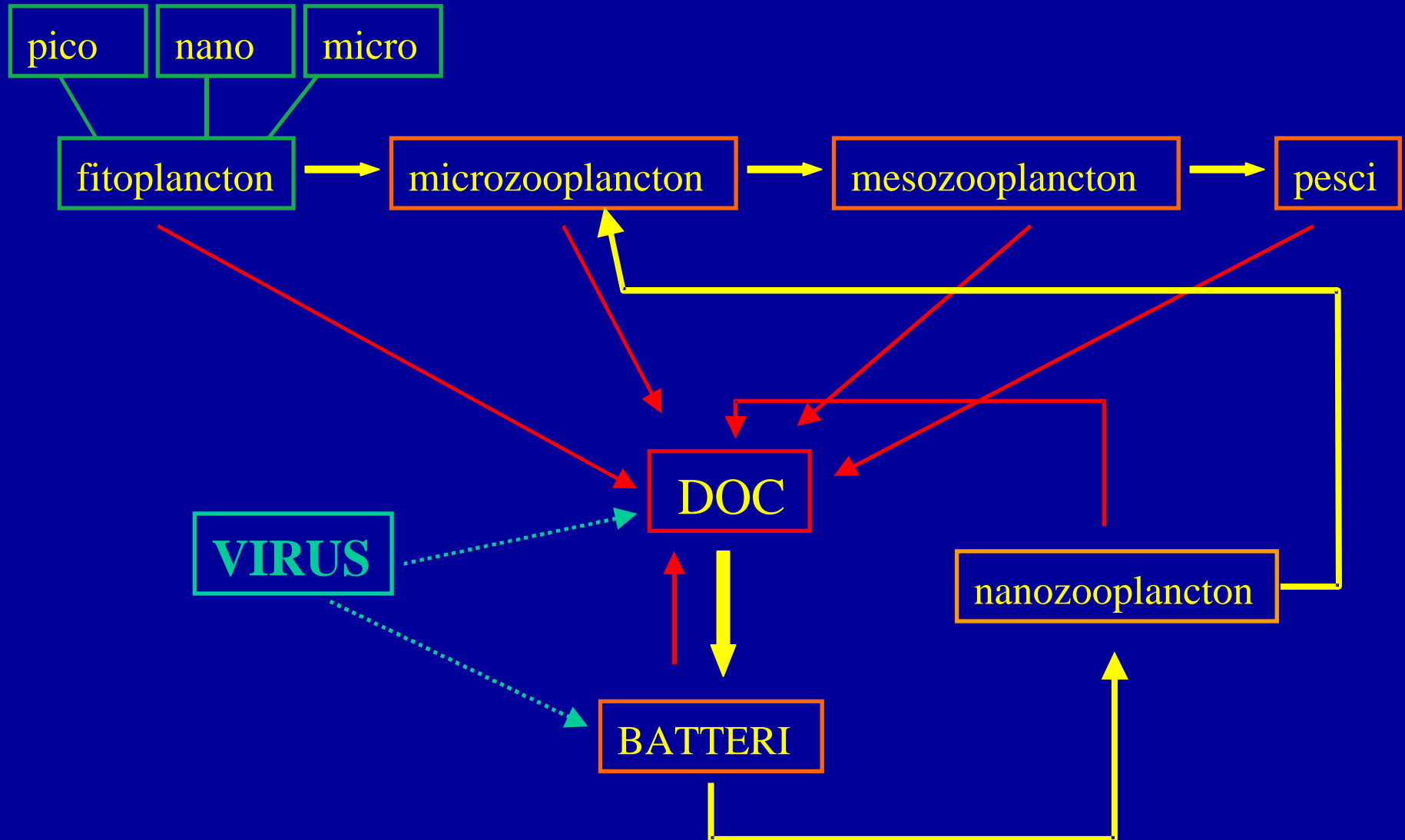


- 4 STAZIONI (● bacino settentrionale e centrale)
- S. Giuliano
 - Palude della Rosa
 - Marghera
 - Fanerogame

- campionamenti effettuati contemporaneamente per i vari parametri
- fonte di variabilità legata alle variazioni giornaliere dei processi biologici ridotta
- misure effettuate in tempi rapidi

Risultati delle campagne di studio effettuate in OTTOBRE 2004, GENNAIO 2005, APRILE 2005, LUGLIO 2005

RETI TROFICHE PLANCTONICHE

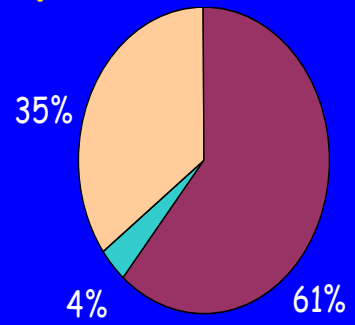


AUTOTROFI

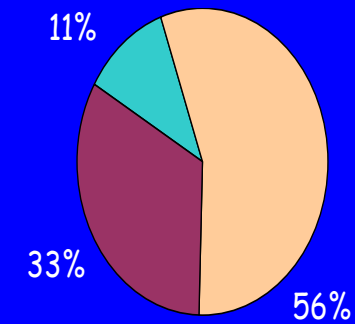
Ripartizione del C nel comparto planctonico

