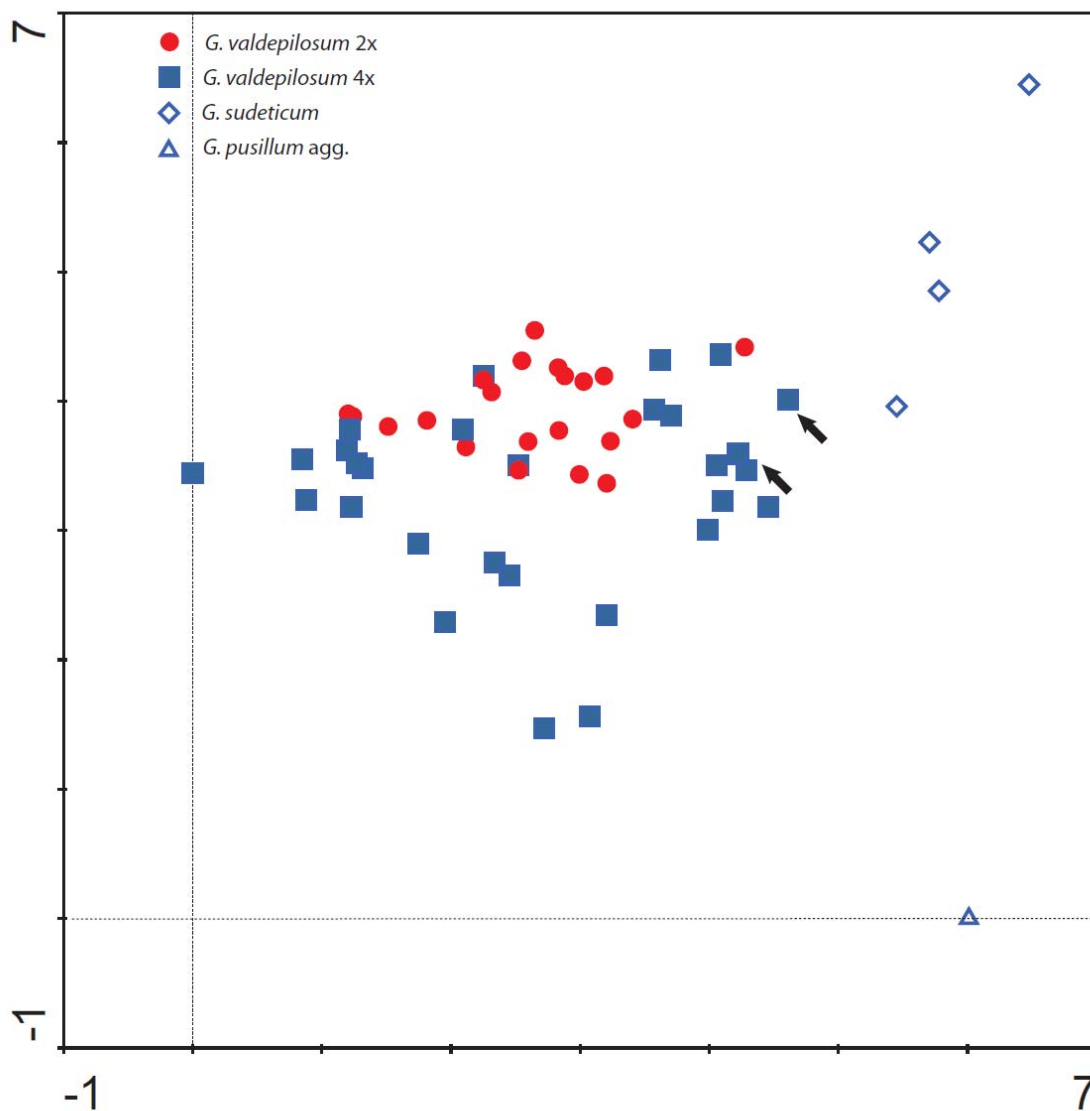
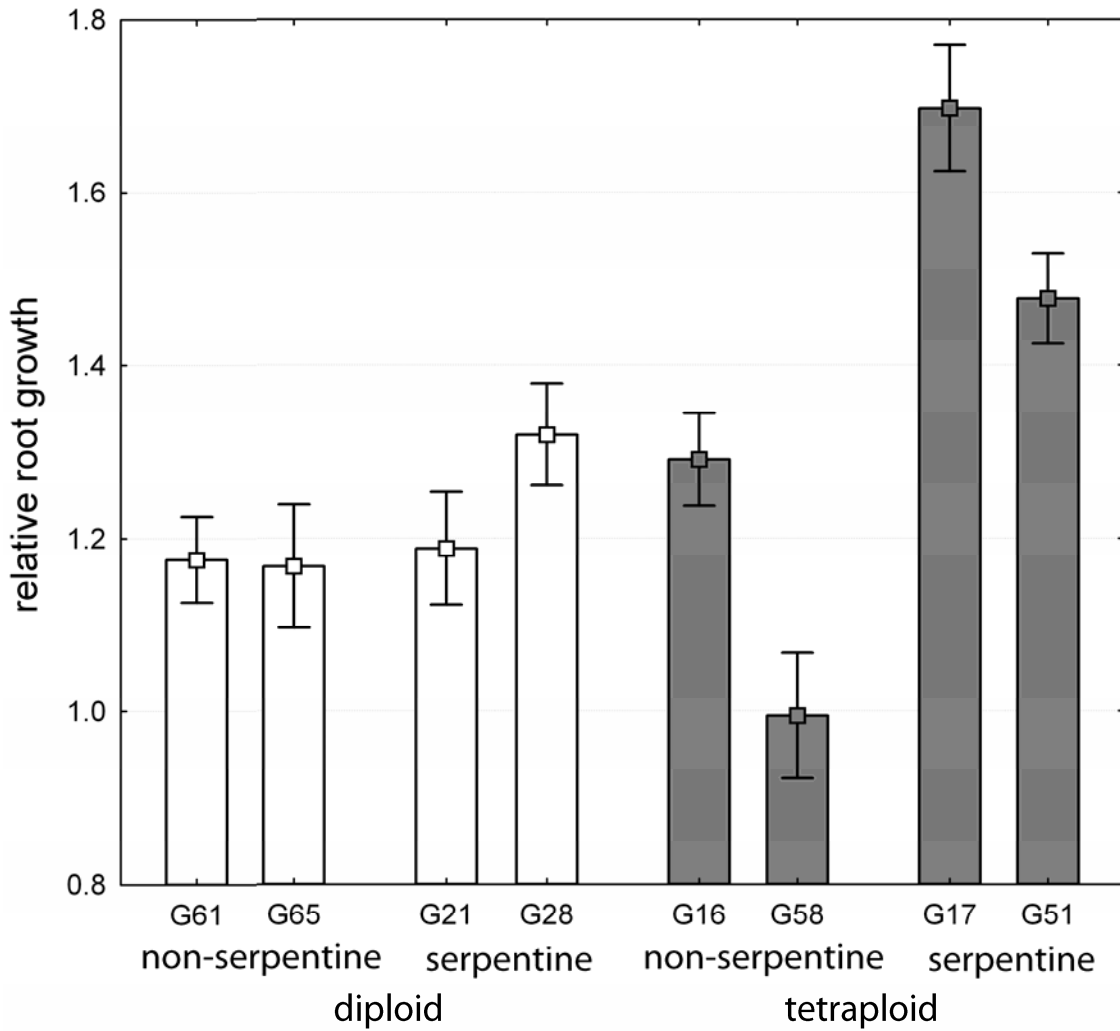


