Marine and Freshwater Research, 2018, **69**, 1397–1407
https://doi.org/10.1071/MF17080

Supplementary material

Comparison of microbial processing of *Brachiaria brizantha*, a C_4 invasive species and a rainforest species in tropical streams of the Atlantic Forest of south-eastern Brazil

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Table S1. Values of degrees of freedom (d.f.), sum of squares (SS), *F* statistics (*F*) and probability (*P*) generated by general linear models that were used to test differences between chemical parameters of streams during the summer (*n* = 7) and winter (*n* = 7) experiments

DIC, dissolved inorganic carbon; DOC, dissolved organic carbon; N, nitrogen

Parameter	Summer				Winter			
	d.f.	SS	*F*	*P*	d.f.	SS	*F*	*P*
Electrical conductivity								
Intercept	1	5462.98	3535.75	0.00	1	6050.28	1814.08	0.00
Stream	2	146.71	47.48	0.00	2	129.66	19.44	0.00
Error	16	18.54			17	43.36		
Total	19				20			
pH								
Intercept	1	569.91	2257.12	0.00	1	634.25	3504.00	0.00
Stream	2	0.05	0.09	0.91	2	0.23	0.63	0.55
Error	17	3.03			17	2.35		
Total	20				20			
O_2 (mg L^{-1})								
Intercept	1	898.32	1207.03	0.00	1	1429.80	596.04	0.00
Stream	2	0.64	0.43	0.66	2	0.74	0.15	0.86
Error	13	8.93			16	31.18		
Total	16				19			
O_2 (%)								
Intercept	1	112121.88	54854.52	0.00	1	142959.60	900.32	0.00
Stream	2	19.60	4.79	0.03	2	2.83	0.01	0.99
Error	13	24.53			16	2064.25		
Total	16				19			
NO_3^-								
Intercept	1	0.29	205.83	0.00	1	0.19	2678.91	0.00
Stream	2	0.00	0.66	0.54	2	0.01	41.93	0.00
Error	17	0.02			16	0.00		
Total	20				19			
Organic N								
Intercept	1	1.18	22.16	0.00	1	1.05	105.57	0.00
Stream	2	0.10	0.90	0.43	2	0.01	0.49	0.62
Error	17	0.64			16	0.13		
Total	20				19			
Total N								
Intercept	1	3.53	63.68	0.00	1	1.83	339.41	0.00
Stream	2	0.11	0.95	0.41	2	0.01	1.07	0.37
Error	17	0.67			16	0.07		
Total	20				19			
DOC								
Intercept	1	152.03	9.60	0.01	1	183.45	70.47	0.00
Stream	2	33.78	1.07	0.37	2	8.00	1.54	0.25
Error	17	190.02			16	33.84		
Total	20				19			
DIC								
Intercept	1	353.43	375.65	0.00	1	371.64	1001.54	0.00
Stream	2	12.00	6.37	0.01	2	9.24	12.45	0.00
Error	17	11.29			16	4.82		
Total	20				19			

Table S2. Values of degrees of freedom (d.f.), sum of squares (SS), *F* statistics (*F*) and probability (*P*) generated by general linear models that were used to test differences between species initial concentrations of carbon, nitrogen and the C : N ratio in the summer and winter litter-bag experiments

'Species' refers to plants species used in the litter bag expriments: *Brachiaria brizantha* and *Mollinedia schottiana*

Parameter	d.f.	SS	*F*	*P*
Summer				
Carbon				
Intercept	1	11650917.08	140649.4	0.00
Species	1	30327.90	366.1	0.00
Error	58	4804.52		
Nitrogen				
Intercept	1	37097.51	8065.272	0.00
Species	1	5212.97	1133.339	0.00
Error	58	266.78		
C : N				
Intercept	1	24969.06	5450.915	0.00
Species	1	2746.20	599.514	0.00
Error	58	265.68		
Winter				
Carbon				
Intercept	1	11702929.59	454397.11	0.00
Species	1	20660.76	802.21	0.00
Error	58	1493.78		
Nitrogen				
Intercept	1	37327.65	8052.30	0.00
Species	1	3260.11	703.27	0.00
Error	58	268.87		
C : N				
Intercept	1	22543.35	3896.045	0.00
Species	1	1554.00	268.570	0.00
Error	58	335.60		

