

Fig. 3. Clearance rates of *Pseudodiaptomus forbesi* (top) and *Limnoithona tetraspina* (bottom) on different prey taxa in 6 experiments. Symbols represent the experiment; black denotes cells counted with the FlowCAM (FC) and grey shows cells counted on an inverted microscope (MIC). Points are means calculated by fitting a generalized linear model with Poisson error distribution to the experimental data; bars show the 95% confidence intervals. For taxa other than 'Diatoms 7–15 µm' and 'Flagellates 7–15 µm,' cells in each category are >15 µm on their longest axis

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Table 4. Abundance of microplankton taxa (cells ml⁻¹; mean \pm 95 % CI) in initial, control, and treatment bottles from all feeding experiments. Shaded counts from FlowCAM, unshaded counts from microscopy. Blank fields indicate taxa not present or not counted

Expt	Type	Centric diatoms		Pennate diatoms	Diatoms 7–15 μ m	Flagellates	Flagellates 7–15 μ m	Dino-flagellates	Ciliates
1	Initial	19.5 \pm 2.4	23.1 \pm 6.4	28.4 \pm 5.3		34.5 \pm 6.7			1.0 \pm 0.3
	Control	33.5 \pm 5.9	43.1 \pm 3.2	22.1 \pm 3.2		18.2 \pm 5.9			1.0 \pm 1.2
	<i>Pseudodiatomus forbesi</i>	4.5 \pm 4.6	6.9 \pm 4.6	15.7 \pm 6.0		6.1 \pm 2.2			0.2 \pm 0.1
2	Initial	2.3 \pm 0.7	9.1 \pm 8.1		15.0 \pm 8.4	112 \pm 26.5	261 \pm 55.1		1.5 \pm 0.5
	Control	3.5 \pm 0.6	6.6 \pm 2.2		17.7 \pm 3.2	27.9 \pm 13.3	316 \pm 56.5		2.8 \pm 0.4
	<i>P. forbesi</i>	1.0 \pm 0.9	1.4 \pm 1.5		14.9 \pm 2.9	13.2 \pm 4.2	225 \pm 54.5		1.5 \pm 0.7
	<i>Limnoithona tetraspina</i>	4.1 \pm 0.7	8.1 \pm 2.3		29.9 \pm 9.3	23.6 \pm 6.0	379 \pm 111		2.0 \pm 0.6
3	Initial	4.7 \pm 1.3	6.9 \pm 3.2		19.3 \pm 4.3	79.7 \pm 18.0	648 \pm 54.8		1.1 \pm 0.6
	Control	8.4 \pm 0.6	14.9 \pm 5.0		54.3 \pm 6.8	44.8 \pm 38.1	321 \pm 84.8		1.4 \pm 0.4
	<i>P. forbesi</i>	0.5 \pm 0.2	1.9 \pm 1.6		67.3 \pm 12.6	15.3 \pm 5.1	296 \pm 146		0.4 \pm 0.1
	<i>L. tetraspina</i>	10.4 \pm 1.2	17.2 \pm 4.4		79.6 \pm 8.2	33.3 \pm 9.3	463 \pm 56.7		1.1 \pm 0.6
4	Initial	1.7 \pm 0.1		6.4 \pm 1.1		61.3 \pm 19.5		0.6 \pm 0.1	1.1 \pm 0.3
	Control	1.2 \pm 0.5		5.9 \pm 0.9		39.8 \pm 9.4		0.6 \pm 0.1	2.1 \pm 0.3
	<i>P. forbesi</i>	0.3 \pm 0.2		2.5 \pm 0.8		22.0 \pm 2.2		0.3 \pm 0.1	0.8 \pm 0.5
5	Initial	0.6 \pm 0.3		0.7 \pm 0.3		65.1 \pm 11.2			1.4 \pm 0.3
	Control	0.7 \pm 0.3		0.2 \pm 0.03		44.1 \pm 21.7			1.7 \pm 0.3
	<i>P. forbesi</i>	0.1 \pm 0.1		0.1 \pm 0.1		15.9 \pm 5.8			0.5 \pm 0.2
6	Initial	1.1 \pm 0.4		1.9 \pm 0.9		66.7 \pm 24.7			0.9 \pm 0.4
	Control	1.1 \pm 0.2		2.9 \pm 1.3		50.3 \pm 3.8			1.6 \pm 0.8
	<i>P. forbesi</i>	0.3 \pm 0.1		1.0 \pm 0.8		33.9 \pm 7.1			0.5 \pm 0.3

