

Electronic Appendix 5:

Frequency of localities of particular *Cirsium* species in phytogeographical districts of the Czech Republic based on the excerption of herbaria of BRNM, BRNU, CB, GM, HOMP, HR, CHOM, LIM, LIT, MJ, MMI, MP, NJM, OL, OLM, OP, OSM, PL, PR, ROZ, SUM, VM, VYM, ZMT (abbreviations follow Thiers, 2009); database FLDOC (Institute of Botany, Czech Academy of Sciences, Průhonice), Czech National Phytosociological Database (Masaryk University, Brno), Database of the Flora of South Bohemia (University of South Bohemia, České Budějovice; <http://botanika.bf.jcu.cz/jpcbs/>), Floristic documentation to the Flora of the Czechoslovak Republic up to 1953 prepared by Karel Domin (Institute of Botany, Czech Academy of Sciences, Průhonice).

Number of localities of particular *Cirsium* species in phytogeographical districts of the Czech Republic (duplicities excluded)

Phytogeographical district (Skalický 1988)	<i>Cirsium acaule</i>	<i>C. arvense</i>	<i>C. brachycephalum</i>	<i>C. canum</i>	<i>C. eriophorum</i>	<i>C. heterophyllum</i>	<i>C. oleraceum</i>	<i>C. palustre</i>	<i>C. pannonicum</i>	<i>C. rivulare</i>	<i>C. vulgare</i>	Area (km ²)
1	54	73	0	29	65	12	20	20	4	0	54	312.16
2	39	87	0	36	27	3	24	14	3	0	16	955.91
3	8	58	0	21	6	11	3	22	1	0	6	456.67
4	204	122	0	47	132	28	56	12	98	0	37	736.64
5	8	19	0	6	3	2	5	0	3	0	2	169.23
6	30	69	0	18	17	15	40	34	34	0	28	451.31
7	196	250	0	58	53	1	24	9	26	0	38	1452.72
8	76	110	0	24	34	1	56	5	37	0	38	293.70
9	13	52	0	12	7	0	14	4	4	0	18	130.89
10	12	51	0	26	9	0	8	6	0	0	10	423.33
11	29	136	0	111	5	0	55	24	5	0	25	1082.21
12	52	29	0	19	11	0	22	10	4	0	10	730.20
13	43	20	0	38	37	1	14	21	16	2	2	877.79
14	21	10	0	31	0	0	29	4	0	4	6	836.70
15	118	207	0	202	4	3	164	71	14	48	41	1624.98
16	0	181	0	41	6	0	29	8	2	10	28	1325.43

17	0	38	0	7	0	0	2	0	4	1	13	172.46
18	1	380	14	186	4	0	40	25	9	7	76	1353.79
19	10	103	0	62	36	0	26	11	127	19	17	433.99
20	0	158	4	59	4	0	39	10	108	17	42	1563.33
21	0	224	0	113	5	0	56	10	5	50	36	1459.74
22	1	15	0	0	0	53	6	44	0	0	4	373.44
23	0	9	0	0	0	5	0	12	0	0	1	112.49
24	21	44	0	5	13	26	11	72	1	0	19	569.46
25	10	27	0	11	6	87	36	93	0	0	13	626.68
26	15	23	0	0	0	14	10	103	0	0	11	836.86
27	16	13	0	1	0	4	9	37	0	0	14	441.80
28	94	60	0	15	23	132	116	195	1	0	52	1972.67
29	31	23	0	2	48	15	25	21	0	0	4	412.90
30	6	24	0	22	0	3	17	24	0	0	7	454.10
31	80	155	0	9	2	12	71	128	0	0	61	2555.82
32	91	303	0	51	24	9	147	216	8	0	52	1164.46
33	5	3	0	0	0	1	4	4	0	0	0	243.66
34	15	30	0	0	0	44	46	86	0	0	14	769.78
35	15	104	0	47	1	7	80	162	0	0	40	1262.27
36	4	45	0	6	0	16	31	96	0	0	19	585.40
37	12	231	0	12	1	215	255	329	0	0	137	3035.66
38	0	109	0	5	0	10	16	120	0	0	86	703.50
39	0	104	0	5	0	27	6	276	0	0	26	1594.49
40	0	28	0	0	0	15	21	41	0	0	31	459.45
41	19	215	0	44	0	8	121	212	0	0	83	2197.91
42	0	62	0	0	0	5	60	91	0	1	22	1885.24
43	0	8	0	0	0	3	10	47	0	0	1	273.08
44	12	19	0	22	10	14	28	8	6	0	3	49.57
45	23	43	0	27	7	52	68	22	28	2	16	555.46
46	0	11	0	0	1	17	18	28	0	0	3	251.98
47	1	19	0	3	0	45	21	46	0	0	4	253.10
48	2	206	0	0	1	16	56	43	0	0	84	251.98
49	0	50	0	0	0	3	8	18	0	0	11	225.91
50	0	17	0	1	1	20	30	51	0	1	8	221.65
51	68	96	0	18	10	10	92	35	8	0	44	440.44

