

Supplementary Table 1: Total number of replicate samples for each of the ladybird species, *B. bassiana* infection, and aphid density treatments. While we aimed to achieve five replicates per treatment combination, ladybird mortality reduced this number. Overall, this resulted in treatment combinations being replicated between four and six times.

(a) Ladybird larvae

Species	<i>B. bassiana</i>	Prey density							
		1	2	4	8	16	32	64	128
<i>A. bipunctata</i>	-	5	5	5	5	5	5	6	5
	+	5	5	5	5	5	5	5	4
<i>H. axyridis</i>	-	4	5	5	5	5	6	5	5
	+	5	4	5	5	5	5	5	5

(b) Ladybird adults

[illegible]

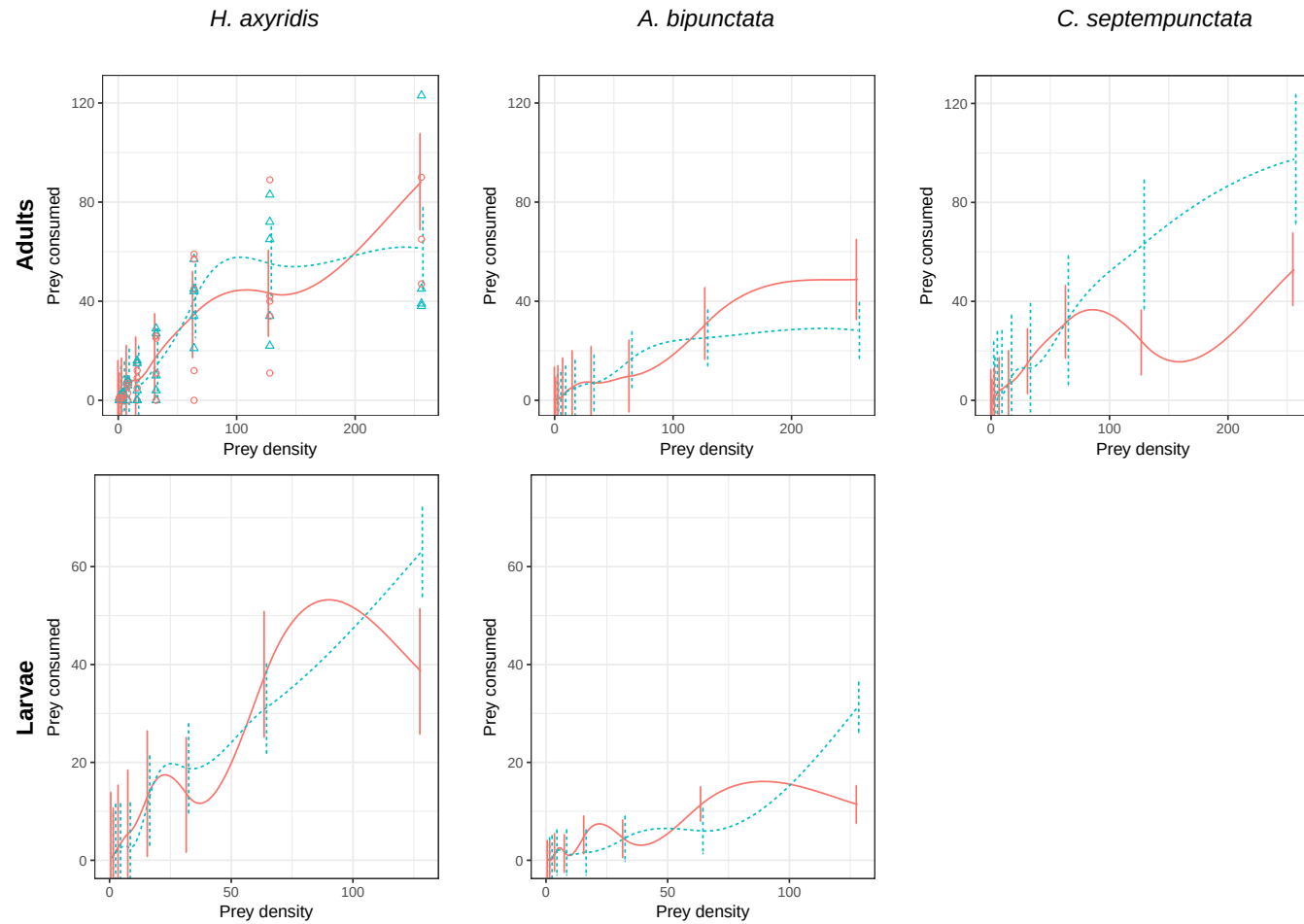
Supplementary Table 2: Results from multiple logistic regressions of the proportion of prey consumed by ladybirds against polynomials of initial prey density to determine suitable functional response types (I, II or III) for each species-treatment. As suggested by ?, a significant negative first order term indicates a type I or II response while a significant positive first order term and a significant negative second order term indicates a type III response. A type III response could also have been suggested by a significant third order term. For each species-treatment combination, the proportion of prey consumed was modelled against first, second and third order polynomials of initial prey density using logistic regression with binomial error structures. Non-significant higher order terms were removed from the analysis through step-wise model simplification. Prey densities values scaled and centred and a quasi-binomial error structure was used. Coefficients are reported with associated standard errors in parenthesis and asterisks denoting significance of P values; * = $P < 0.05$, ** = $P < 0.01$ and *** = $P < 0.001$.