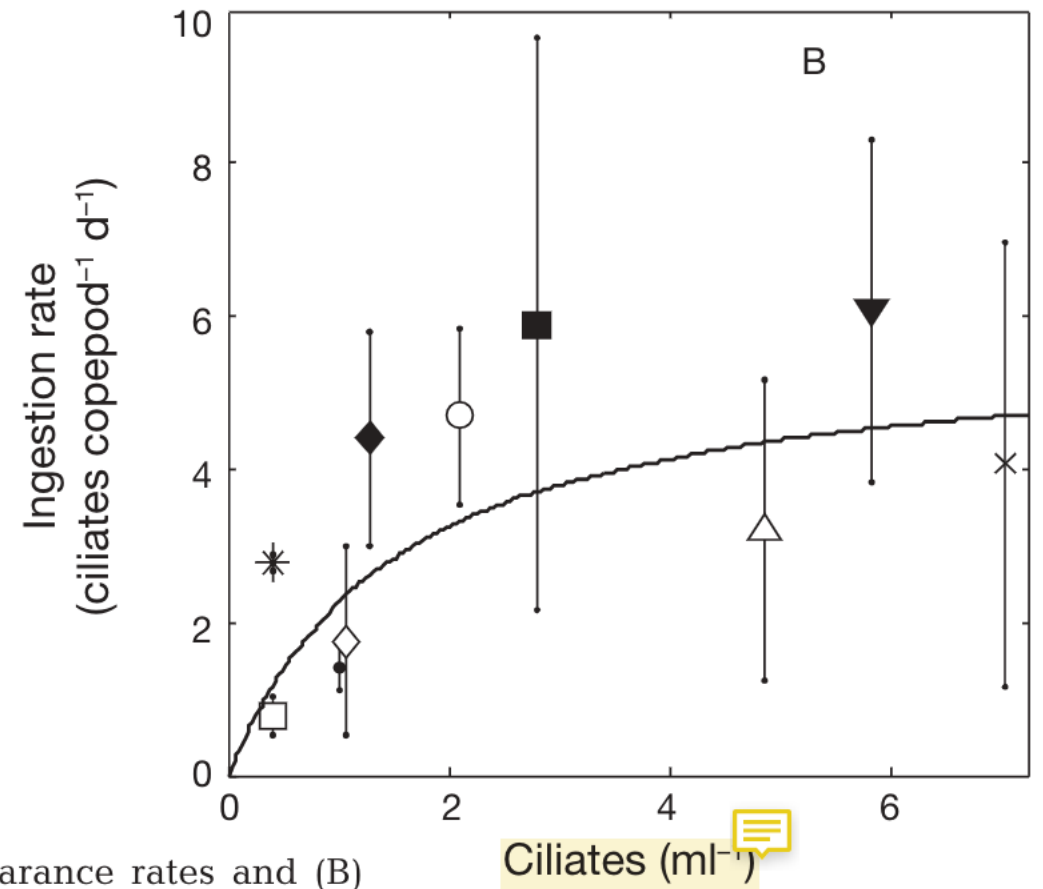
