

Supporting informations

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Ocean acidification reduces spine mechanical strength in euechinoid but not in
cidaroid sea urchins

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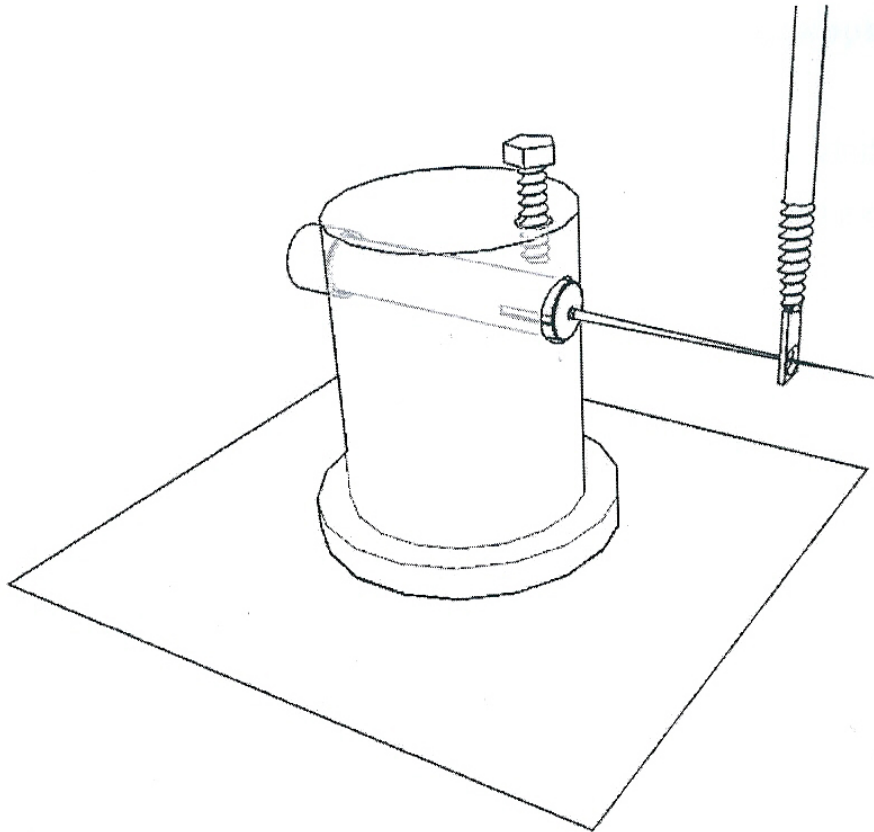
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Species	Tested variable	Independent variable	Sum of squares	Nu mer ator df	Denom inator df	Mean square	F-ratio	p-value
<i>E.tribuloides</i> Primary spines	F _{max}	PH\$	43.183	2	6	21.592	0.266	0.775
		URCHIN\$(PH\$)	487.584	6	18	81.264	6.944	0.001
	E	ERROR	210.644		18	11.702		
		PH\$	18.000	2	6	9	1.286	0.343
	I ₂	ERROR	42.000	6	7			
		PH\$	33.649	2	6	16.824	3.221	0.112
		ERROR	31.335		6	5.223		
<i>E.tribuloides</i> Secondary spines	Corrosion	PH\$	8433.421	2	6	4216.711	57.879	0.000
		ERROR	437.121		6	72.853		
	F _{max}	PH\$	4.179	2	6	2.089	1.452	0.306
		AQUA\$(PH\$)	8.632	6	18	1.439	1.094	0.403
	E	URCHIN\$(AQUA\$(PH\$))	23.668	18	54	1.315	2.618	0.003
		ERROR	27.126		54	0.502		
	I ₂	PH\$	5.678E+019	2	6	2.839E+019	3.477	0.099
		URCHIN\$(PH\$)	4.899E+019	6	18	8.165E+018	0.273	0.943
		ERROR	5.392E+020		18	2.996E+019		
		PH\$	12.573	2	6	6.287	1.011	0.418
		URCHIN\$(PH\$)	37.297	6	18	6.216	0.987	0.463
		ERROR	113.353		18	6.297		
<i>T.ventricosus</i> Primary spines	Corrosion	PH\$	6492.104	2	6	3246.052	61.319	0.000
		ERROR	317.625		6	52.938		
	F _{max}	PH\$	0.797	2	6	0.398	10,148	0.012
		AQUA\$(PH\$)	0.236	6	18	0.039	0.314	0.921
	E	URCHIN\$(AQUA\$(PH\$))	2.247	18	54	0.125	3.458	0.000
		ERROR	1.950		54	0.036		
	I ₂	PH\$	1.782E+020	2	6	8.910E+019	1.486	0.299
		URCHIN\$(PH\$)	3.597E+020	6	18	5.995E+019	0.322	0.943
		ERROR	3.346E+020		18	1.859E+020		
		PH\$	1.139	2	6	0.570	2.458	0.166
		OURCHIN\$(PH\$)	1.391	6	18	0.232	0.788	0.591
		ERROR	5.292		18	0.294		
<i>T.ventricosus</i> Secondary spines	Corrosion	PH\$	6539.571	2	6	3269.786	61.759	0.000
		ERROR	317.664		6	52.944		
	F _{max}	PH\$	0.194	2	6	0.097	21.701	0.002
		AQUA\$(PH\$)	0.027	6	18	0.004	0.262	0.948
	E	URCHIN\$(AQUA\$(PH\$))	0.306	18	54	0.017	4.493	0.000
		ERROR	0.205		54	0.004		
	I ₂	PH\$	1.076E+020	2	6	5.381E+019	0.502	0.629
		URCHIN\$(PH\$)	6.437E+020	6	18	1.073E+020	0.770	0.603
		ERROR	2.507E+021		18	1.393E+020		
		PH\$	1.262	2	6	0.631	0.523	0.618
		URCHIN\$(PH\$)	7.243	6	18	1.207	0.427	0.851
		ERROR	50.837		18	2.824		

33 Table S1-S1: Statistical analysis data for all variables tested for primary spines
34 and secondary spines of *Eucidaris tribuloides* and *Tripneustes ventricosus*: PH\$:
35 pH of seawater; URCHIN\$: sea urchin individual; AQUA\$: tank.

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41 Figure S1-S1: Position of the spine in the force testing stand (credit:
42 Gerald Mannaerts).

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