

Table S1: Temperature (°C) and total precipitation (mm) for the growth periods (GP, mid May to mid October) and non-growth periods (NGP, mid October to mid May) as well as annual for the different years.

	<i>Temperature (°C)</i>	<i>Precipitation (mm)</i>
GP 2014	16.3±2.6	500
NGP 2014/2015	7.2±5.2	535
GP 2015	17.0±4.9	415
NGP 2015/2016	7.2±3.7	613
GP 2016	16.5±4.2	574
NGP 2016/2017	6.4±5.7	419
2014	11.2±5.9	793
2015	11.1±7.5	736
2016	10.7±7.0	978

Table S2: Total N and C concentration (mg / g dw) and C/N ratio in two consecutive years in leaf litter and green leaves. Apl = *Acer platanoides*, Aps = *Acer pseudoplatanus*, Bpe = *Betula pendula*, Cbe = *Carpinus betulus*, Cav = *Coryllus avellana*, Fsy = *Fagus sylvatica*, Fex = *Fraxinus excelsior*, Ptr = *Populus tremula*, Pav = *Prunus avium*, Qro = *Quercus robur*, Sto = *Sorbus torminalis*, Tco = *Tilia cordata*, Tpl = *Tilia platyphyllos*, Ugl = *Ulmus glabra*. Litt = leaf litter, lvs = green leaves. The number indicate the years of sampling. Shown are mean \pm standard deviation for mixed samples.

species	total N (mg/g dw)				total C (mg/g dw)				C/N ratio			
	litt14	litt15	lvs16	lvs17	litt14	litt15	lvs16	lvs17	litt14	litt15	lvs16	lvs17
Apl	12.7 \pm 0.5	9.8 \pm 0.5	31.1 \pm 0.4	33.9 \pm 0.4	549.0 \pm 3.7	583.1 \pm 25.5	540.8 \pm 12.3	522.3 \pm 8.8	43.3 \pm 1.7	59.7 \pm 5.1	17.4 \pm 0.6	15.4 \pm 0.2
Aps	11.8 \pm 1.1	8.2 \pm 0.0	20.4 \pm 0.4	26.1 \pm 0.3	531.1 \pm 3.9	563.3 \pm 24.2	559.5 \pm 1.6	544.0 \pm 20.5	45.3 \pm 4.4	68.7 \pm 3.0	27.5 \pm 0.5	20.8 \pm 0.8
Bpe	8.3 \pm 0.3	7.0 \pm 0.4	27.4 \pm 0.3	30.8 \pm 0.9	577.6 \pm 3.7	555.9 \pm 23.1	526.2 \pm 0.9	526.6 \pm 17.9	69.3 \pm 1.7	79.6 \pm 5.6	19.2 \pm 0.3	17.1 \pm 0.8
Cbe	11.4 \pm 0.5	11.0 \pm 0.5	29.7 \pm 0.3	28.5 \pm 0.6	517.9 \pm 1.3	551.8 \pm 37.6	529.6 \pm 4.5	505.6 \pm 19.3	45.5 \pm 2.0	50.3 \pm 5.7	17.9 \pm 0.0	17.7 \pm 1.0
Cav	13.6 \pm 0.3	12.1 \pm 0.3	29.3 \pm 0.8	27.3 \pm 0.6	531.8 \pm 2.7	518.0 \pm 13.8	555.2 \pm 0.3	537.5 \pm 9.2	39.1 \pm 1.0	42.8 \pm 1.2	19.0 \pm 0.5	19.7 \pm 0.1
Fsy	10.1 \pm 0.6	9.1 \pm 0.9	29.4 \pm 2.1	28.2 \pm 0.5	568.4 \pm 3.6	521.7 \pm 37.7	535.0 \pm 12.5	502.8 \pm 28.6	56.2 \pm 2.8	57.6 \pm 6.1	18.3 \pm 1.7	17.8 \pm 0.9
Fex	19.5 \pm 0.5	6.3 \pm 0.6	33.6 \pm 1.6	31.8 \pm 2.6	547.3 \pm 5.0	530.2 \pm 31.1	525.4 \pm 20.0	529.1 \pm 13.0	28.1 \pm 0.5	84.8 \pm 11.9	15.7 \pm 0.6	16.7 \pm 1.0
Ptr	10.6 \pm 0.3	8.9 \pm 0.3	23.8 \pm 0.5	25.7 \pm 0.7	547.9 \pm 14.1	559.6 \pm 3.5	559.6 \pm 2.6	527.1 \pm 13.3	51.6 \pm 2.8	62.7 \pm 2.5	23.6 \pm 0.6	20.5 \pm 1.0
Pav	8.6 \pm 0.3	8.1 \pm 0.0	27.5 \pm 0.4	24.3 \pm 0.6	541.0 \pm 4.5	545.5 \pm 9.5	551.0 \pm 4.3	530.4 \pm 9.5	62.7 \pm 1.3	67.3 \pm 1.2	20.0 \pm 0.3	21.8 \pm 0.3
Qro	12.4 \pm 0.7	8.3 \pm 0.7	27.9 \pm 0.2	n.a.	563.9 \pm 1.2	573.2 \pm 15.8	505.1 \pm 7.5	n.a.	45.6 \pm 2.6	69.0 \pm 4.3	18.1 \pm 0.3	n.a.
Sto	11.6 \pm 0.7	7.0 \pm 0.1	21.6 \pm 0.3	25.0 \pm 0.6	564.5 \pm 4.7	547.6 \pm 13.9	498.5 \pm 0.6	504.4 \pm 22.0	48.9 \pm 2.9	79.9 \pm 1.0	23.1 \pm 0.3	20.2 \pm 0.5
Tco	14.6 \pm 0.9	12.7 \pm 0.1	36.1 \pm 0.4	35.9 \pm 0.4	545.0 \pm 24.8	518.5 \pm 23.7	530.1 \pm 4.2	470.0 \pm 3.0	37.5 \pm 3.7	40.8 \pm 1.9	14.7 \pm 0.2	13.1 \pm 0.1
Tpl	17.4 \pm 0.7	14.0 \pm 0.8	31.5 \pm 0.6	28.6 \pm 0.4	512.2 \pm 10.4	503.4 \pm 30.3	519.8 \pm 14.2	100.6 \pm 4.9	29.4 \pm 0.6	36.0 \pm 3.0	16.5 \pm 0.2	3.5 \pm 0.2
Ugl	27.9 \pm 0.2	10.7 \pm 0.2	34.3 \pm 0.5	44.9 \pm 0.7	531.9 \pm 59.0	530.6 \pm 7.5	530.6 \pm 7.5	505.9 \pm 12.5	19.1 \pm 2.2	49.6 \pm 1.6	15.5 \pm 0.3	11.3 \pm 0.4