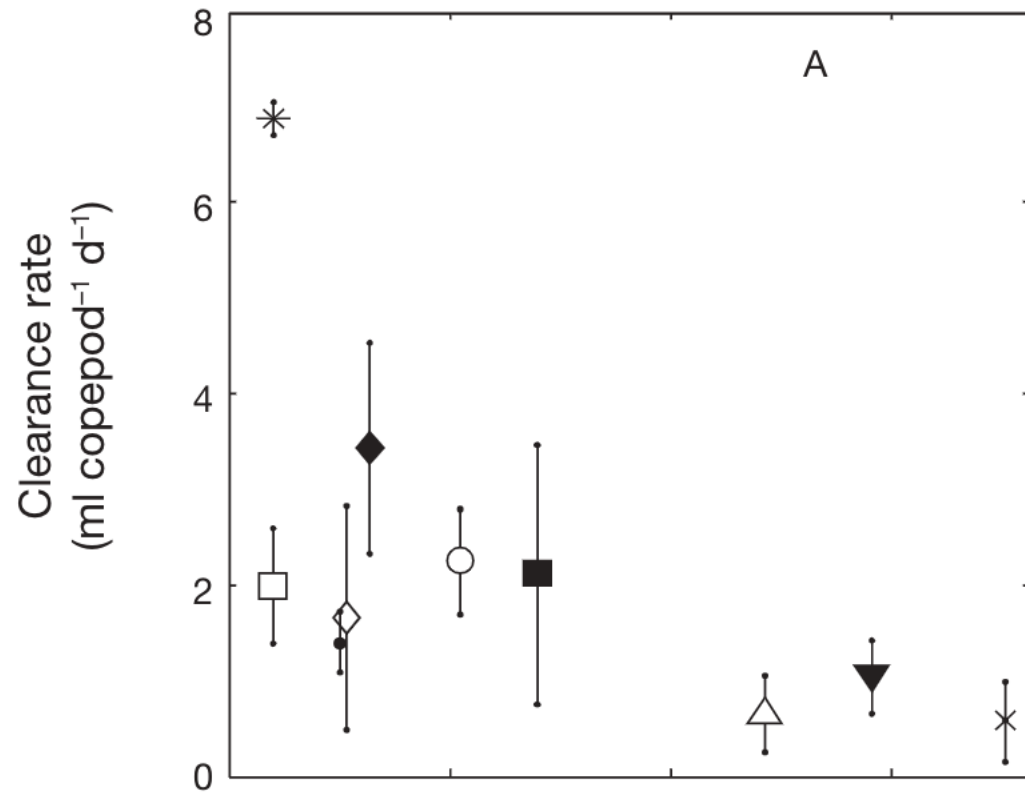