**Kolář F., Lučanová M., Koutecký P., Dortová M., Knotek A. & Suda J. (xxxx): Spatio-ecological segregation of di- and tetraploid cytotypes of *Galium valdepilosum* (Rubiaceae) in Central Europe. – Preslia xx: xx-xx.**

**Electronic appendix 1.** – Habitat preferences of *G. valdepilosum* (di- and tetraploid cytotypes), *G. sudeticum* and one taxonomically uncertain population of *G. pusillum* agg. from the Králický Sněžník Mts. The patterns in floristic composition of 55 vegetation samples are visualized using the detrended correspondence analysis (the first and second ordination axes explain 5.7 % and 5.1 % of the total variation, respectively). Serpentine populations from western Bohemia previously referred to as *G. sudeticum* but mostly likely conspecific with *G. valdepilosum* are marked by an arrow.



**Electronic appendix 2.** – Different response in growth of the root system of seedlings of diploid and tetraploid *G. valdepiosum* populations of different substrate origin (serpentine vs. non-serpentine) planted in a hydroponic cultivation. Square symbols and vertical bars denote means and standard errors of the mean, respectively. See Appendix 1 for population details.































**Electronic appendix 4.** – Header data for 55 vegetation samples from the Electronic appendix 3. The samples are sorted according to *Galium* species / cytotype.