Table S3. Values of degrees of freedom (d.f.), sum of squares (SS), *F* statistics (F) and probability (*P*) generated by general linear models that were used to test differences between species initial concentrations of lignin, cellulose and fibres in the summer and winter litter-bag experiments

'Species' refers to plants species used in the litter bag expriments: *Brachiaria brizantha* and *Mollinedia schottiana*

Parameter	d.f.	SS	MS	*F*	*P*
Summer					
Lignin					
Intercept	1	15882.07	15882.07	2833.451	0.00
Species	1	5008.25	5008.25	893.501	0.00
Error	43	241.02	5.61		
Cellulose					
Intercept	1	33255.61	33255.61	3670.566	0.000000
Species	1	122.55	122.55	13.526	0.000650
Error	43	389.58	9.06		
Fibre					
Intercept	1	101428.0	101428.0	18839.44	0.00
Species	1	2593.5	2593.5	481.72	0.00
Error	43	231.5	5.4		
Winter					
Lignin					
Intercept	1	12511.34	12511.34	2105.890	0.00
Species	1	4168.72	4168.72	701.672	0.00
Error	28	166.35	5.94		
Cellulose					
Intercept	1	25598.24	25598.24	3335.87	0.00
Species	1	124.47	124.47	16.22	0.00
Error	28	214.86	7.67		
Fibres					
Intercept	1	78594.72	78594.72	9448.18	0.00
Species	1	1874.57	1874.57	225.35	0.00
Error	28	232.92	8.32		

https://doi.org/10.1071/MF17080

Table S4. Values of degrees of freedom (d.f.), sum of squares (SS), *F* statistics (*F*) and probability (*P*) generated by general linear models that were used to test differences in remaining mass during the summer and winter litter-bag experiments

'Time' refers to period of time expressed in days after the beginning of the decomposition experiments. 'Species' refers to plants species used in the litter-bag experiments, namely, *Brachiaria brizantha* and *Mollinedia schottiana*

Parameter	d.f.	SS	MS	*F*	*P*
Season × Time	1	0.40	0.40	27.10	<0.01
Species × Time	1	0.83	0.83	56.27	<0.01
Season × Species ×Time	1	0.28	0.28	19.31	<0.01
Error	49	0.72	0.01		

Table S5. Values of degrees of freedom (d.f.), sum of squares (SS), *F* statistics (*F*) and probability (*P*) generated by interactions of general linear models used to test differences between relative carbon and nitrogen concentrations and the C : N ratio, and relative lignin, cellulose and fibre concentration differences in change-over time between species and between seasons

'Time' refers to period of time expressed in days after the beginning of the decomposition experiments. 'Species' refers to plant species used in the litter bag, namely, *Brachiaria brizantha* and *Mollinedia schottiana*

Parameter	d.f.	SS	MS	*F*	*P*
Carbon					
Season × Time	1	155.25	155.25	3.86	0.06
Species × Time	1	2611.45	2611.45	65.00	<0.01
Season × Species × Time	1	2.89	2.89	0.07	0.79
Error	52	2089.17	40.18		
Nitrogen					
Season × Time	1	0.10	0.10	0.00	0.97
Species × Time	1	1546.82	1546.82	15.54	<0.01
Season × Species × Time	1	210.37	210.37	2.11	0.15
Error	52	5175.80	99.53		
C : N					
Season × Time	1	86.44	86.44	0.37	0.54
Species × Time	1	19496.13	19496.13	83.98	<0.01
Season × Species × Time	1	358.88	358.88	1.55	0.22
Error	52	12072.47	232.16		
Lignin					
Season × Time	1	131.51	131.51	0.12	0.73
Species × Time	1	27316.36	27316.36	25.42	<0.01
Season × Species × Time	1	3129.42	3129.42	2.91	0.09
Error	123	132169.84	1074.55		
Cellulose					
Season × Time	1	2975.81	2975.81	9.64	<0.01
Species × Time	1	3961.64	3961.64	12.83	<0.01
Season × Species × Time	1	834.65	834.65	2.70	0.10
Error	123	37983.07	308.81		
Fibre					
Season × Time	1	237.07	237.07	1.94	0.17
Species × Time	1	609.46	609.46	4.98	0.03
Season × Species × Time	1	16.86	16.86	0.14	0.71
Error	124	15182.93	122.44		