Fig. 6. *Limnoithona tetraspina*. (A) Clearance rates and (B) ingestion rates on naturally-occurring ciliates as a function of initial ciliate density. Bars show 95% confidence intervals. The curved line in (B) is a rectangular hyperbola fitted to the data, $(5.7 \times \text{Initial Prey Conc.}) / (1.5 + \text{Initial Prey Conc.})$. *Strombidium* A (■), *Strombidium* B (*), *Strombidium* C (□), *Strombidium* D (○), *Strombidium* E (▼), *Strombidium* F (×), *Mesodinium* A (◆), *Mesodinium* B (◇), *Tintinnid* B (•), Unidentified ciliate (△)

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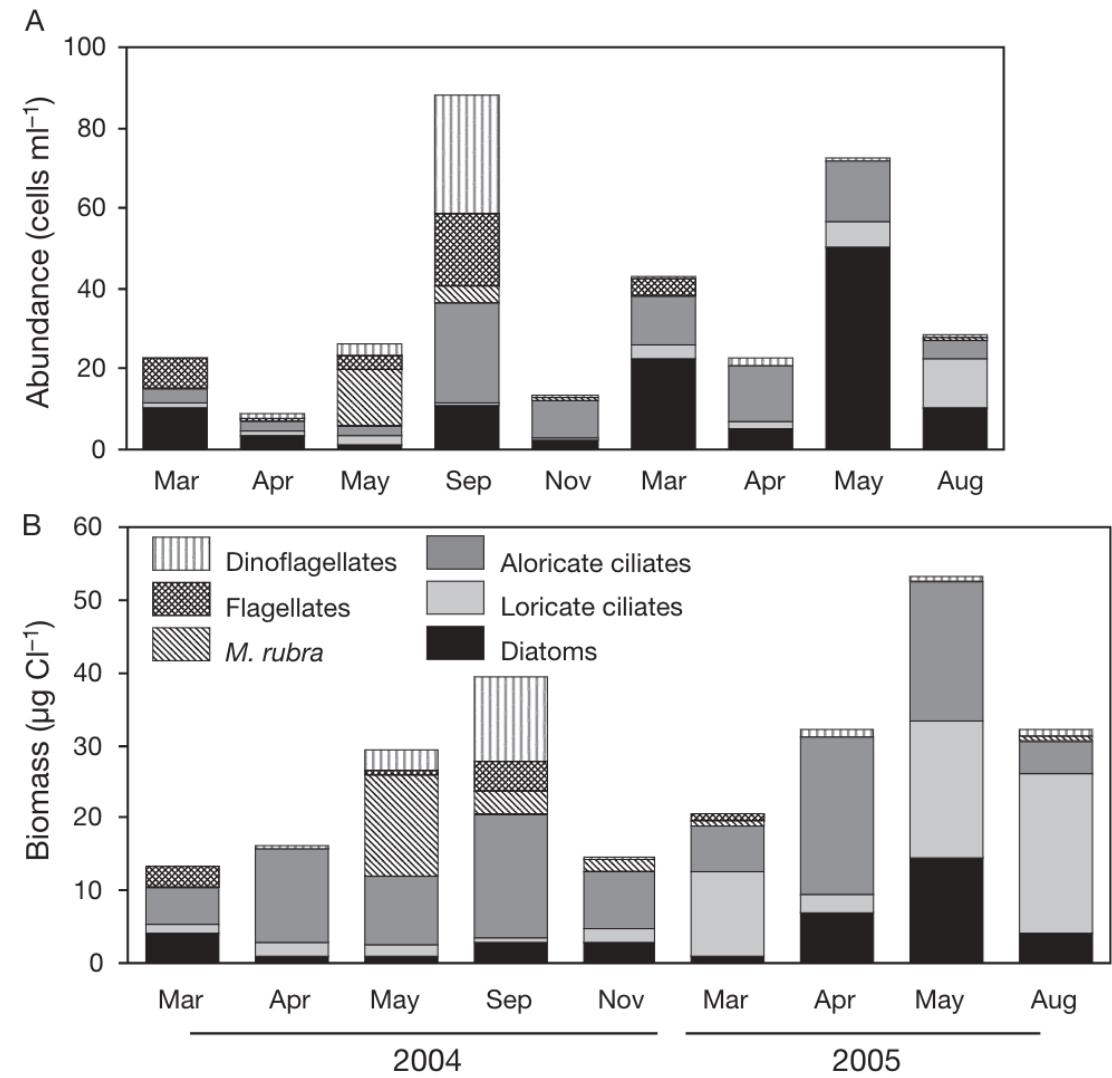


Fig. 5. Mean abundance (A) and carbon biomass (B) of microplankton (15 to 200 µm) prey categories available to predators during feeding experiments (*M. rubra* = *Myrionecta rubra*)

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Convert $\text{ml pred}^{-1} \text{h}^{-1}$ to d^{-1}
Multiply by 24:
Ex: Acartia April 2004, aloricate ciliates,
~ 2ml per hour = ~ 48 ml per day

