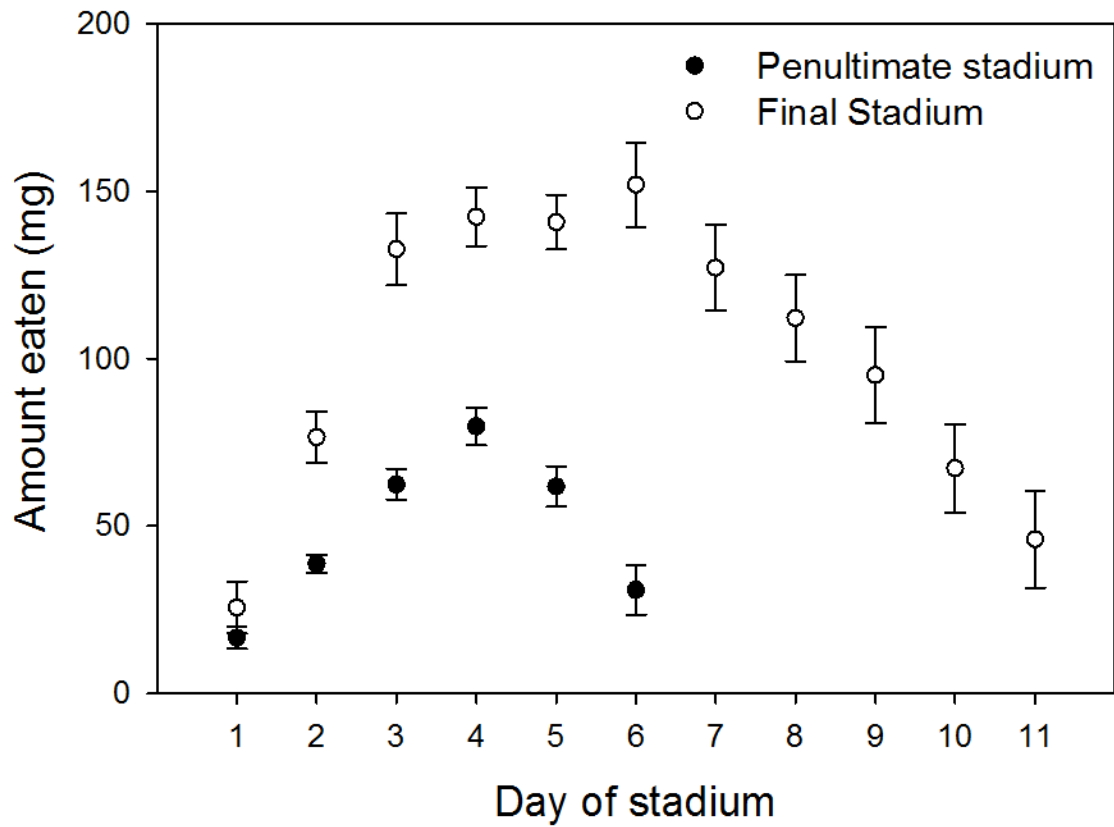
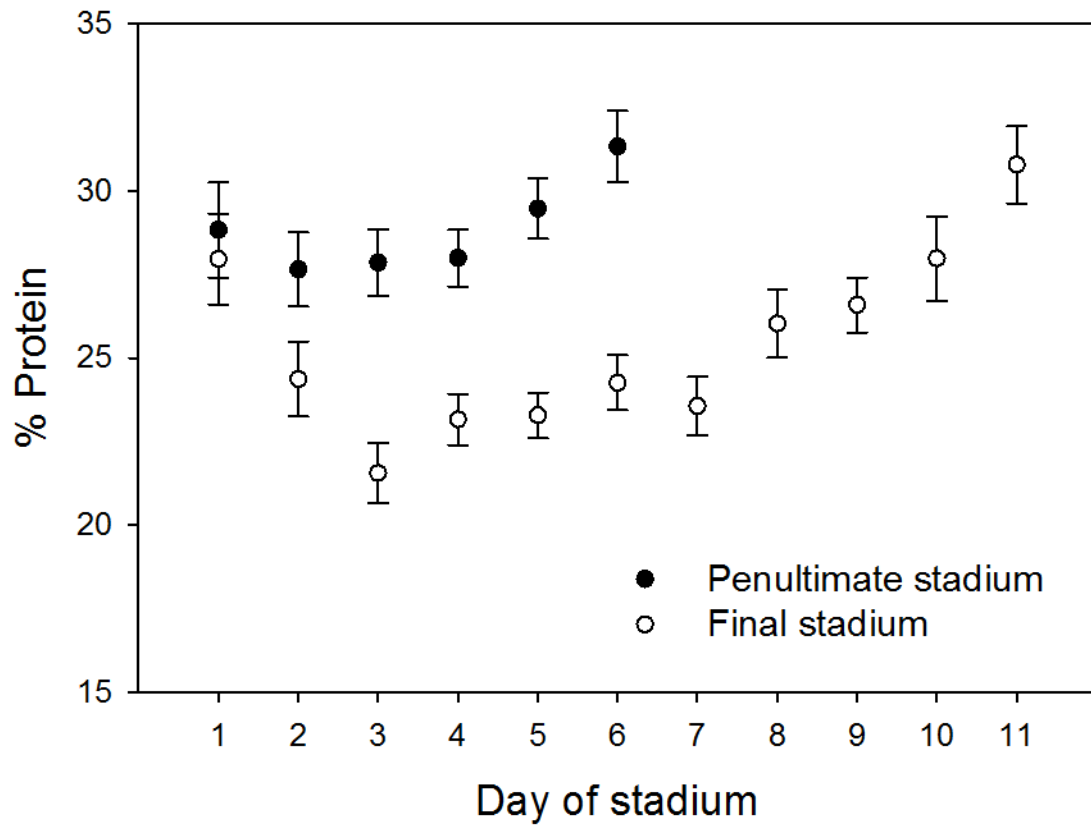


**Fig. S1.** Adult dry masses of *G. incompacta* individuals reared on five experimental diets that varied in their protein to carbohydrate ratios. Means represent least square means corrected for sex, and bars show standard errors.