ETEROTROFI

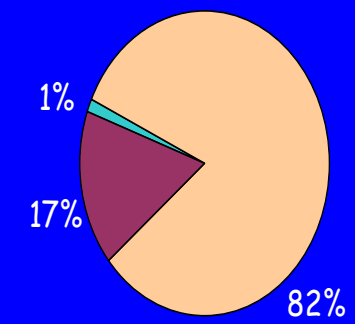
S. Giuliano



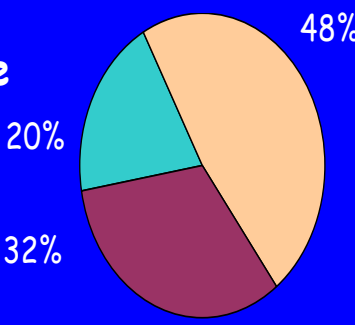
Palude della Rosa



Marghera

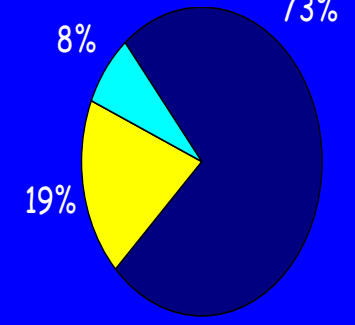


Fanerogame

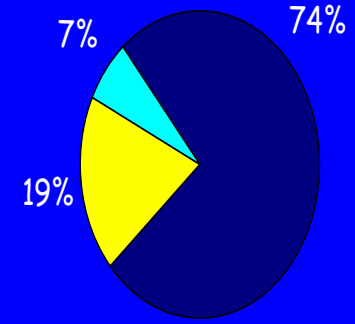


- pico
- nano
- micro

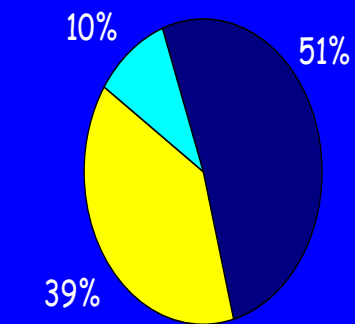
S. Giuliano



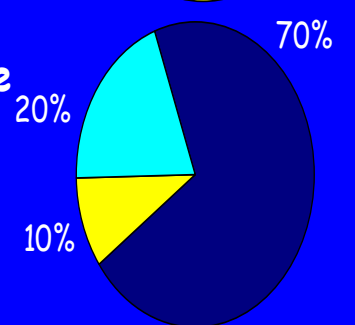
Palude della Rosa



Marghera



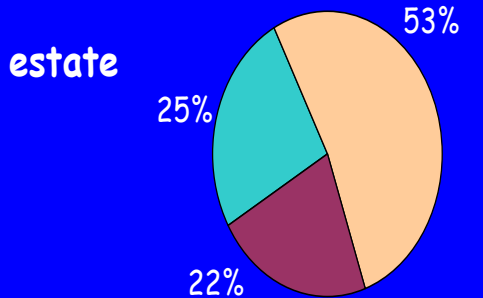
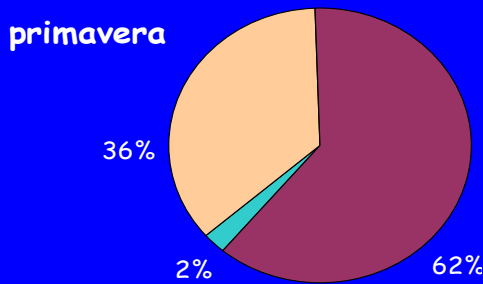
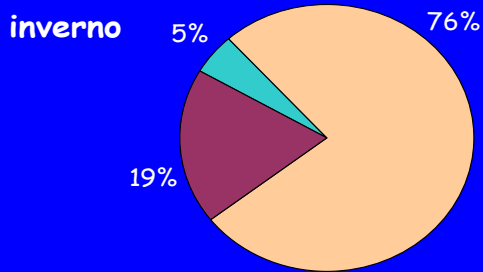
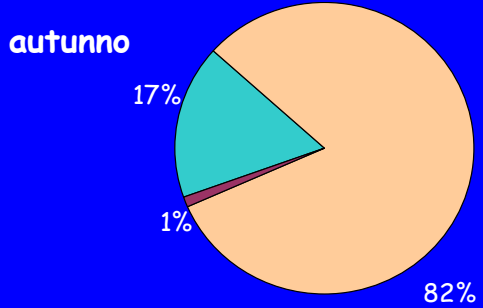
Fanerogame