Acartia April 2005, diatoms
~ 1.5 ml per hour = ~ 36ml per day

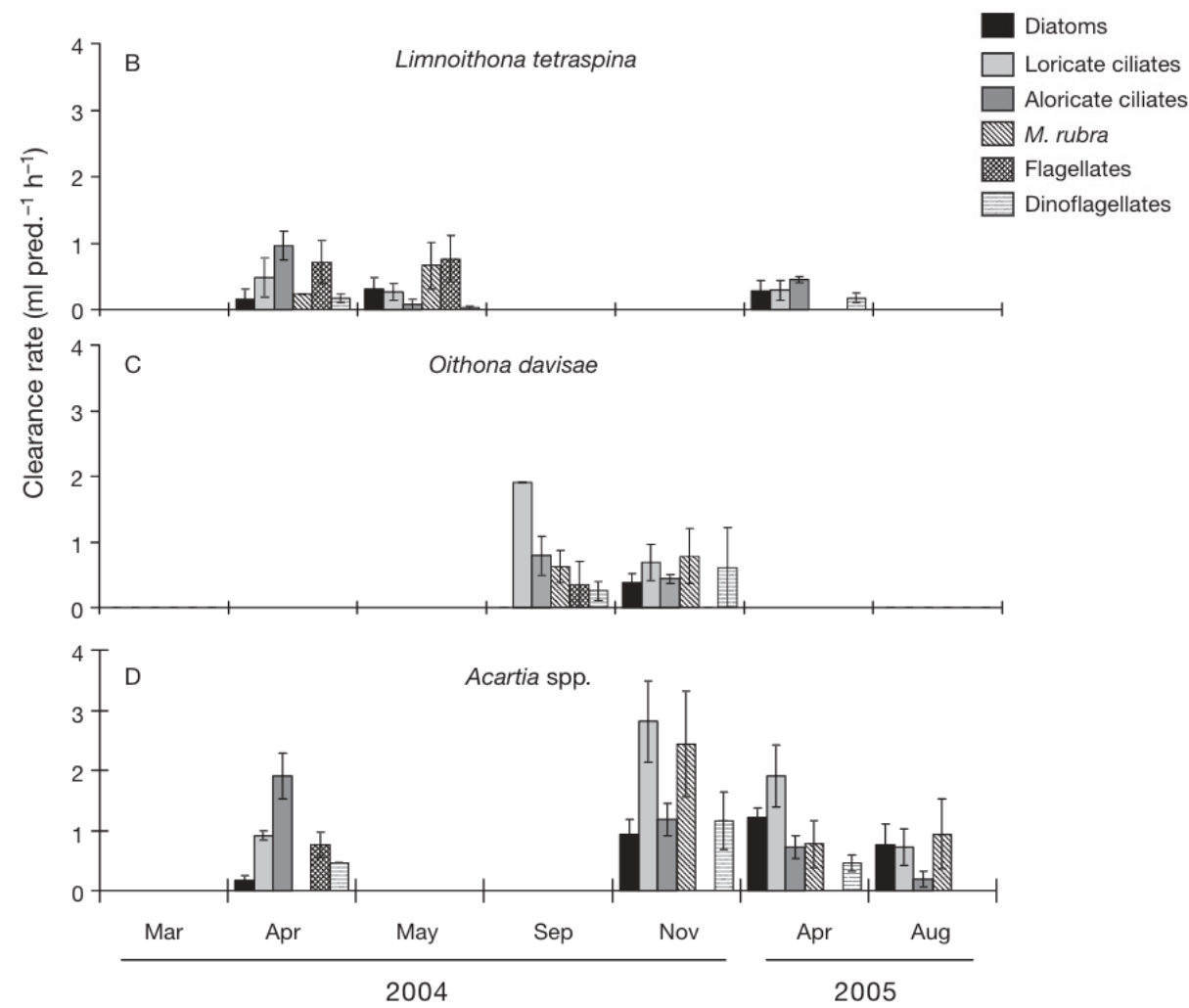


Fig. 6. Mean (\pm SE) mesozooplankton clearance rates on microplankton (15 to 200 μm). (A) *Daphnia* sp., (B) *Limnoithona tetraspina*, (C) *Oithona davisae*, (D) *Acartia* spp. (*M. rubra* = *Myrionecta rubra*). SE could not be calculated for loricata ciliates in (C)

