

Laws, A. L. and Joern, A. 2013. Predator–prey interactions in a grassland food chain vary with temperature and food quality. – *Oikos* 122: 977–986.

Appendix A1

Table A1. Effects of temperature treatment and food quality treatment on nitrogen content and biomass of grasses for each year of the experiment.

	Grass nitrogen content			Grass biomass		
	F-ratio	DF	p	F-ratio	DF	p
2007						
Temperature	8.07	2	< 0.001	0.10	2	0.91
Food quality	2.21	1	0.14	0.36	1	0.56
Temperature × Food quality	1.33	2	0.27	0.40	2	0.68
Error		182			29	
2008						
Temperature	11.47	2	< 0.001	1.79	2	0.21
Food quality	0.12	1	0.73	1.17	1	0.30

Temperature × Food quality	0.14	2	0.87	0.15	2	0.86
Error		84			13	
2009						
Temperature	2.54	2	0.09	0.14	2	0.87
Food Quality	59.46	1	< 0.001	4.64	1	0.02
Temperature × Food quality	1.50	2	0.21	0.48	2	0.75
Error		71			13	

Table A2. Repeated measures analyses for effects of temperature and food quality treatments on grasshopper survival over the course of the experiment (Time) in each year. All possible interactions were considered, but only significant interactions are shown.

	F-ratio	DF	p
2007			
<u>Between subjects</u>			
Temperature	0.60	2	0.55

Food quality	0.87	1	0.35
Spider	7.76	1	0.007
Temperature × Food quality	0.19	2	0.83
Temperature × Spider	0.79	2	0.46
Food quality × Spider	0.04	1	0.85
Temperature × Food quality × Spider	0.41	2	0.67
Error	29.03	60	
<u>Within subjects</u>			
Time	31.88	6	< 0.001
Time × Temperature	0.50	12	0.91
Time × Food quality	0.95	6	0.46
Time × Spider	0.28	6	0.95
Time × Temperature × Food quality	0.35	12	0.98
Time × Temperature × Spider	0.80	12	0.65
Time × Food quality × Spider	2.01	6	0.06
Time × Temperature × Food quality × Spider	0.43	12	0.95

Error		360	
2008			
<u>Between subjects</u>			
Temperature	1.29	2	0.29
Food quality	0.001	1	0.98
Spider	4.03	1	0.05
Temperature × Food quality	1.29	2	0.30
Temperature × Spider	1.22	2	0.31
Food Quality × Spider	1.42	1	0.24
Temperature × Food quality × Spider	0.57	2	0.57
Error		24	
<u>Within subjects</u>			
Time	36.50	6	< 0.01
Time × Temperature	0.66	12	0.79
Time × Food quality	1.89	6	0.09
Time × Spider	2.06	6	0.06

Time × Temperature × Food quality	2.26	12	0.01
Time × Temperature × Spider	1.19	12	0.30
Time × Food quality × Spider	1.05	6	0.40
Time × Temperature × Food quality × Spider	0.64	12	0.81
Error		144	
2009			
<u>Between subjects</u>			
Temperature	1.25	2	0.31
Food quality	0.67	1	0.42
Spider	1.07	1	0.31
Temperature × Food quality	1.20	2	0.92
Temperature × Spider	0.65	2	0.55
Food quality × Spider	0.96	1	0.34
Temperature × Food quality × Spider	0.01	2	0.99
Error		36	
<u>Within subjects</u>			

Time	56.03	6	< 0.001
Time × Temperature	2.61	12	0.007
Time × Food quality	1.59	6	0.046
Time × Spider	3.65	6	0.004
Time × Temperature × Food quality	1.30	12	0.18
Time × Temperature × Spider	1.03	12	0.42
Time × Food quality × Spider	1.17	6	0.31
Time × Temperature × Food quality × Spider	0.29	12	0.99
Error		120	