**Fig. S2.** Total amounts of food eaten (by dry mass) by *G. incorrupta* caterpillars during the penultimate (closed circles) and final (open circles) developmental stadia when allowed to graze between high and low protein foods. Bars show standard errors.



**Fig. S3.** The self-selected protein intake (by dry mass) of *G. incorrupta* caterpillars during the penultimate (closed circles) and final (open circles) developmental stadia when allowed to graze between high and low protein foods. Bars show standard errors.

Table S1. Results of ANCOVAs for total amounts of food, and amounts of high protein and low protein foods eaten by caterpillars in the two days following immune challenge in the Parastism/Injection Experiment.

	Day following immune challenge					
	Day 1			Day 2		
<b>Total Food</b>	<i>DF</i>	<i>F</i>	<i>P</i>	<i>DF</i>	<i>F</i>	<i>P</i>
Treatment	2, 79	9.45	<b>0.0002</b>	2, 74	9.94	<b>0.0001</b>
Family	2, 79	11.31	<b>&lt; 0.0001</b>	2, 74	4.55	<b>0.014</b>
Initial mass	1, 79	1.30	0.26	1, 74	1.13	0.29
<b>High Protein Food</b>						
Treatment	2, 76	1.36	0.35	2, 76	10.84	<b>&lt;0.0001</b>
Family	2, 76	5.44	0.072	2, 76	7.62	<b>0.0010</b>
Treatment*Family	4, 76	3.52	<b>0.011</b>			
Initial mass	1, 76	4.03	<b>0.048</b>	1, 76	0.73	0.40
<b>Low Protein Food</b>						
Treatment	2, 77	1.88	0.26	2, 4.06	0.95	0.46
Family	2, 77	0.12	0.89	2, 4.05	0.15	0.87
Treatment*Family	4, 77	3.19	<b>0.017</b>	4, 72	2.64	<b>0.041</b>
Initial mass	1, 77	1.36	0.25	1, 72	0.14	0.71

Table S2. Results of ANCOVAs for (log transformed) ratio of protein to carbohydrate in self-selected diets in the Parasitism/Injection Experiment for the first and second days following immune challenge.

	Day Following Immune Challenge					
	Day 1			Day 2		
	<i>DF</i>	<i>F</i>	<i>P</i>	<i>DF</i>	<i>F</i>	<i>P</i>
Treatment	2, 75	1.01	0.44	2, 75	0.31	0.75
Family	2, 75	0.63	0.57	2, 75	0.19	0.83
Initial mass	1, 75	3.14	0.080	1, 75	0.26	0.61
Treatment * Family	4, 75	6.05	<b>0.0003</b>	4, 75	3.27	<b>0.016</b>

Table S3. Results of MANCOVAs for the amount of protein and carbohydrate eaten by caterpillars before and after immune challenge in Parasitism/Injection and Choice Experiments.

Experiment	Before			Day 1 after			Day 2 after		
	<i>DF</i>	<i>F</i>	<i>P</i>	<i>DF</i>	<i>F</i>	<i>P</i>	<i>DF</i>	<i>F</i>	<i>P</i>
<b>Parasitism/Injection</b>									
Treatment				4, 162	3.96	<b>0.0043</b>	4, 146	4.04	<b>0.0039</b>
Initial mass				2, 80	3.91	<b>0.024</b>	2, 72	2.32	0.11
<b>Choice</b>									
Treatment	4, 132	1.08	0.37	4, 90	2.29	0.066			
Initial mass	2, 65	9.40	<b>0.0003</b>	2, 44	4.35	<b>0.019</b>			

Table S4. Results of repeated measures ANCOVAs for amounts of total food, high protein food, and low protein food eaten by caterpillars following immune challenge in the Choice Experiment.

	<i>DF</i>	<i>F</i>	<i>P</i>
<b>Total Food</b>			
Treatment	2, 55	2.21	0.12
Time	1, 55	3.00	0.089
Time* Treatment	2, 55	4.29	<b>0.019</b>
<b>High Protein Food</b>			
Treatment	2, 55	1.16	0.32
Time	1, 55	4.65	<b>0.035</b>
Time* Treatment	2, 55	1.87	0.16
<b>Low Protein Food</b>			
Treatment	2, 55	0.85	0.43
Time	1, 55	0.069	0.79
Time* Treatment	2, 55	1.88	0.16

Table S5. Results of repeated measures ANCOVA for (log transformed) ratio of protein to carbohydrate in self-selected diets in the Choice Experiment.

	<i>DF</i>	<i>F</i>	<i>P</i>
Treatment	2, 67	1.23	0.30
Time	1, 67	1.39	0.24
Time * Treatment	2, 67	0.21	0.81

Table S6. Results of repeated measures ANCOVA for the amount of food eaten by caterpillars in the No-Choice Experiment.

	<i>DF</i>	<i>F</i>	<i>P</i>
Treatment	2, 132	5.12	<b>0.0072</b>
Diet	1, 132	9.30	<b>0.0028</b>
Treatment * Diet	2, 132	6.53	<b>0.0020</b>
Time (before, after)	1, 132	0.51	0.48
Time * Treatment	2, 132	9.74	<b>0.0001</b>
Time * Treatment * Diet	2, 132	5.76	<b>0.0040</b>