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Convert $\text{ng C pred}^{-1} \text{h}^{-1}$ to $\mu\text{g C pred}^{-1} \text{d}^{-1}$

1 ng = .001 μg

1 day = 24 hours

Ex: Acartia April 2004, **aloricate ciliates**,

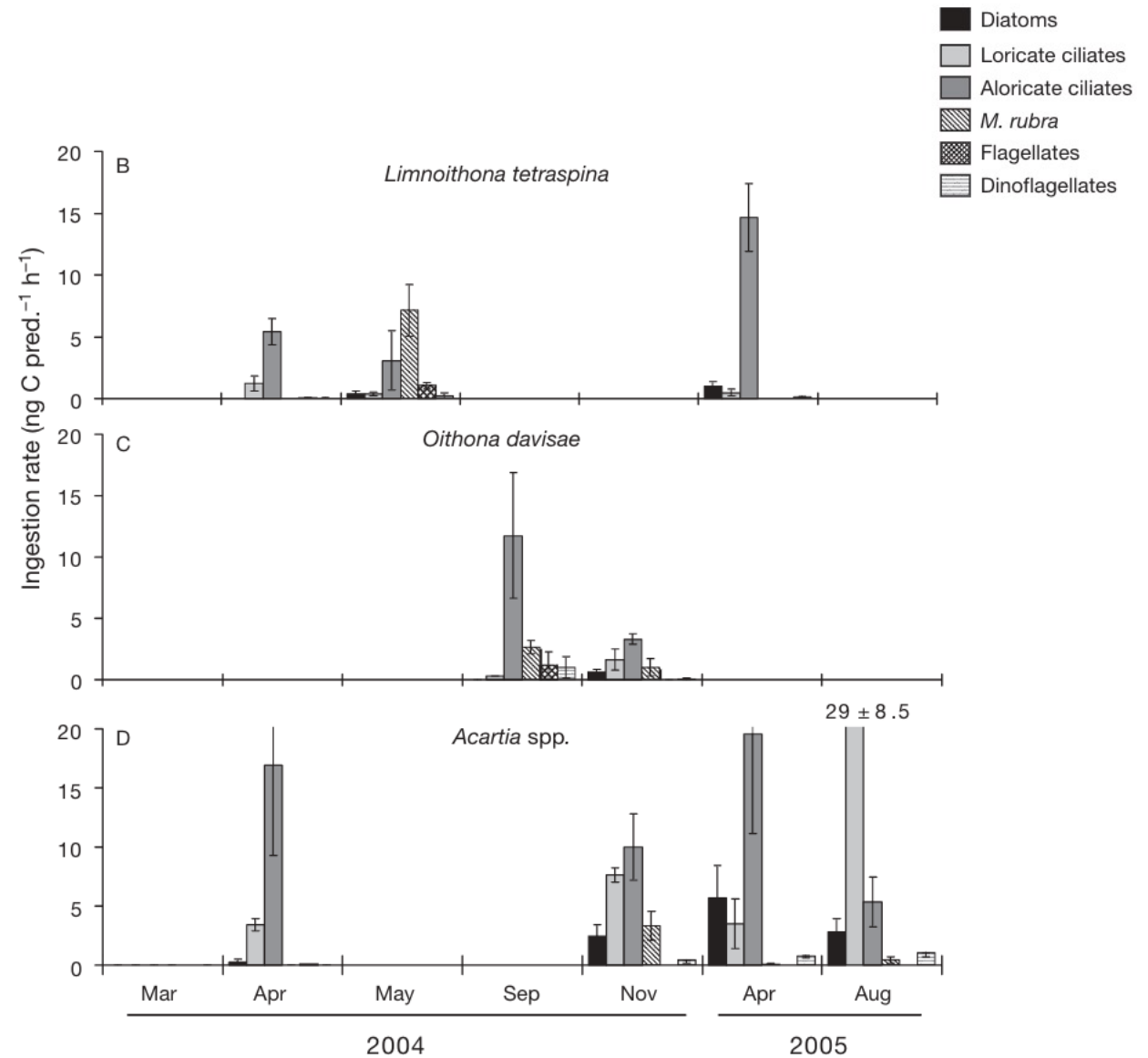
$\sim 17 \text{ ng C per per hour} = \sim .017 \mu\text{g C per hour}$