(a) Adult ladybirds						
	<i>H. axyridis</i>		<i>A. bipunctata</i>		<i>C. septempunctata</i>	
	Infected	Uninfected	Infected	Uninfected	Infected	Uninfected
Intercept	0.464 (0.293)	0.045 (0.316)	-0.843*** (0.270)	-1.134*** (0.317)	-0.050 (0.391)	0.412 (0.439)
Density	-0.006*** (0.002)	-0.003* (0.002)	-0.005*** (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.019** (0.008)
Density ²						<0.001* (<0.001)
n	44	44	45	44	43	43

(b) Larval ladybirds				
	<i>H. axyridis</i>		<i>A. bipunctata</i>	
	Infected	Uninfected	Infected	Uninfected
Intercept	0.326 (0.332)	0.868* (0.428)	-1.167** (0.527)	-1.049*** (0.252)
Density	-0.003 (0.003)	-0.013*** (0.005)	-0.034* (0.019)	-0.010*** (0.003)
Density ²			<0.001** (<0.001)	
n	39	37	39	41

Supplementary Table 3: AICc measures of model fit for fitted type I, II and III functional response (FR) models. The lowest AICc values suggest the best model fit with a difference of 2 suggesting a significantly different model fit. The lowest AICc values are highlighted in bold.

Life-stage	Species	Treatment	FR types		
			I	II	III
Adult	<i>H. axyridis</i>	infected	798.667	653.083	648.585
		uninfected	805.539	764.532	764.385
	<i>C. septempunctata</i>	infected	1132.086	1123.759	1096.16
		uninfected	671.747	567.453	558.788
	<i>A. bipunctata</i>	infected	521.994	458.479	460.510
		uninfected	570.760	568.597	570.968
Larvae	<i>H. axyridis</i>	infected	431.930	427.978	429.693
		uninfected	694.134	594.867	597.088
	<i>A. bipunctata</i>	infected	250.698	256.090	255.229
		uninfected	248.034	221.335	222.075



Supplementary Figure 1: Locally weighted non-parametric scatterplot smoothing (LOESS) plots of prey consumed against the initial prey density for the three ladybird predators; invasive alien *H. axyridis* (left) and native *A. bipunctata* (middle) and *C. septempunctata* (right) across their adult (top) and larval (bottom) life-stages. Fitted LOESS models are displayed (lines) with the number of prey consumed at each density and replicate data points for both infected (dashed lines and triangles) and uninfected (solid lines and circles) treatments. 95% confidence intervals are presented as vertical lines (dashed = infected, solid = uninfected).