

Oikos

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Günther, B., Rall, B. C., Ferlian, O., Scheu, S. and Eitzinger, B. 2013. Variations in prey consumption of centipede predators in forest soils as indicated by molecular gut content analysis. – Oikos 000: 000–000.

Appendix A1

Table A1. Number and percentage of *Lithobius* sp. tested positive for prey DNA in exploratories Hainich (HEW) and Schorfheide (SEW). Columns marked with a star (*) are percentages in relation to the number of tested predators. Number of predators tested positive for 1, 2 or 3 prey groups are presented in the last column. Individuals of *L. curtipes* (SEW only) were included in number of *L. crassipes* for statistical analyses.

Area	Predator	Prey				Predators n tested	Multiple prey DNA detection				
		n Collembolan	% Collembolan*	n Dipteran	% Dipteran*		n Lumbricid	% Lumbricid*	1	2	3
HEW	<i>Lithobius</i> sp. overall	79	40.9	21	10.9	29	15.0	193	79	22	2
	<i>L. crassipes</i>	21	30.4	3	4.3	7	10.1	69	21	5	0
	<i>L. mutabilis</i>	58	46.8	18	14.5	22	17.7	124	58	17	2
SEW	<i>Lithobius</i> sp. overall	56	44.8	58	46.4	69	55.2	125	40	43	19
	<i>L. mutabilis</i>	26	38.2	31	45.6	48	70.6	68	22	28	98
	<i>L. crassipes</i>	15	60	11	44	15	60	25	10	5	7
	<i>L. curtipes</i>	15	46.875	16	50	6	18.75	32	8	10	3
In total	<i>Lithobius</i> sp. overall	135	42.5	79	24.8	98	30.8	318	119	65	21
	<i>L. crassipes</i> <i>/curtipes</i>	51	45.5	30	26.8	28	22.2	126	39	20	10
	<i>L. mutabilis</i>	84	43.8	49	25.5	70	36.5	192	80	45	11

Table A2. Selection of most parsimonious model by comparison of Akaike information criterion (AIC). Asterisk (*) denote factor being significant, plus (+) denote factor being in a significant interaction.

			Prey type		
			Dipteran	Collembolan	Lumbricid
GLM 1	Results	DF	20	20	20
		$\Delta\delta\text{AIC}$	16.968	11.1524	16.7522
	Factors	exploratory region	yes*	yes+	yes*
		forest type	yes	yes	yes+
		predator species	yes+	yes+	yes*
		body mass predator	yes*	yes	yes*
		abundance prey	yes	yes	yes
		litter mass	yes+	yes*	yes
soil pH	yes	yes+	yes		
GLM 2 (step model of GLM 1)	Results	DF	6	10	11
		$\Delta\delta\text{AIC}$	0	0	2.2172
	Factors	exploratory region	yes*	yes	yes*
		forest type	no	no	yes+
		predator species	yes+	yes+	yes*
		body mass predator	yes*	no	yes*
		abundance prey	no	yes*	no
		litter mass	yes+	yes*	no
soil pH	no	yes+	no		
GLM 3	Results	DF	1	1	1
		$\Delta\delta\text{AIC}$	66.3476	10.3145	84.1549
	Factors	exploratory region	no	no	no
		forest type	no	no	no
		predator species	no	no	no
		body mass predator	no	no	no
		abundance prey	no	no	no
		litter mass	no	no	no
soil pH	no	no	no		
GLM 4 (step model of GLM 3)	Results	DF	5	3	5
		$\Delta\delta\text{AIC}$	3.6721	2.8112	0
	Factors	exploratory region	yes*	no	yes*
		forest type	no	no	no
		predator species	yes+	no	yes
		body mass predator	yes*	no	yes*
		abundance prey	no	yes*	no
		litter mass	no	no	no
soil pH	no	yes*	no		

Table A3. Table of Estimates of generalized linear model (GLM 2) on the effect of predator species, predator body mass, prey abundance, litter mass and soil pH for presence of dipteran prey DNA in the Hainich exploratory. SE represents the standard error of the estimated coefficient of the model The AICs defining the best fitting model are provided in Table 1.

	Estimate	SE	Z-value	p-value
<i>L. crassipes</i>	-68.779	26.953	-2.552	0.0107
<i>L. mutabilis</i>	-78.007	27.438	-2.843	0.0045
Predator body mass	33.402	25.063	1.333	0.1826
Predator body mass ²	-13.157	10.575	-1.244	0.2135
Prey abundance	20.434	8.860	2.306	0.0211
Litter mass	7.754	5.493	1.412	0.1581
<i>L. mutabilis</i> × Litter mass	-13.966	6.025	-2.318	0.0204

Table A4. Table of estimates of generalized linear model (GLM 2) on the effect of predator species, predator body mass, prey abundance, litter mass and soil pH for presence of collembolan prey DNA in the Hainich exploratory. SE represents the standard error of the estimated coefficient of the model. The AICs defining the best fitting model are provided in Table 1.

	Estimate	SE	Z-value	p-value
<i>L. crassipes</i>	19.8531	7.4969	2.648	0.00809
<i>L. mutabilis</i>	6.4564	5.7424	1.124	0.26086
Predator body mass	-8.4593	4.6798	-1.808	0.07066
Predator body mass ²	4.1918	2.2958	1.826	0.06788
Prey abundance	-3.3777	1.6220	-2.082	0.03730
Litter mass	6.6102	2.8597	2.312	0.02080
Soil pH	0.6688	0.8798	0.760	0.44718
<i>L. mutabilis</i> × Prey abundance	5.7919	2.0353	2.846	0.00443
<i>L. mutabilis</i> × Litter mass	-8.2022	3.3140	-2.475	0.01332
<i>L. mutabilis</i> × Soil pH	-3.0617	1.0766	-2.844	0.00446

Table A5. Table of Estimates of generalized linear model (GLM 2) on the effect of predator species, predator body mass, prey abundance, litter mass and soil pH for presence of lumbricid prey DNA in the Hainich exploratory. SE represents the standard error of the estimated coefficient of the model.

The AICs defining the best fitting model are provided in Table 1

	Estimate	SE	Z-value	p-value
Predator body mass	-6.3055	1.1824	-5.333	9.67e-08
Predator body mass ²	4.1453	0.9724	4.263	2.02e-05

Table A6. Table of Estimates of generalized linear model (GLM 2) on the effect of predator species, predator body mass, prey abundance, litter mass and soil pH for presence of lumbricid prey DNA in the Schorfheide exploratory. SE represents the standard error of the estimated coefficient of the model. The AICs defining the best fitting model are provided in Table 1.

	Estimate	SE	Z-value	p-value
<i>L. crassipes</i>	10.2051	3.2518	3.138	0.001699
<i>L. mutabilis</i>	11.098	3.322	3.341	0.000835
Body mass	-23.3028	6.7640	-3.445	0.000571
Body mass ²	11.9783	3.4403	3.482	0.000498