Multiply .017 by 24 = **$\sim .408 \mu\text{g C per day}$**

Acartia April 2005, **diatoms**

$\sim 5 \text{ ng C per per hour} = \sim .005 \mu\text{g C per hour}$

Multiply .005 by 24 = **$\sim .12 \mu\text{g C per day}$**



g. 7. Mean (\pm SE) mesozooplankton ingestion rates on microplankton (15 to 200 μm). (A) *Daphnia* sp., (B) *Limnoithona tetraspina*, (C) *Oithona davisae*, (D) *Acartia* spp. (*M. rubra* = *Myrionecta rubra*)

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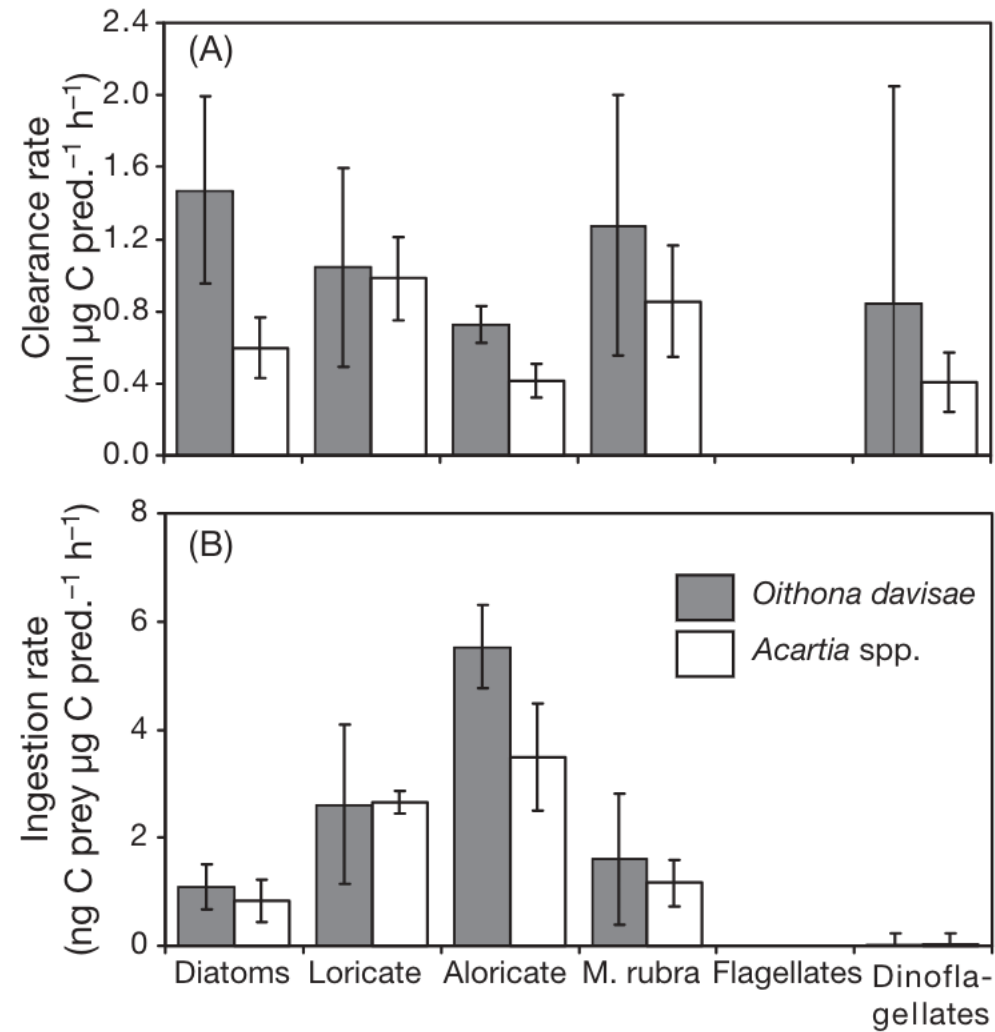