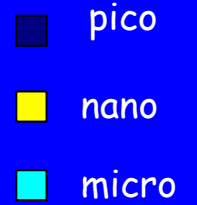
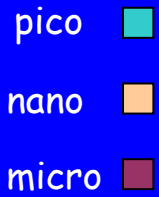
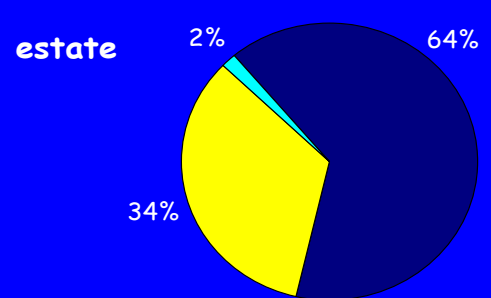
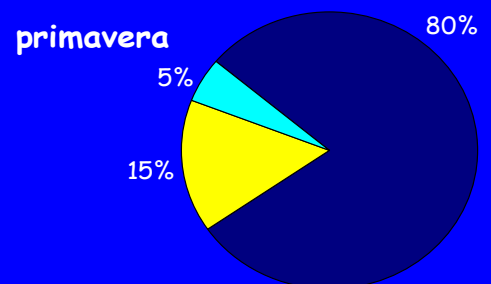
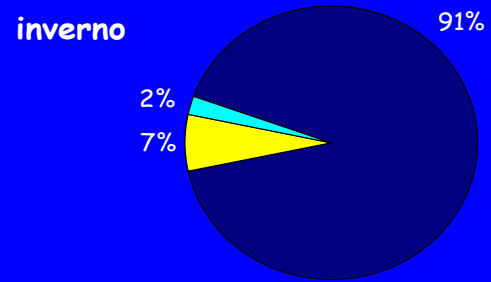
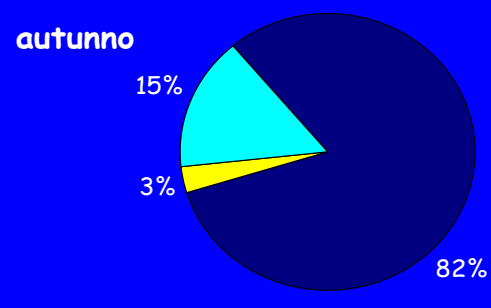
- pico
- nano
- micro

