

## Supplementary Material

**Table S1.** Non-additive effects of host diversity on *Bd* infection loads. Mean net effect, complementarity and selection across diverse assemblages, excluding mixtures that experienced mortality (N=6).

Factor	Mean	Upper 95% CI	Lower 95% CI
Net effect of host diversity	-0.863*	-0.096	-1.630
Complementarity	-0.839*	-0.050	-1.628
Selection	-0.024	0.142	-0.191

\*  $P < 0.05$ ;  $N=19$ .

**Table S2.** Selection and complementarity across the 25 multi-host assemblages. Species acronyms are: *B. pitanga* – PIT, *I. parva* – PAR, *D. minutus* – MIN, *H. bandeirantes* – BAN, *S. hayii* – HAY, *H. phyllodes* – PHY, and *P. cuvieri* – CUV.

Selection	Complementarity	PIT	PAR	MIN	BAN	HAY	PHY	CUV
0.714	-1.869	X		X		X		X
0.525	-1.142	X		X		X	X	
0.440	-1.246	X	X				X	X
0.413	-3.401			X		X	X	X
0.153	1.573	X		X	X	X		
0.152	-3.504	X	X	X		X		
0.150	1.885	X	X		X	X		
0.135	-1.252	X	X	X				X
0.116	-0.718		X	X	X	X		
0.091	-0.712	X	X	X			X	
0.059	-3.081	X	X	X	X			
0.050	0.902	X			X		X	X
0.003	-0.116	X				X	X	X
-0.085	-0.566			X	X		X	X
-0.127	-3.366	X			X	X		X
-0.149	-2.287	X		X	X		X	
-0.154	0.387		X		X		X	X
-0.181	2.837		X		X	X	X	
-0.236	1.009		X			X	X	X
-0.238	-1.033				X	X	X	X
-0.252	-0.022			X	X	X		X
-0.254	-0.539			X	X	X	X	
-0.325	-0.174		X	X		X	X	
-0.489	-0.850	X		X	X			X
-0.699	0.081		X	X			X	X