Population code	Taxon / cytotype	Aspect (degrees)	Slope (degrees)	Cover tree layer (%)	Cover shrub layer (%)	Cover herb layer (%)	Cover moss layer (%)	Cover bare rock (%)
G021	<i>G. valdepiiosum</i> - 2x	180	5	40	5	50	60	0
G028	<i>G. valdepiiosum</i> - 2x	225	40	20	5	60	5	7
G061	<i>G. valdepiiosum</i> - 2x	23	80	30	5	25	20	70
G062	<i>G. valdepiiosum</i> - 2x	360	30	10	0	60	70	10
G065	<i>G. valdepiiosum</i> - 2x	270	40	0	5	70	20	5
G090	<i>G. valdepiiosum</i> - 2x	360	30	30	5	50	95	2
G091	<i>G. valdepiiosum</i> - 2x	293	15	60	20	55	3	0
G092	<i>G. valdepiiosum</i> - 2x	293	30	10	30	50	60	0
G093	<i>G. valdepiiosum</i> - 2x	315	15	25	7	40	50	1
G094	<i>G. valdepiiosum</i> - 2x	360	15	80	1	55	40	0
G095	<i>G. valdepiiosum</i> - 2x	180	5	25	10	35	95	0
G096	<i>G. valdepiiosum</i> - 2x	158	40	30	0	30	1	2
G099	<i>G. valdepiiosum</i> - 2x	203	25	0	0	50	5	7
G102	<i>G. valdepiiosum</i> - 2x	225	10	25	0	65	75	1
G103	<i>G. valdepiiosum</i> - 2x	0	0	20	40	45	55	0
G104	<i>G. valdepiiosum</i> - 2x	180	3	30	0	55	50	0
G105	<i>G. valdepiiosum</i> - 2x	203	1	25	0	30	30	0
G117	<i>G. valdepiiosum</i> - 2x	315	10	0	0	50	95	0
G134	<i>G. valdepiiosum</i> - 2x	180	40	0	60	50	40	2
G158	<i>G. valdepiiosum</i> - 2x	0	0	40	5	45	7	0
G159	<i>G. valdepiiosum</i> - 2x	225	30	0	0	60	0	10
G163	<i>G. valdepiiosum</i> - 2x	270	40	10	5	50	70	0
G165	<i>G. valdepiiosum</i> - 2x	90	25	20	15	40	30	0
G016	<i>G. valdepiiosum</i> - 4x	180	25	40	0	20	10	5
G017	<i>G. valdepiiosum</i> - 4x	225	25	20	0	80	40	0
G036	<i>G. valdepiiosum</i> - 4x	203	25	20	5	40	20	0
G036	<i>G. valdepiiosum</i> - 4x	180	35	0	0	20	5	0
G037	<i>G. valdepiiosum</i> - 4x	180	10	70	0	8	5	0
G040	<i>G. valdepiiosum</i> - 4x	293	35	10	0	6	10	0
G041	<i>G. valdepiiosum</i> - 4x	225	10	60	10	30	60	0
G042	<i>G. valdepiiosum</i> - 4x	248	15	40	0	50	70	0
G043	<i>G. valdepiiosum</i> - 4x	270	30	10	10	30	40	0
G044	<i>G. valdepiiosum</i> - 4x	180	5	70	0	40	40	0
G045	<i>G. valdepiiosum</i> - 4x	225	70	70	5	30	40	20
G046	<i>G. valdepiiosum</i> - 4x	225	25	30	5	40	70	0
G046	<i>G. valdepiiosum</i> - 4x	270	90	0	0	15	5	85
G047	<i>G. valdepiiosum</i> - 4x	180	15	10	0	50	60	20
G048	<i>G. valdepiiosum</i> - 4x	270	10	20	0	60	50	10
G050	<i>G. valdepiiosum</i> - 4x	270	90	0	0	40	70	10
G051	<i>G. valdepiiosum</i> - 4x	23	90	20	5	60	40	0
G058	<i>G. valdepiiosum</i> - 4x	203	30	80	0	35	10	0
G059	<i>G. valdepiiosum</i> - 4x	180	30	20	10	50	30	15
G060	<i>G. valdepiiosum</i> - 4x	23	35	0	5	60	10	0
G106	<i>G. valdepiiosum</i> - 4x	248	5	25	2	90	50	0
G116	<i>G. valdepiiosum</i> - 4x	203	15	0	0	60	3	0
G244	<i>G. valdepiiosum</i> - 4x	225	15	0	0	80	0	10



