

SUPPLEMENTARY DATA

TABLE S1. list of sampled taxa, their 2C and Cx genome sizes, life form, ephemeroïd phenology presence and storage organ type.

APG Family	Species	Genome size 2C [Mbp]	Ploidy level	Genome size Cx [Mbp]	CV genome size [%]	Used standard	Ratio	Life-form	G/N	Node number	Ephemeroïd phenology	Storage organ	Sample origin
Aristolochiaceae	<i>Aristolochia clematitis</i>	757	2	379	0.34	Ipomoea quamoclit	0.612	Hkf	N	1			49°14'0.973"N, 16°34'11.917"E
Aristolochiaceae	<i>Aristolochia fimbriata</i> *	880	2	440				Gf	G	1	no	tuber	
Aristolochiaceae	<i>Aristolochia rotunda</i> *	582	2	291				Gf	G	1	no	tuber	
Ranunculaceae	<i>Ranunculus bulbosus</i> *	10234	2	5117				Gf	G	2	no	tuber	
Ranunculaceae	<i>Ranunculus polyanthemus</i>	11193	2	5596	0.73	Pisum sativum	1.427	Hkf	N	2			Botanical garden Masaryk Univ. Brno
Ranunculaceae	<i>Ranunculus sardous</i> *	6895	2	3448				Tf	N	2			
Ranunculaceae	<i>Anemone narcissiflora</i> *	17551	2	8776				Gf	G	3	no	rhizome	
Ranunculaceae	<i>Hepatica nobilis</i>	30348	2	15174	0.83	Vicia faba	1.304	Hkf	N	3			49°14'4.665"N, 16°40'27.691"E
Ranunculaceae	<i>Anemone apennina</i> *	26454	2	13227				Gf	G	4	yes	rhizome	
Ranunculaceae	<i>Anemone blanda</i>	27039	2	13520		Haemanthus albilfos	0.415	Gf	G	4	yes	rhizome	37°10'23.862"N, 31°55'32.400"E
Ranunculaceae	<i>Anemone coronaria</i> *	21874	2	10937				Gf	G	4	yes	rhizome	
Ranunculaceae	<i>Anemone hortensis</i> *	23495	2	11748				Gf	G	4	yes	rhizome	
Ranunculaceae	<i>Anemone nemorosa</i> *	37017	4	9254				Gf	G	4	yes	rhizome	
Ranunculaceae	<i>Anemone ranunculoides</i> *	32473	4	8118				Gf	G	4	yes	rhizome	
Ranunculaceae	<i>Anemone sylvestris</i>	15798	2	7899	1.42	Pisum sativum	2.015	Hkf	N	4			49°13'8.777"N, 16°30'40.05"E
Ranunculaceae	<i>Anemone virginiana</i> *	17457	2	8729				Hkf	N	4			
Ranunculaceae	<i>Isopyrum thalictroides</i> *	854	2	427				Gf	G	5	yes	rhizome	
Ranunculaceae	<i>Thalictrum simplex ssp. galioides</i>	2167	4	542	1.02	Pisum sativum	0.276	Hkf	N	5			Botanical garden Masaryk Univ. Brno
Berberidaceae	<i>Berberis vulgaris</i>	2681	2	1341	0.23	Solanum lycopersicum	1.580	Ff	N	6			49°13'0.604"N, 16°40'12.846"E
Berberidaceae	<i>Epimedium alpinum</i> *	8010	2	4005				Gf	G	6	no	rhizome	
Berberidaceae	<i>Jeffersonia diphylla</i> *	3445	2	1722				Gf	G	6	yes	rhizome	
Berberidaceae	<i>Jeffersonia dubia</i> *	2691	2	1346				Gf	G	6	yes	rhizome	
Berberidaceae	<i>Nandina domestica</i> *	4303	2	2152				Ff	N	6			
Berberidaceae	<i>Podophyllum emodi</i> *	28762	2	14381				Gf	G	6	yes	rhizome	
Papaveraceae	<i>Dicranostigma franchetianum</i> *	1565	2	783				Hkf	N	7			
Papaveraceae	<i>Chelidonium majus</i>	1967	2	984	0.72	Carex acutiformis	2.459	Hkf	N	7			49°12'38.500"N, 16°34'43.733"E
Papaveraceae	<i>Sanguinaria canadensis</i>	1942	2	971	0.91	Bellis perennis	0.628	Gf	G	7	yes	rhizome	www.lukon-glads.cz
Fumariaceae	<i>Corydalis cava</i> *	1870	2	935				Gf	G	8	yes	tuber	
Fumariaceae	<i>Corydalis intermedia</i> *	1395	2	697				Gf	G	8	yes	tuber	

