

**Supporting Information.** Melanie M. Pollierer, Thomas Larsen, Anton Potapov, Adrian Brückner, Michael Heethoff, Jens Dyckmans, Stefan Scheu. 2019. Compound-specific isotope analysis of amino acids as a new tool to uncover trophic chains in soil food webs. *Ecological Monographs*.

## Appendix S1

**Table S1** Relative amounts (mol percent) of amino acids in resources (fungi - *Chaetomium globosum*, lupine – *Lupinus albus*, lime leaves - *Tilia cordata*, bacteria - *Pseudomonas fluorescens*, and yeast 1 and 2 - *Saccharomyces cerevisiae*).

	<b>Fungi</b>	<b>Lupine</b>	<b>Bacteria</b>	<b>Lime leaves</b>	<b>Yeast 1</b>	<b>Yeast 2</b>
<b>Ala</b>	7.1 ± 1.1	6.8 ± 0.4	17.2 ± 0.5	10.3 ± 1.1	12.4 ± 1.5	9.9 ± 2.7
<b>Asx</b>	13.3 ± 0.5	15.4 ± 1.1	9.1 ± 0.6	12.2 ± 0.4	12.2 ± 1.3	12 ± 2.9
<b>Glx</b>	16.8 ± 1.4	16.7 ± 2.5	8.5 ± 0.7	11.8 ± 0.7	14 ± 2.8	9.4 ± 2.0
<b>Gly</b>	3.5 ± 0.5	3.3 ± 0.4	5.0 ± 0.9	3.8 ± 0.9	3.9 ± 0.4	2.9 ± 0.8
<b>Ile</b>	3.6 ± 0.2	6.9 ± 0.2	8.7 ± 0.5	6.8 ± 1.2	7.3 ± 1.0	9.1 ± 3.8
<b>Leu</b>	9.7 ± 0.6	19.4 ± 6.2	17.7 ± 0.9	13.0 ± 0.6	11.6 ± 0.5	
<b>Lys</b>	2.3 ± 0.5		0.4 ± 0.2			
<b>Met</b>	1.5 ± 0.1	0.7 ± 0.1	0.6 ± 0.2	1.6 ± 0.1	1.0 ± 0.3	0.6 ± 0.1
<b>Phe</b>	5.2 ± 0.4	3.4 ± 0.6	3.2 ± 0.2	4.9 ± 0.7	4.2 ± 0.5	3.5 ± 0.7
<b>Pro</b>	8.8 ± 0.3	6.7 ± 0.4	5.7 ± 0.2	8.0 ± 0.6	6.9 ± 0.2	6.5 ± 1.5
<b>Ser</b>	8.8 ± 0.4	6.6 ± 0.5	4.0 ± 0.6	8.6 ± 0.5	7.2 ± 0.9	6.8 ± 1.7
<b>Thr</b>	9.3 ± 0.4	4.4 ± 0.1	4.9 ± 1.0	7.5 ± 0.8	7.8 ± 0.6	7.3 ± 1.8
<b>Tyr</b>	4.3 ± 0.3	1.6 ± 0.6	0.9 ± 0.2	0.8 ± 0.7	2.0 ± 1.0	
<b>Val</b>	5.5 ± 0.5	7.3 ± 0.2	14.0 ± 0.8	10.3 ± 0.6	10.1 ± 1.5	10.1 ± 2.7

**Table S2** Relative amounts (mol percent) of amino acids in primary consumers (springtails1 - *Heteromurus nitidus*, springtails 2 – *Sinella curviseta*, oribatid mites -*Archezogetes longisetosus*,) raised on different resources (lime leaves - *Tilia cordata*, lupine - *Lupinus albus*, fungi - *Chaetomium globosum*, yeast 1 and 2 - *Saccharomyces cerevisiae*, and bacteria - *Pseudomonas fluorescens*) and in predators (gamasid mites - *Stratiolaelaps scimitus*, spiders - *Parasteatoda tepidariorum*) fed with respective springtails 1 and springtails 2/oribatid mites.