Palude della Rosa

AUTOTROFI



ETEROTROFI

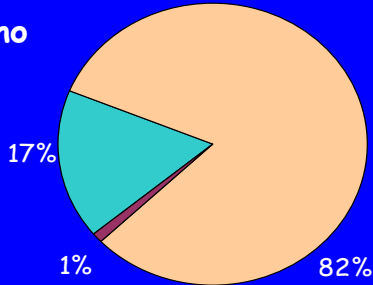


Marghera

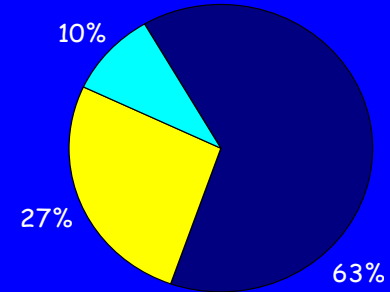
AUTOTROFI

ETEROTROFI

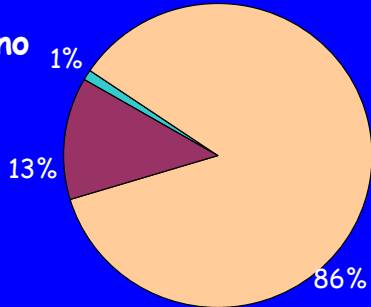
autunno



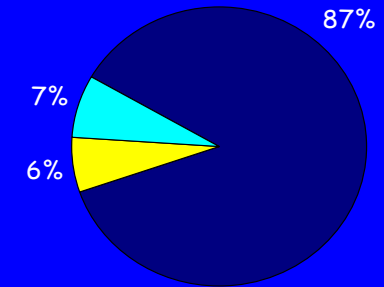
autunno



inverno



inverno



pico



nano



micro



pico



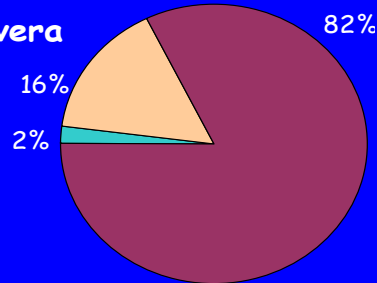
nano



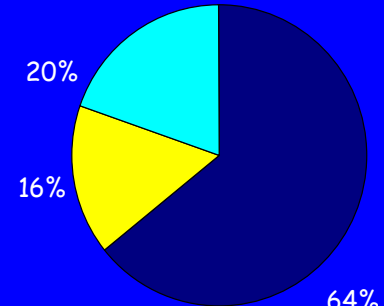
micro



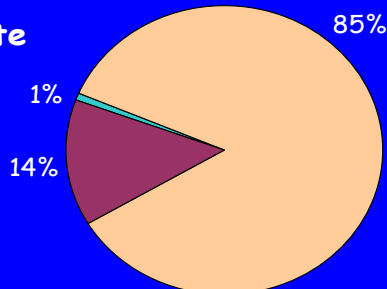
primavera



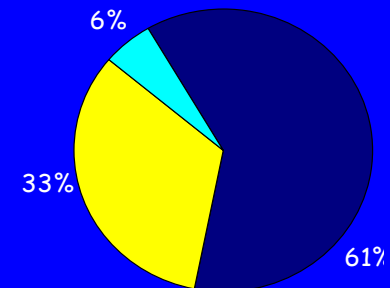
primavera



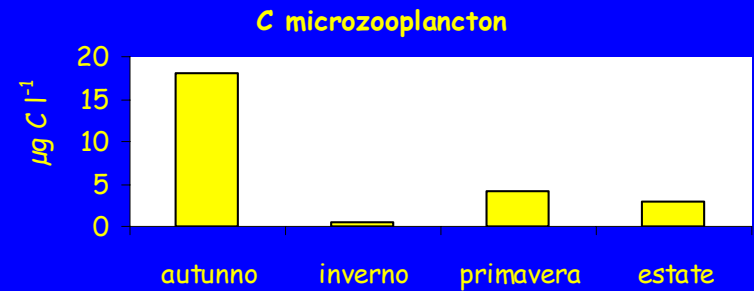
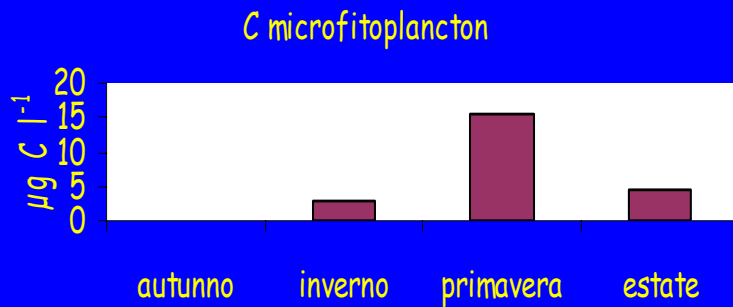
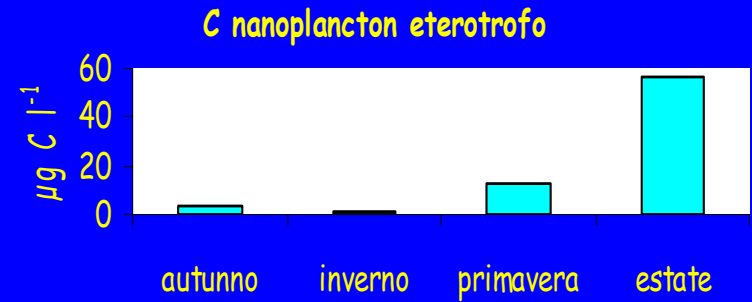
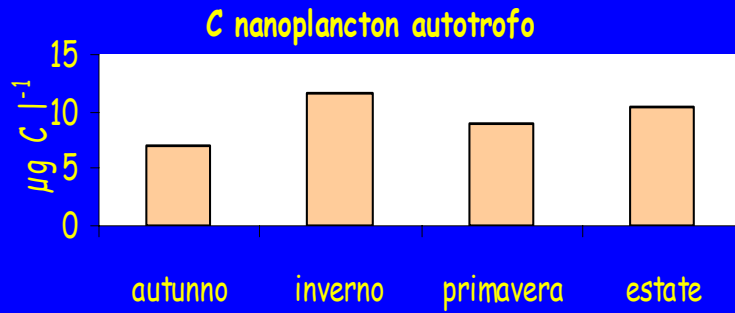
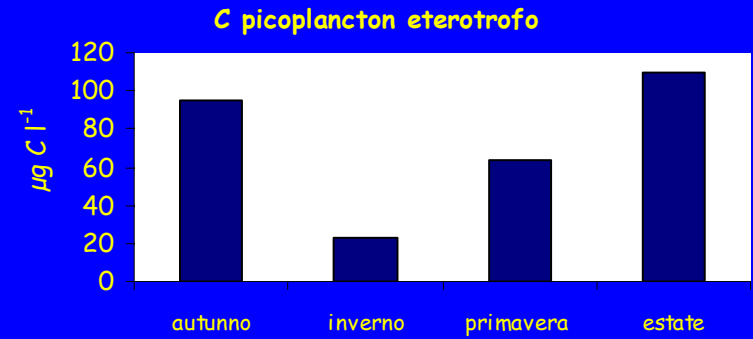
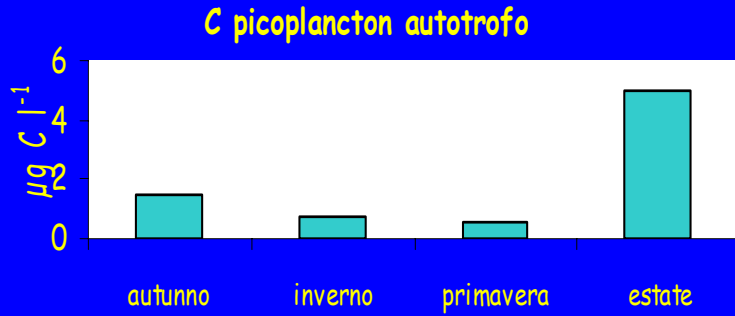
estate