G272	<i>G. valdepilosum</i> - 4x	315	70	20	15	85	60	15
G273	<i>G. valdepilosum</i> - 4x	225	40	10	15	65	50	15
G032	<i>G. valdepilosum</i> - 4x W Bohemian serpentines	180	50	2	0	40	70	0
G136	<i>G. valdepilosum</i> - 4x W Bohemian serpentines	90	20	0	0	60	70	0
G171	<i>G. sudeticum</i> Krkonoše Mts.	23	30	0	60	50	3	40
G171	<i>G. sudeticum</i> Krkonoše Mts.	90	35	0	0	6	0	80
G212	<i>G. sudeticum</i> Krkonoše Mts.	203	35	75	0	30	30	40
G260	<i>G. sudeticum</i> Krkonoše Mts.	90	30	0	0	75	10	10
G135	<i>G. pusillum</i> agg. Králický Sněžník Mts.	180	35	30	0	40	20	30

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**Electronic appendix 5.** – Results of soil analyses from 49 sites of *G. valdepiosum* and *G. sudeticum* where phytosociological relevés were recorded. Values of Ca/Mg ratio below 1, i.e. those typical for serpentine soils, are in bold.

Taxon	No	pH (H2O extract)	N (%)	C (%)	C/N	Ca (mg/kg)	Mg (mg/kg)	Ca/Mg	K (mg/kg)	CEC (mmol/kg)
<i>G. valdepiosum</i> - 2x	<b>G021</b>	5.93	0.640	15.81	24.71	2497.50	4031.25	<b>0.62</b>	102.68	387.79
<i>G. valdepiosum</i> - 2x	<b>G028</b>	6.34	0.419	9.18	21.93	2027.50	4657.50	<b>0.44</b>	173.87	422.94
<i>G. valdepiosum</i> - 2x	<b>G061</b>	5.19	0.500	11.58	23.14	2266.25	473.25	4.79	121.15	282.15
<i>G. valdepiosum</i> - 2x	<b>G062</b>	4.57	0.678	9.67	14.28	2197.50	323.13	6.80	136.74	267.66
<i>G. valdepiosum</i> - 2x	<b>G065</b>	5.10	0.160	2.99	18.72	1568.75	208.25	7.53	138.79	185.43
<i>G. valdepiosum</i> - 2x	<b>G090</b>	4.49	0.616	11.67	18.95	2272.50	851.50	2.67	200.13	319.92
<i>G. valdepiosum</i> - 2x	<b>G091</b>	5.10	0.252	5.15	20.43	1573.75	344.63	4.57	98.96	197.57
<i>G. valdepiosum</i> - 2x	<b>G092</b>	6.29	0.527	6.98	13.23	4088.75	132.25	30.92	83.51	193.95
<i>G. valdepiosum</i> - 2x	<b>G093</b>	5.05	0.493	6.38	12.94	2441.25	627.50	3.89	116.33	259.94
<i>G. valdepiosum</i> - 2x	<b>G094</b>	4.71	0.300	3.68	12.27	914.13	148.13	6.17	102.68	161.62
<i>G. valdepiosum</i> - 2x	<b>G095</b>	5.75	0.603	11.23	18.62	2617.50	2528.75	<b>1.04</b>	96.02	382.75
<i>G. valdepiosum</i> - 2x	<b>G096</b>	6.55	0.179	2.11	11.84	1751.25	379.75	4.61	68.31	105.85
<i>G. valdepiosum</i> - 2x	<b>G099</b>	5.19	0.248	2.98	12.01	1355.00	338.75	4.00	136.33	174.03
<i>G. valdepiosum</i> - 2x	<b>G102</b>	4.53	0.308	4.43	14.37	865.75	124.95	6.93	70.27	175.08
<i>G. valdepiosum</i> - 2x	<b>G103</b>	4.27	0.236	3.07	13.00	577.38	88.66	6.51	64.48	143.70
<i>G. valdepiosum</i> - 2x	<b>G104</b>	4.15	0.313	2.91	9.30	243.63	50.61	4.81	41.89	125.82
<i>G. valdepiosum</i> - 2x	<b>G105</b>	4.79	0.334	4.42	13.21	1061.88	88.14	12.05	44.20	144.49
<i>G. valdepiosum</i> - 2x	<b>G117</b>	7.46	0.68	9.44	13.85	8481.25	250.50	33.86	272.20	
<i>G. valdepiosum</i> - 2x	<b>G158</b>	6.48	0.21	3.78	18.01	3853.75	373.88	10.31	156.75	
<i>G. valdepiosum</i> - 2x	<b>G159</b>	7.59	0.11	5.19	48.24	11007.50	150.50	73.14	89.10	
<i>G. valdepiosum</i> - 2x	<b>G163</b>	6.79	0.69	9.53	13.90	3087.50	4191.25	<b>0.74</b>	239.46	