Species	Resource	Ala	Asx	Glx	Gly	Ile	Leu	Met	Phe	Pro	Ser	Thr	Tyr	Val
Springtails 1	Fungi	12.3 ± 1.7	11.6 ± 0.8	10.9 ± 4.1		7.6 ± 1.1	15.5 ± 4.6	1.3 ± 0.3	3.6 ± 0.9	8.7 ± 0.8	7.3 ± 0.8	7.3 ± 0.4		10.2 ± 1.3
Springtails 1	Bacteria	14.4 ± 1.3	10.8 ± 0.4	10.5 ± 1.0	6.9 ± 0.5	6.8 ± 0.9	11.8 ± 1.9	1.1 ± 0.1	3.5 ± 0.4	7.9 ± 0.3	6.9 ± 0.3	6.5 ± 0.3	1.0 ± 0.3	11.3 ± 0.9
Springtails 1	Lime leaves	11.6 ± 0.4	12.1 ± 0.3	13.1 ± 0.6	5.5 ± 1.5	7.2 ± 0.3	11.3 ± 0.5	1.6 ± 0.1	4.4 ± 0.3	7.4 ± 0.2	7.4 ± 0.2	7.5 ± 0.2	1.2 ± 0.3	9.8 ± 0.2
Springtails 1	Yeast 1	14.9 ± 1.5	11.3 ± 0.7	8.5 ± 1.5		8.1 ± 0.6	18.1 ± 1.0	1.6 ± 0.3	2.9 ± 0.5	9.5 ± 0.4	5.6 ± 0.5	6.9 ± 0.6		11.6 ± 1.2
Springtails 2	Lupine	12.3 ± 1.0	12.2 ± 0.2	12.5 ± 1.2	3.4 ± 0.6	7.6 ± 0.3	11.5 ± 0.2	1.5 ± 0.1	3.8 ± 0.4	8.8 ± 0.6	8.3 ± 0.1	7.5 ± 0.3	1.0 ± 0.2	9.5 ± 0.8
Springtails 2	Bacteria	15.1	11.1	7.5	3.2	7.1	14.6	1.2	2.8	10.0	7.0	7.8	0.6	12.0
Springtails 2	Yeast 2	13.2 ± 0.2	11.9 ± 0.6	9.0 ± 0.1		9.0 ± 0.3	15.2 ± 0.1	1.3 ± 0.1	3.2 ± 0.1	8.9 ± 0.3	7.6 ± 0.1	8.0 ± 0.6		11.1 ± 0.0
Oribatid mites	Lupine	13.2 ± 1.5	10.8 ± 0.9	6.6 ± 0.6		9.6 ± 0.5	16.8 ± 0.4	0.9 ± 0.2	2.7 ± 0.4	8.2 ± 0.4	6.9 ± 0.6	7.8 ± 0.8	0.9 ± 0.1	13.2 ± 0.1
Oribatid mites	Bacteria	9.7 ± 1.7	12.5 ± 0.2	8.3 ± 0.9		8.8 ± 0.3	17.1 ± 1.2	1.4 ± 0.3	3.3 ± 0.2	9.5 ± 0.3	8.2 ± 0.4	8.8 ± 0.2		11.7 ± 1.3
Oribatid mites	Lime leaves	11.1 ± 3.2	13.4 ± 2.3	8.8 ± 2.5		8.7 ± 0.7	15.5 ± 0.4	1.3 ± 0.4	2.9 ± 0.7	9.2 ± 0.8	8.0 ± 1.2	8.4 ± 1.2		11.0 ± 2.5
Oribatid mites	Yeast 2	12.0 ± 1.5	13.6 ± 0.6	10.1 ± 0.8	6.7 ± 1.4	10.6 ± 2.2	8.1 ± 7.1	1.1 ± 0.7	2.9 ± 0.3	7.7 ± 0.4	7.7 ± 0.4	7.7 ± 0.4	0.7 ± 0.1	11.1 ± 0.5
Spiders	Fungi	10.0 ± 2.0	11.9 ± 1.5	13.2 ± 1.7	6.4 ± 1.9	6.0 ± 0.9	11.5 ± 1.0	1.2 ± 0.4	4.4 ± 0.4	8.8 ± 1.3	8.4 ± 0.7	7.0 ± 1.0	2.8 ± 1.6	7.4 ± 1.3
Spiders	Bacteria	9.8 ± 2.6	12.9 ± 1.8	14.8 ± 2.4	4.1 ± 1.3	6.4 ± 0.5	11.0 ± 0.9	1.8 ± 0.5	5.2 ± 0.7	7.8 ± 0.3	8.9 ± 0.8	7.7 ± 0.6	1.6 ± 0.4	8.1 ± 1.7
Spiders	Lime leaves	10.6 ± 2.2	11.6 ± 0.6	12.6 ± 1.9	7.6 ± 1.5	6.1 ± 0.4	10.5 ± 2.1	1.1 ± 0.4	4.6 ± 0.5	7.8 ± 0.8	8.2 ± 0.8	6.8 ± 0.4	2.9 ± 2.7	8.1 ± 1.3
Spiders	Yeast 1	10.6 ± 2.0	11.6 ± 1.1	12.3 ± 1.6	7.6 ± 1.6	6.1 ± 0.9	11.8 ± 1.2	1.1 ± 0.2	4.4 ± 0.5	7.4 ± 0.3	7.9 ± 0.7	6.7 ± 0.6	3.1 ± 1.8	7.9 ± 1.4
Gamasid mites	Lupine	12.7 ± 2.2	13.5 ± 4.9	8.3 ± 2.1		6.6 ± 2.7	15.0 ± 1.0	1.8 ± 0.6	3.2 ± 0.6	9.3 ± 2.0	7.1 ± 0.7	9.5 ± 2.3		11.0 ± 2.0
Gamasid mites	Yeast 2	13.3 ± 4.3	11.3 ± 1.4	9.2 ± 1.5		8.7 ± 1.3	14.7 ± 3.0	2.3 ± 1.1	4.6 ± 1.6	8.2 ± 1.0	7.7 ± 1.9	8.7 ± 0.9		10.7 ± 2.7