estate

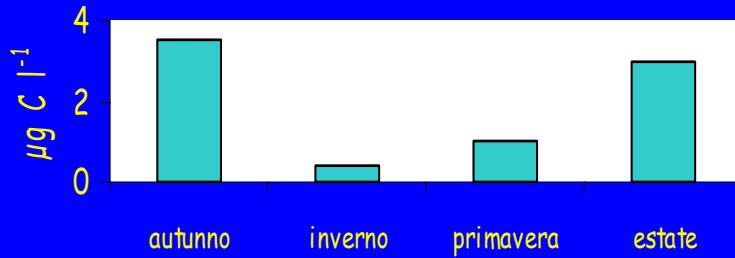


Palude della Rosa

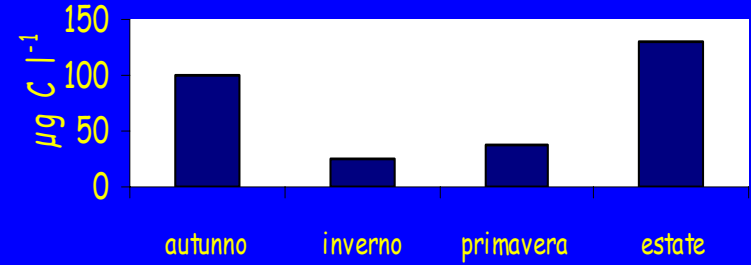


Marghera

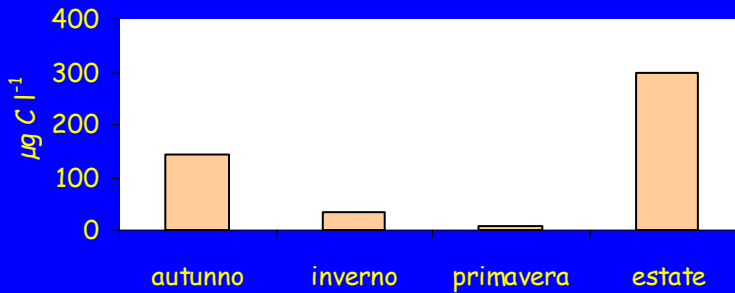
C picoplancton autotrofo



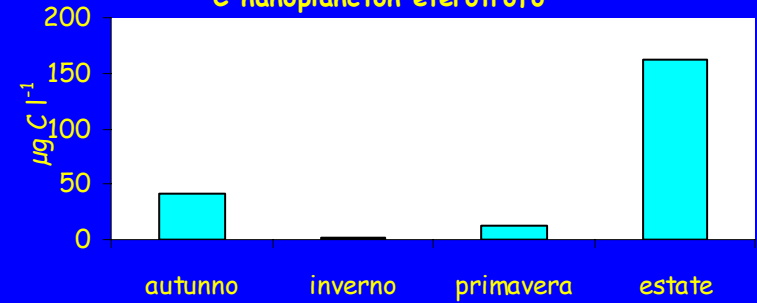
C picoplancton eterotrofo



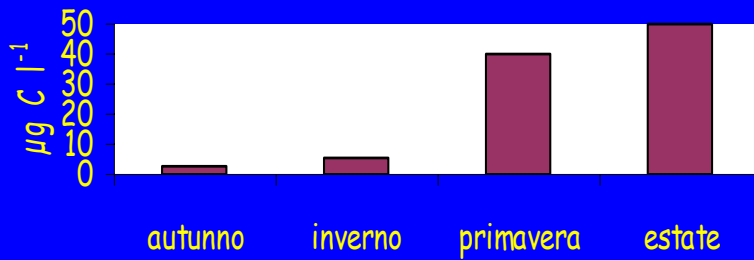
C nanoplancton autotrofo



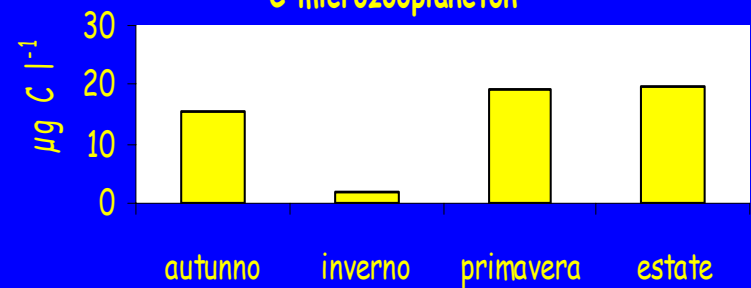
C nanoplancton eterotrofo



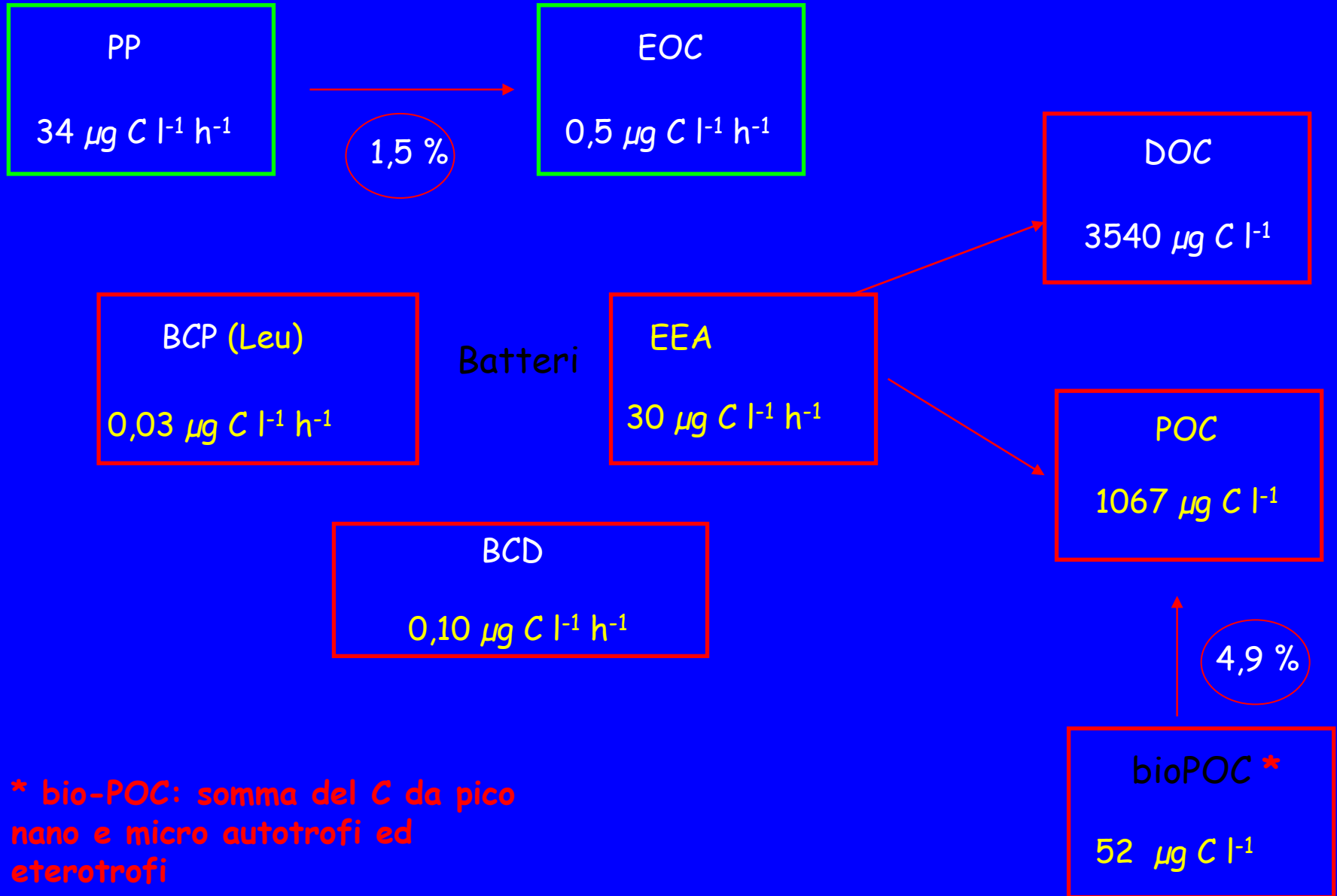
C microfitoplancton



C microzooplancton

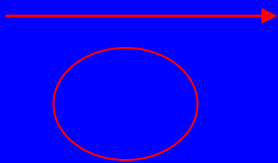


San Giuliano - autunno



San Giuliano - inverno

PP
 $0,01 \mu\text{g C l}^{-1} \text{h}^{-1}$



EOC
 $0 \mu\text{g C l}^{-1} \text{h}^{-1}$

DOC
 $2071 \mu\text{g C l}^{-1}$

BCP (Leu)
 $2,33 \mu\text{g C l}^{-1} \text{h}^{-1}$

Batteri

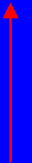
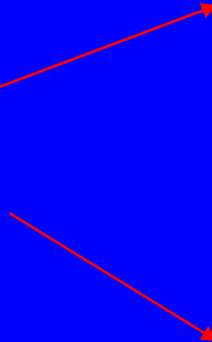
EEA
 $40 \mu\text{g C l}^{-1} \text{h}^{-1}$