Fig. 8. Mean (\pm SE) weight-specific (A) clearance and (B) ingestion rates on microplankton (15 to 200 μm) for *Acartia* spp. and *Oithona davisae* in November 2004 (*M. rubra* = *Myrionecta rubra*)

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Table 3. **Copepod grazing** on different compartments of the plankton during incubation experiments (uncorrected) and after taking into account trophic cascade effects (corrected). Expt: experiment number. Treatment: type of copepod added in grazing treatments: small copepods (Small cop.), *Calanus simillimus* (*C. simil.*) and *Rhincalanus gigas* (*R. gigas*). N: number of copepod individuals in treatments. Total grazing by added copepods on nanophytoplankton (Nphyt), **microphytoplankton** (Mphyt), nanozooplankton (Nzoo) and **microzooplankton** (Mzoo) for the duration of the incubation. Tot. C: individual copepod total daily carbon ingestion (for the uncorrected estimates of Tot. C, negative grazing values were excluded from calculation). Ing. C: individual copepod daily carbon ingestion in % body carbon (% BC)

Expt	Treatment	N	Uncorrected						Corrected					
			Nphyt ($\mu\text{g C}$)	Mphyt ($\mu\text{g C}$)	Nzoo ($\mu\text{g C}$)	Mzoo ($\mu\text{g C}$)	Tot.C ($\mu\text{g C d}^{-1}$ ind. ⁻¹)	Ing. C (% BC)	Nphyt ($\mu\text{g C}$)	Mphyt ($\mu\text{g C}$)	Nzoo ($\mu\text{g C}$)	Mzoo ($\mu\text{g C}$)	Tot. C ($\mu\text{g C d}^{-1}$ ind. ⁻¹)	Ing. C (% BC)
1a	Small cop.	10	0.14	-0.62	0.29	0.34	0.08	2.7	0.19	0.00	0.36	0.40	0.10	3.5
4	Small cop.	20	0.08	0.18	0.43	2.09	0.08	2.9	0.16	0.30	0.59	2.49	0.10	3.7
7a	Small cop.	15	0.48	1.28	0.12	1.42	0.16	5.5	0.71	1.61	0.24	1.66	0.20	7.0
2	<i>C. simil.</i>	5	-0.16	3.90	-0.13	2.21	1.05	2.3	0.18	4.74	0.07	2.53	1.29	2.9
5	<i>C. simil.</i>	5	-0.78	7.25	-0.03	3.58	1.44	3.2	0.00	8.92	0.49	3.86	1.77	3.9
7b	<i>C. simi.</i>	5	-1.13	5.90	-1.44	1.76	1.08	2.4	0.00	7.06	0.00	1.97	1.29	2.8
1b	<i>R. gigas</i>	5	-1.62	-0.90	-1.45	1.90	0.38	0.15	0.00	0.00	0.00	2.86	0.45	0.18
3	<i>R. gigas</i>	4	-2.55	-0.04	-1.01	2.54	0.35	0.14	0.00	0.27	0.00	3.04	0.46	0.19
6	<i>R. gigas</i>	4	-2.18	4.56	-2.04	5.28	1.97	0.79	0.00	5.79	0.00	6.15	2.39	0.96