

Supplementary material

Figure S1. Variation in SE as a proportion of the mean with sample size (No. of the specimen) to determine the minimum sample size for mass-specific pumping rate in a particular session.

Figure S2. Pumping rate (PR, mL min⁻¹) vs. Biomass (AFDW, g) on multi-osculated specimens.

Figure S1

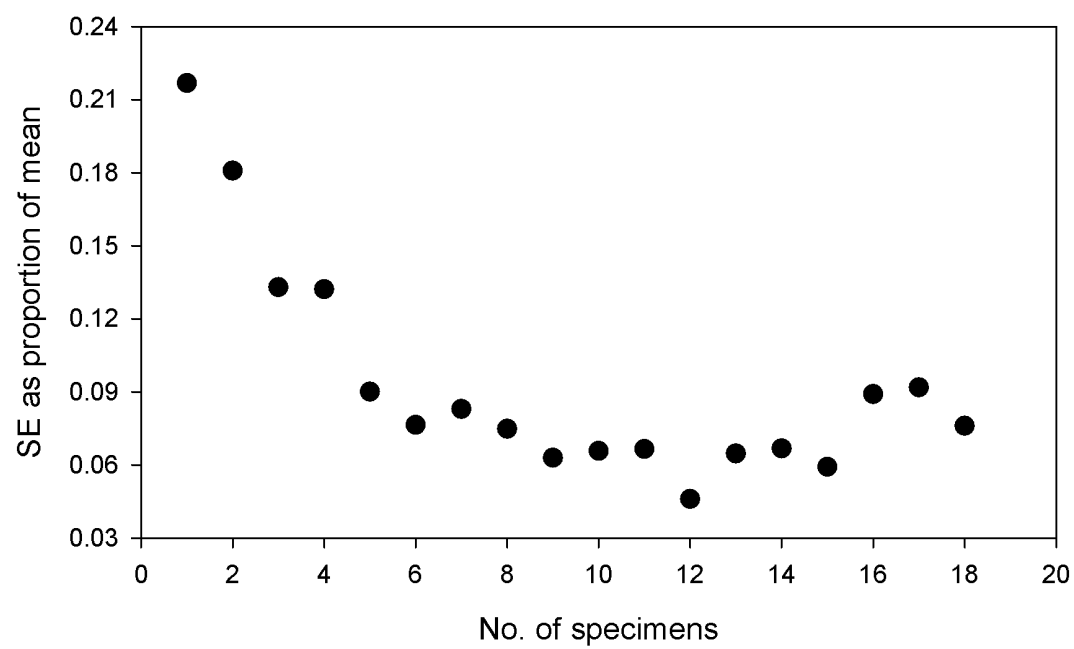


Figure S2

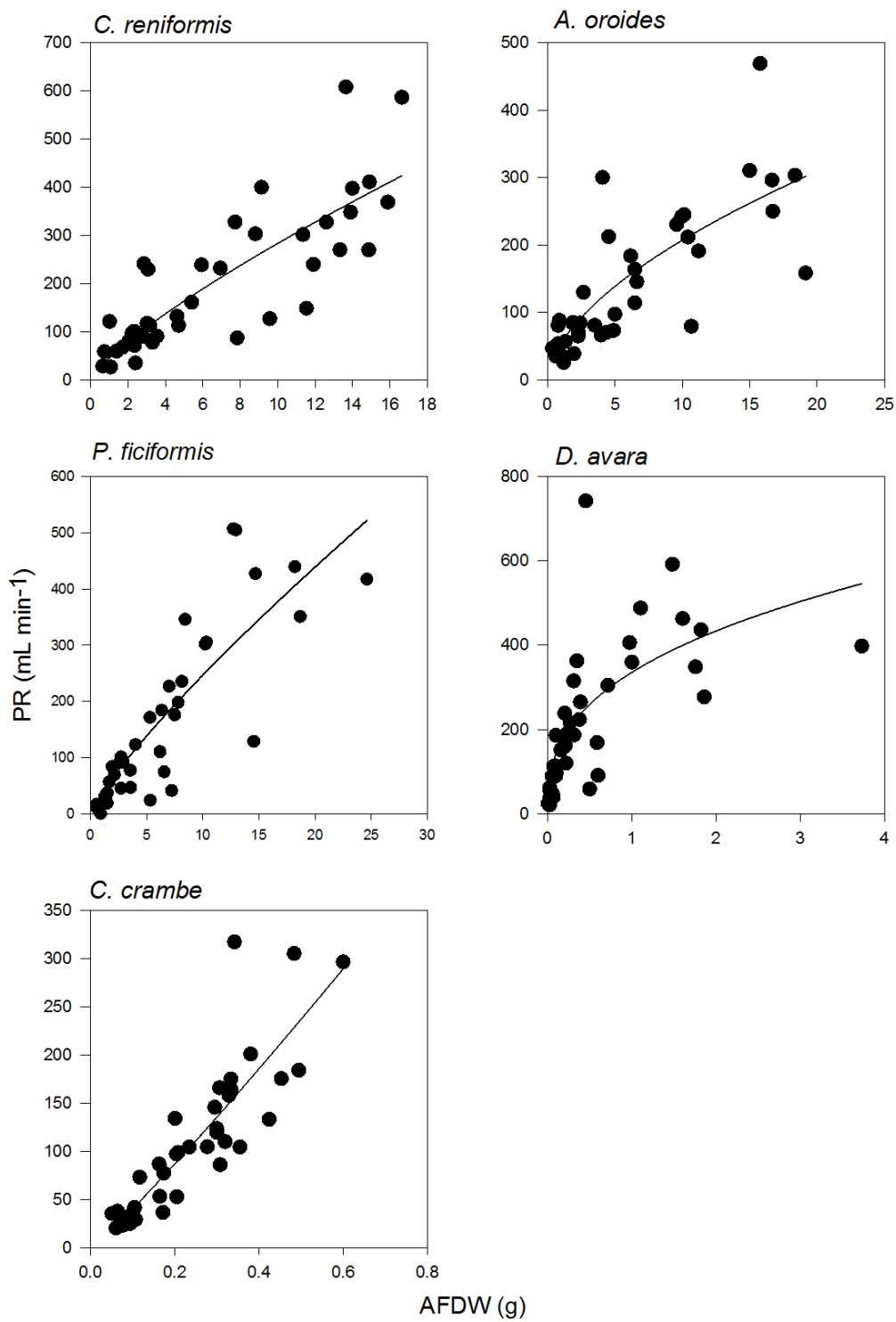


Table S1. Comparison between volume-specific pumping rate (PR_v , $\text{mL min}^{-1} (\text{cm sponge})^{-3}$) measured using the dye front speed (DFS) and dye speed (DS) method for the same specimens at the same time. Data are expressed as mean \pm 95% CI. n number of sampled specimens; p values are for a paired t-test. The statistical power to detect a 20% difference from the DFS method was calculated for each species using the observed variability of the paired differences and $\alpha=0.05$.

Specie	n	DFS	DS	p -value	Statistical power	Deviation of DS from DFS
<i>C. reniformis</i>	19	4.46 \pm 0.97	4.36 \pm 0.97	0.828	100%	-3%
<i>P. ficiformis</i>	20	2.41 \pm 0.97	2.14 \pm 1.20	0.488	79%	-11%
<i>D. avara</i>	21	14.42 \pm 4.32	13.60 \pm 3.48	0.813	90%	-6%
<i>A. oroides</i>	22	2.48 \pm 0.97	2.01 \pm 0.82	0.413	96%	-19%
<i>C. crambe</i>	17	25.13 \pm 10.56	17.08 \pm 7.60	0.107	79%	-32%