POC
 $760 \mu\text{g C l}^{-1}$

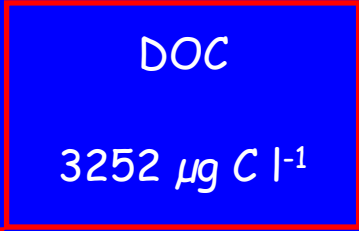
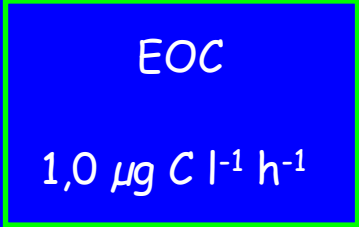
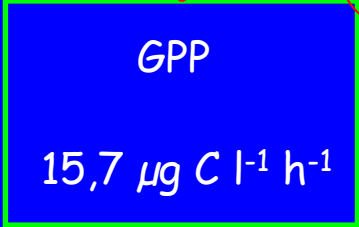
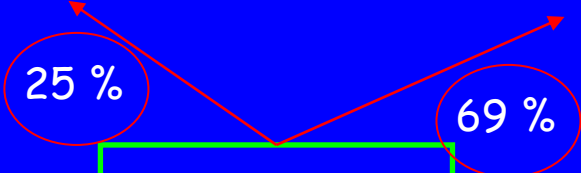
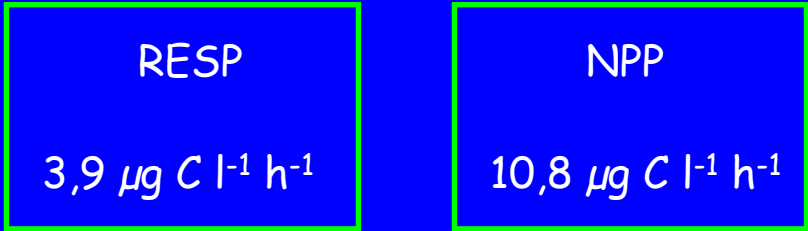
BCD
 $7,76 \mu\text{g C l}^{-1} \text{h}^{-1}$

10,6 %

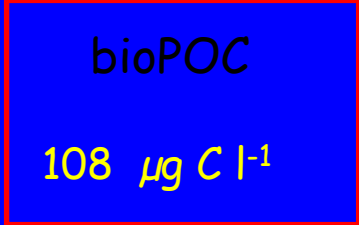
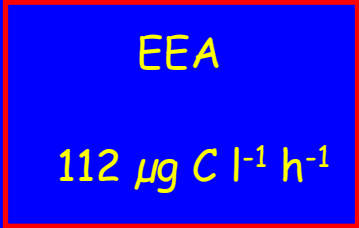
bioPOC
 $80 \mu\text{g C l}^{-1}$