52	29	18	0	14	1	2	34	81	0	0	13	421.05
53	21	55	0	28	1	9	74	55	1	1	31	673.25
54	4	20	0	0	0	2	13	17	0	1	9	86.54
55	31	22	0	33	1	2	59	17	1	0	4	557.95
56	6	41	0	15	2	20	105	36	1	12	8	1259.46
57	19	2	0	10	0	1	16	8	9	1	1	212.97
58	6	35	0	6	0	24	62	25	0	15	20	540.98
59	0	73	0	8	0	19	119	86	0	131	16	314.21
60	22	43	0	39	1	0	51	12	10	22	14	228.83
61	15	23	0	37	0	4	51	25	0	41	12	414.88
62	20	25	0	66	0	0	47	8	0	41	41	384.66
63	48	123	0	116	0	8	228	56	0	199	64	1891.18
64	4	62	0	38	0	1	55	56	0	0	25	728.50
65	21	15	0	20	1	0	29	6	0	4	12	667.29
66	10	36	0	14	0	6	49	119	0	6	18	1202.15
67	10	306	0	47	0	43	209	672	0	57	88	5838.86
68	12	195	0	153	4	0	137	106	7	45	74	2512.49
69	87	51	0	153	0	105	108	145	0	124	13	821.47
70	0	41	0	6	20	0	17	7	1	14	12	81.81
71	0	60	0	43	2	0	53	35	4	83	30	1228.62
72	0	53	0	17	2	0	17	3	2	15	5	472.33
73	0	25	0	8	0	4	33	23	1	53	24	1270.65
74	2	85	0	20	1	1	56	41	0	91	31	1315.57
75	0	66	0	14	8	4	71	123	4	180	42	2084.28
76	1	125	0	81	4	1	148	42	8	80	37	1313.63
77	0	44	0	26	0	0	38	40	5	11	20	479.89
78	37	241	0	108	40	0	137	90	191	165	72	609.60
79	4	95	0	35	6	0	57	21	4	43	17	662.91
80	18	103	0	13	13	0	39	31	15	83	9	413.84
81	0	55	0	13	4	0	61	37	1	82	12	270.98
82	18	43	0	3	47	2	13	31	11	83	10	365.96
83	1	72	0	6	1	1	39	23	0	12	21	721.08
84	0	80	0	2	8	0	46	39	2	67	12	772.19
85	1	12	0	2	14	104	13	59	0	0	13	646.50
86	2	5	0	0	0	33	3	41	0	0	0	177.35

87	3	10	0	0	1	17	20	69	0	0	3	352.41
88	1	41	0	0	0	447	37	317	0	0	16	1556.08
89	0	4	0	0	0	23	1	30	0	0	2	166.81
90	0	12	0	0	0	7	3	82	0	3	4	204.10
91	4	22	0	7	0	124	39	119	0	45	5	533.85
92	0	8	0	0	0	61	26	38	0	1	4	351.14
93	3	91	0	1	0	140	96	56	0	12	10	475.71
94	0	0	0	0	0	1	10	1	0	1	0	22.81
95	0	46	0	1	0	14	59	77	0	76	10	259.82
96	0	2	0	0	0	5	2	2	0	4	1	176.42
97	0	10	0	2	0	30	25	30	0	39	5	615.38
98	0	6	0	2	1	2	6	26	0	53	3	171.14
99	1	46	0	5	31	0	34	152	0	120	2	713.48

Distribution overlap of species using sum of geometric averages of localities of parents in phytogeographical districts
(= denominators in *Equation (1)* for calculation of relative frequency of particular hybrid combinations in nature)

	aca	arv	bra	can	eri	het	ole	pal	pan	riv	vul
aca											
arv	2665										
bra	4	98									
can	1692	3789	66								
eri	947	1609	11	918							
het	981	2193	0	883	436						
ole	2220	5389	36	3018	1137	2123					
pal	2084	5565	25	2656	1029	2896	4793				
pan	740	1474	32	959	613	219	1019	733			
riv	712	2480	18	1596	523	629	2301	2105	572		
vul	1502	3901	46	2061	839	1350	3092	3249	753	1344	