Table S3: Total soluble amino acid, protein, and phenolic concentration (mg / g dw) in two consecutive years in leaf litter and green leaves. Apl = *Acer platanoides*, Aps = *Acer pseudoplatanus*, Bpe = *Betula pendula*, Cbe = *Carpinus betulus*, Cav = *Coryllus avellana*, Fsy = *Fagus sylvatica*, Fex = *Fraxinus excelsior*, Ptr = *Populus tremula*, Pav = *Prunus avium*, Qro = *Quercus robur*, Sto = *Sorbus torminalis*, Tco = *Tilia cordata*, Tpl = *Tilia platyphyllos*, Ugl = *Ulmus glabra*. Litt = leaf litter, lvs = green leaves. The number indicate the years of sampling. Shown are mean \pm standard deviation for mixed samples.

species	total amino acids (mg/g dw)				total protein (mg/g dw)				total phenolics (mg/g dw)			
	litt14	litt15	lvs16	lvs17	litt14	litt15	lvs16	lvs17	litt14	litt15	lvs16	lvs17
Apl	2.3 \pm 0.3	5.0 \pm 0.4	5.0 \pm 0.1	2.1 \pm 0.3	46.8 \pm 9.1	133.4 \pm 8.1	123.0 \pm 32.5	206.7 \pm 20.6	3.4 \pm 0.3	12.0 \pm 0.9	5.2 \pm 0.2	2.8 \pm 0.1
Aps	3.9 \pm 0.1	5.0 \pm 0.1	5.2 \pm 0.3	2.2 \pm 0.6	76.6 \pm 4.9	70.1 \pm 14.9	87.7 \pm 13.9	136.6 \pm 17.0	1.5 \pm 0.1	4.2 \pm 0.4	8.7 \pm 1.2	3.4 \pm 1.1
Bpe	1.8 \pm 0.4	4.8 \pm 0.1	3.6 \pm 0.8	4.2 \pm 0.7	43.9 \pm 5.3	92.5 \pm 17.0	120.5 \pm 27.6	195.1 \pm 16.2	2.1 \pm 0.1	3.6 \pm 0.2	2.5 \pm 0.1	3.0 \pm 0.1
Cbe	2.9 \pm 0.0	4.2 \pm 0.1	4.5 \pm 0.9	3.0 \pm 0.9	51.9 \pm 2.1	56.1 \pm 7.1	71.8 \pm 31.8	122.1 \pm 5.4	3.4 \pm 0.1	6.6 \pm 0.2	6.8 \pm 0.2	6.7 \pm 0.2
Cav	3.9 \pm 0.3	5.9 \pm 2.6	2.8 \pm 0.2	1.7 \pm 0.3	44.9 \pm 7.2	104.3 \pm 14.5	94.0 \pm 21.8	150.4 \pm 29.2	2.3 \pm 0.1	2.1 \pm 0.4	2.2 \pm 0.1	3.0 \pm 0.1
Fsy	1.6 \pm 0.1	5.1 \pm 0.2	4.1 \pm 0.8	1.9 \pm 0.4	43.6 \pm 3.8	101.1 \pm 12.6	158.2 \pm 4.3	253.2 \pm 9.2	1.4 \pm 0.1	5.3 \pm 1.2	3.6 \pm 0.0	1.7 \pm 0.2