San Giuliano - primavera



Batteri



San Giuliano - estate

RESP
 $23 \mu\text{g C l}^{-1} \text{h}^{-1}$

NPP
 $267 \mu\text{g C l}^{-1} \text{h}^{-1}$

8 %

GPP
 $293 \mu\text{g C l}^{-1} \text{h}^{-1}$

91 %

EOC
 $3,0 \mu\text{g C l}^{-1} \text{h}^{-1}$

1,0 %

DOC
 $3106 \mu\text{g C l}^{-1}$

BCP (Leu)
 $11,51 \mu\text{g C l}^{-1} \text{h}^{-1}$

Batteri

EEA
 $235 \mu\text{g C l}^{-1} \text{h}^{-1}$

POC
 $769 \mu\text{g C l}^{-1}$


BCD
 $38,37 \mu\text{g C l}^{-1} \text{h}^{-1}$

65 %

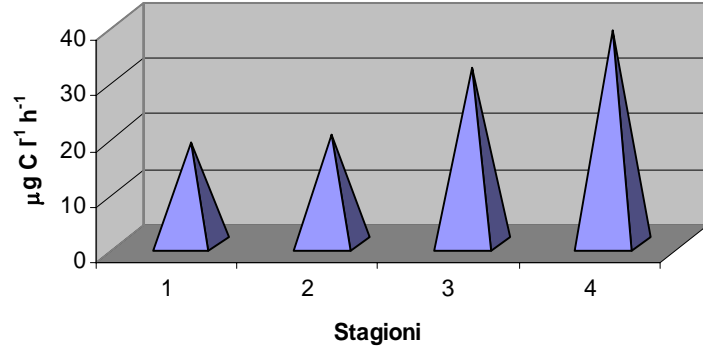
bioPOC
 $499 \mu\text{g C l}^{-1}$

Conclusioni

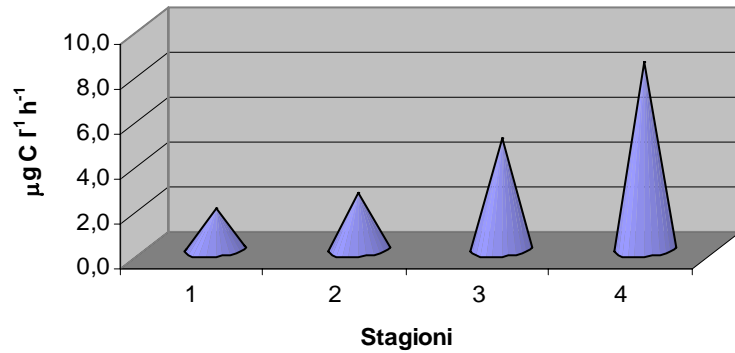
- La ripartizione del carbonio nel comparto planctonico evidenzia la dominanza delle classi dimensionali inferiori
- Lo sviluppo degli organismi di piccole dimensioni sostiene una rete trofica microbica ben strutturata e prevalente
- I rapporti tra biomassa e produzione nel comparto autotrofo sono molto levati e indicano un efficiente controllo da parte degli organismi eterotrofi
- La rete del pascolo sembra prevalere nel periodo estivo

- 
- An aerial photograph of a coastal city and harbor, likely Venice, showing the intricate network of canals and buildings. The image is overlaid with a semi-transparent blue filter and white text. The text consists of five bullet points, each starting with a yellow arrowhead symbol. The points discuss the concentrations of DOC and POC, the contribution of the planktonic compartment to POC, the impact of phytoplankton exudation on DOC, the potential for primary production to meet bacterial carbon requirements, and the role of bacterial enzymes in making carbon available from the DOC and POC pool.
- Le concentrazioni di DOC e POC sono sempre piuttosto elevate
 - Il comparto planctonico contribuisce in maniera consistente al POC specialmente in estate
 - L'essudazione fitoplanctonica incide scarsamente sulla concentrazione di DOC
 - La produzione primaria soddisfa *potenzialmente* la richiesta di carbonio dei batteri
 - L'attività degli enzimi prodotti dai batteri è in grado, comunque, di rendere disponibile il C necessario a soddisfare le loro esigenze metaboliche attingendolo dal pool di DOC e POC

Mobilizzazione di C

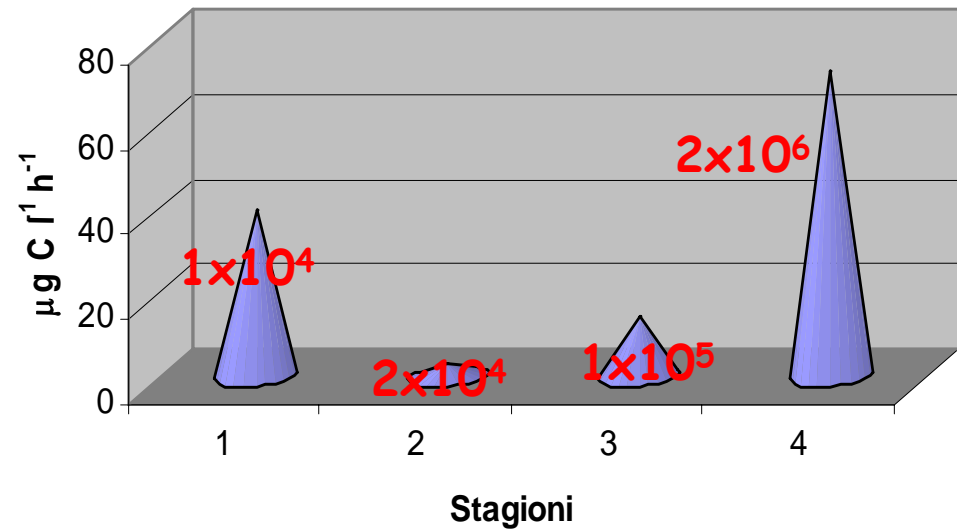


BCP - Leu

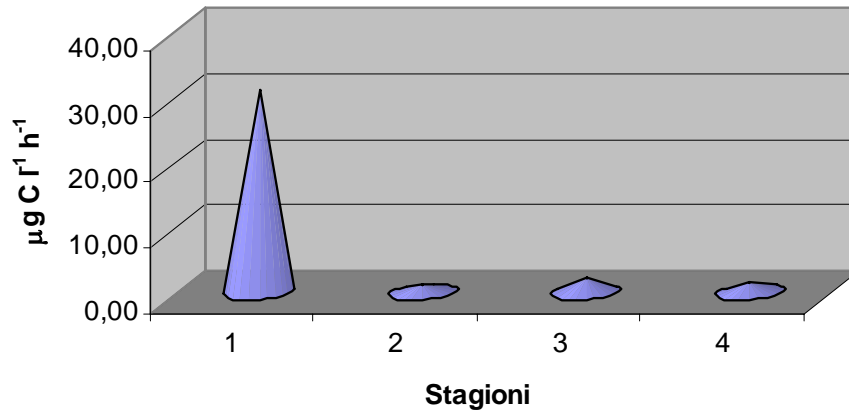


1: autunno 2: inverno 3: primavera 4: estate

PP



BCP - Tdr



BCP Tdr

Metabolismo batterico rivolto alla duplicazione cellulare

1: autunno 2: inverno 3: primavera 4: estate