Table S2. Average volume-specific pumping rate (PR_v, mL min⁻¹ (cm sponge)⁻³) normalized by sponge volume measured *in situ* during each sampling session. Data expressed as mean ± 95% CI. *n*, number of sampled specimens for each sampling session.

Sampling date	Temp (°C)	<i>A. oroides</i>			<i>C. reniformis</i>			<i>P. ficiformis</i>			<i>D. avara</i>			<i>C. crambe</i>		
		n	PR _v	95%CI	n	PR _v	95%CI	n	PR _v	95%CI	n	PR _v	95%CI	n	PR _v	95%CI
Jul-12	22	7	2.2	0.6	14	2.8	0.5	9	2.7	1.3	7	3.3	2.2	8	9.2	2.2
Oct-12	19	16	2.3	0.8	56	4.2	0.5	7	1.2	0.5	15	5.8	1.5	18	13.1	2.8
Nov-12	16	15	2.1	0.6	17	3.3	0.5	15	2.1	0.5	11	9.8	5.1	15	15.8	3.0
Jan-13	13	13	1.9	0.5	24	4.0	1.2	15	2.0	0.5	11	7.4	4.1	22	18.5	3.7
Apr-13	13	16	1.7	0.8	16	2.9	0.9	11	2.1	1.2	14	8.0	2.9	16	12.4	3.3
May-13	15	12	1.5	0.9	17	2.1	0.4	14	1.5	0.6	13	9.1	4.0	16	19.6	4.7
Jul-13	21	19	1.3	0.4	15	3.0	1.1	18	1.5	0.3	15	9.0	2.9	21	15.0	3.3
Oct-13	19	16	2.7	1.0	15	4.6	1.6	15	1.2	0.5	14	10.9	3.8	17	15.0	5.5
Jan-14	13	14	2.6	1.0	15	3.7	1.3	15	1.6	0.5	8	9.6	3.9	13	26.0	13.4
Apr-14	15	16	1.5	0.4	17	4.0	1.1	13	2.6	1.5	16	10.1	4.5	18	15.5	5.8
Jul-14	22	14	3.0	0.9	15	4.1	0.9	15	2.9	0.7	20	10.0	2.6	17	21.7	5.7
Average	17.1	14	2.1	0.7	20	3.5	0.9	13	2.0	0.7	13	8.5	3.4	16	16.5	4.8
95%CI	2	-	0.3	-	-	0.4	-	-	0.3	-	-	1.3	-	-	2.7	-