<i>G. valdepiosum</i> - 2x	<b>G165</b>	6.56	0.23	3.40	14.72	3243.75	278.50	11.65	89.58	
<i>G. valdepiosum</i> - 2x	<b>G166</b>	5.24	0.85	11.87	13.94	1715.00	459.50	3.73	126.92	
<i>G. valdepiosum</i> - 4x	<b>G016</b>	4.36	0.269	6.28	23.38	1431.25	184.75	7.75	175.41	273.03
<i>G. valdepiosum</i> - 4x	<b>G017</b>	5.90	0.627	9.66	15.42	1151.50	3316.25	<b>0.35</b>	75.94	268.91
<i>G. valdepiosum</i> - 4x	<b>G036</b>	7.65	0.168	6.68	39.69	11412.50	402.63	28.35	131.41	465.75
<i>G. valdepiosum</i> - 4x	<b>G037</b>	4.56	1.862	23.27	12.50	2167.50	1428.75	<b>1.52</b>	158.49	331.78
<i>G. valdepiosum</i> - 4x	<b>G040</b>	7.65	0.476	9.84	20.69	29150.00	197.83	147.35	152.23	1630.54
<i>G. valdepiosum</i> - 4x	<b>G041</b>	4.42	0.775	10.80	13.93	1388.75	104.59	13.28	164.54	234.74
<i>G. valdepiosum</i> - 4x	<b>G042</b>	4.10	0.398	7.27	18.24	511.88	67.38	7.60	92.11	195.48
<i>G. valdepiosum</i> - 4x	<b>G043</b>	7.38	1.603	21.85	13.63	11684.57	2449.62	4.77	189.77	789.49
<i>G. valdepiosum</i> - 4x	<b>G044</b>	6.61	1.435	22.31	15.54	6392.50	3110.00	2.06	164.13	605.07
<i>G. valdepiosum</i> - 4x	<b>G045</b>	7.34	1.522	25.36	16.66	15862.50	3060.00	5.18	154.69	870.48
<i>G. valdepiosum</i> - 4x	<b>G046</b>	7.57	0.595	16.51	27.76	8296.25	2572.50	3.22	81.56	501.79
<i>G. valdepiosum</i> - 4x	<b>G047</b>	5.48	1.018	12.48	12.25	1528.75	3040.00	<b>0.50</b>	184.44	278.32
<i>G. valdepiosum</i> - 4x	<b>G048</b>	4.56	1.497	19.52	13.04	1773.75	2212.50	<b>0.80</b>	128.94	342.69
<i>G. valdepiosum</i> - 4x	<b>G049</b>	4.61	0.581	7.93	13.66	1515.00	160.50	9.44	299.23	234.03
<i>G. valdepiosum</i> - 4x	<b>G050</b>	5.19	1.477	25.09	16.98	1051.75	1476.25	<b>0.71</b>	147.61	404.94
<i>G. valdepiosum</i> - 4x	<b>G051</b>	4.93	0.600	12.78	21.30	1473.75	1436.25	<b>1.03</b>	104.84	265.53
<i>G. valdepiosum</i> - 4x	<b>G058</b>	5.32	0.496	5.34	10.76	2551.25	205.01	12.44	339.95	254.84
<i>G. valdepiosum</i> - 4x	<b>G059</b>	6.21	2.274	35.30	15.52	16300.00	479.38	34.00	202.80	889.01
<i>G. valdepiosum</i> - 4x	<b>G060</b>	7.70	0.435	13.76	31.66	11351.25	91.09	124.62	102.99	536.80
<i>G. valdepiosum</i> - 4x	<b>G106</b>	3.97	0.256	6.13	24.00	387.75	168.13	2.31	49.93	213.66
<i>G. valdepiosum</i> - 4x	<b>G116</b>	7.47	0.41	5.52	13.55	9390.00	139.13	67.49	164.41	
<i>G. valdepiosum</i> - 4x	<b>G134</b>	7.66	0.27	7.35	26.79	12590.69	92.35	136.34	327.47	645.33
<i>G. valdepiosum</i> - 4x W	<b>G032</b>	5.3	0.76	10.72	14.11	1370.00	1472.50	NA	139.40	

Bohemian serpentines										
<i>G. valdepilosum</i> - 4x W	<b>G136</b>	5.25	1.18	16.21	13.73	2051.25	3406.25	<b>0.6</b>	243.03	
Bohemian serpentines										
<i>G. sudeticum</i> Krkonoše	<b>G171</b>	5.91	0.53	6.05	11.38	1247.30	57.30	21.77	93.36	70.01
Mts.										
<i>G. pusillum</i> agg. Králický	<b>G171</b>	7.43	0.42	13.44	32.10	5863.75	938.25	6.25	63.53	70.01
Sněžník Mts.										

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