Fex	1.3 \pm 0.2	4.5 \pm 0.3	3.2 \pm 0.4	0.7 \pm 0.3	27.1 \pm 5.7	20.5 \pm 1.5	77.1 \pm 20.2	55.0 \pm 1.8	0.3 \pm 0.0	0.7 \pm 0.0	1.1 \pm 0.0	0.6 \pm 0.2
Ptr	3.5 \pm 0.4	4.0 \pm 0.1	4.8 \pm 0.1	4.5 \pm 0.1	48.9 \pm 1.8	49.4 \pm 16.4	145.9 \pm 15.8	164.9 \pm 6.4	3.5 \pm 0.0	2.5 \pm 0.1	3.3 \pm 0.1	5.4 \pm 0.2
Pav	1.4 \pm 0.1	4.7 \pm 0.1	2.9 \pm 0.2	2.3 \pm 0.4	34.6 \pm 6.0	82.9 \pm 18.7	84.7 \pm 24.9	152.0 \pm 6.9	1.2 \pm 0.2	3.6 \pm 0.1	1.8 \pm 0.2	0.7 \pm 0.1
Qro	2.8 \pm 0.1	7.8 \pm 0.4	4.5 \pm 0.8	n.a.	77.1 \pm 8.1	102.8 \pm 4.8	116.7 \pm 2.6	n.a.	3.0 \pm 0.1	11.1 \pm 0.3	8.2 \pm 0.1	n.a.
Sto	0.8 \pm 0.1	4.7 \pm 0.7	4.0 \pm 0.6	2.1 \pm 0.3	26.9 \pm 3.7	139.8 \pm 11.4	112.6 \pm 25.7	121.9 \pm 29.6	0.4 \pm 0.0	7.1 \pm 0.4	3.8 \pm 0.8	0.7 \pm 0.0
Tco	1.6 \pm 0.7	4.6 \pm 0.4	3.6 \pm 0.5	3.0 \pm 0.1	28.0 \pm 2.3	118.9 \pm 21.8	95.4 \pm 10.1	188.3 \pm 15.8	0.6 \pm 0.0	3.5 \pm 0.5	0.9 \pm 0.1	1.5 \pm 0.2
Tpl	3.0 \pm 0.1	3.8 \pm 0.7	5.0 \pm 0.4	2.5 \pm 0.8	39.9 \pm 6.0	81.4 \pm 20.8	89.6 \pm 12.1	100.6 \pm 4.9	0.5 \pm 0.1	1.4 \pm 0.0	1.3 \pm 0.1	1.6 \pm 0.1
Ugl	10.2 \pm 0.6	4.3 \pm 0.5	5.5 \pm 0.6	3.4 \pm 0.1	52.4 \pm 11.3	37.8 \pm 2.9	82.0 \pm 3.8	144.9 \pm 3.9	1.4 \pm 0.1	2.0 \pm 0.1	0.3 \pm 0.0	0.2 \pm 0.0

Table S4: Principal Component Analysis – factor loadings for the measured parameters. Levels of total nitrogen, total carbon, total soluble amino acids, total soluble proteins, and total soluble phenolics measured in litter leaves and green leaves. The parameter explaining most of the variation is highlighted in bold.

Parameter	litter leaves		green leaves	
	loadings 1	loadings 2	loadings 1	loadings 2
Total nitrogen	-0.2447	0.9629	-0.0999	0.0710
Total carbon	0.0058	-0.0029	0.0335	0.1045
Total soluble amino acids	0.3534	0.1938	0.2052	0.9659
Total soluble protein	0.3728	0.0471	0.0625	-0.1180
Total soluble phenolics	0.8223	0.1819	0.9710	-0.1928