Fumariaceae	<i>Corydalis lutea</i>	1179	4	295	0.92	Carex acutiformis	1.474	Hkf	N	8			Botanical garden Masaryk Univ. Brno
Fumariaceae	<i>Corydalis pumila</i> *	1173	2	587				Gf	G	8	yes	tuber	
Fumariaceae	<i>Corydalis solida</i> *	1191	2	595				Gf	G	8	yes	tuber	
Vitaceae	<i>Parthenocissus himalayensis</i>	3182	4	795	0.21	Solanum lycopersicum	1.875	Gf	G	9	no	tuber	Botanical garden Masaryk Univ. Brno
Vitaceae	<i>Parthenocissus tricuspidata</i> ⁺	1027	2	514				Ff	N	9			
Oxalidaceae	<i>Oxalis acetosella</i> ⁺	5575	2	2788				Gf	G	10	no	rhizome	
Oxalidaceae	<i>Oxalis corniculata</i> var. <i>repens</i>	1918	6	320	0.21	Solanum lycopersicum	1.130	Hkf	N	10			49°15'2.705"N, 16°34'24.511"E
Oxalidaceae	<i>Oxalis corymbosa</i> *	719	2	359				Gf	G	10	no	bulb	
Oxalidaceae	<i>Oxalis dillenii</i> ⁺	978	4	245				Tf	N	10			
Oxalidaceae	<i>Oxalis linearis</i> ⁺	2249	2	1125				Gf	G	10	no	bulb	
Oxalidaceae	<i>Oxalis megalorrhiza</i> ⁺	796	2	398				Gf	G	10	no	root	
Oxalidaceae	<i>Oxalis pes-caprae</i> ⁺	1340	4	335				Gf	G	10	no	bulb	
Oxalidaceae	<i>Oxalis spiralis</i> ⁺	1175	2	587				Gf	G	10	no	root	
Oxalidaceae	<i>Oxalis vulcanicola</i> ⁺	867	2	434				Gf	G	10	no	root	
Passifloraceae	<i>Passiflora edulis</i> ⁺	3115	2	1557				Hkf	N	11			
Passifloraceae	<i>Passiflora quadrangularis</i> *	4277	2	2139				Gf	G	11	no	root	
Euphorbiaceae	<i>Mercurialis annua</i>	2557	4	639	1.44	Solanum lycopersicum	1.507	Tf	N	12			49°11'36.763"N, 16°33'25.906"E
Euphorbiaceae	<i>Mercurialis huetii</i> ⁺	1399	2	700				Tf	N	12			
Euphorbiaceae	<i>Mercurialis perennis</i> *	6298	8	787				Gf	G	12	no	rhizome	
Euphorbiaceae	<i>Euphorbia</i> cf. <i>apios</i>	2870	4	717	1.11	Solanum lycopersicum	1.691	Gf	G	13	no	root	36°54'56.984"N, 30°3'31.444"E
Euphorbiaceae	<i>Euphorbia helioscopia</i>	1750	4	438	1.37	Carex acutiformis	2.188	Tf	N	13			49°12'39.419"N, 16°34'46.703"E
Fabaceae	<i>Lathyrus annuus</i> ⁺	12538	2	6269				Tf	N	14			
Fabaceae	<i>Lathyrus heterophyllus</i> ⁺	17995	2	8998				Hkf	N	14			
Fabaceae	<i>Lathyrus latifolius</i>	15053	2	7526	1.54	Pisum sativum	1.920	Hkf	N	14			49°13'15.118"N, 16°40'10.245"E
Fabaceae	<i>Lathyrus tuberosus</i> *	12058	2	6029				Gf	G	14	no	tuber	
Fabaceae	<i>Lathyrus aphaca</i> ⁺	9037	2	4519				Tf	N	15			
Fabaceae	<i>Lathyrus laxiflorus</i>	16419	2	8210	1.16	Pisum sativum	2.094	Gf	G	15	no	root	37°48'4.13"N, 30°51'36.80"E
Cucurbitaceae	<i>Bryonia alba</i> *	5827	2	2913				Gf	G	16	no	tuber	
Cucurbitaceae	<i>Bryonia dioica</i> *	5522	2	2761				Gf	G	16	no	tuber	
Cucurbitaceae	<i>Bryonia verrucosa</i> *	4504	2	2252				Gf	G	16	no	tuber	
Cucurbitaceae	<i>Ecballium elaterium</i> ⁺	2442	2	1221				Gf	G	16	no	tuber	
Cucurbitaceae	<i>Echinocystis lobata</i>	1319	4	330	0.51	Solanum lycopersicum	0.778	Tf	N	16			49°12'44.587"N, 16°34'42.654"E
Cucurbitaceae	<i>Luffa cylindrica</i> ⁺	1663	2	832				Tf	N	16			
Cucurbitaceae	<i>Trichosanthes anguina</i> ⁺	2152	2	1076				Tf	N	16			
Begoniaceae	<i>Begonia dregei</i> ⁺	1291	2	646				Gf	G	17			

Begoniaceae	<i>Begonia grandis</i> *	1086	2	543				Gf	G	17	no	tuber	
Begoniaceae	<i>Begonia luxurians</i> *	626	2	313				Hkf	N	17			
Begoniaceae	<i>Begonia socotrana</i> *	1001	2	501				Gf	G	17			
Geraniaceae	<i>Geranium columbinum</i>	1398	2	699	1.56	Solanum lycopersicum	0.824	Tf	N	18			49°12'39.327"N, 16°34'46.639"E
Geraniaceae	<i>Geranium sanguineum</i>	7480	8	935	1.05	Bellis perennis	2.421	Hkf	N	18			49°13'1.686"N, 16°40'11.906"E
Geraniaceae	<i>Geranium tuberosum</i> *	2424	4	606				Gf	G	18	no	tuber	
Brassicaceae	<i>Cardamine bulbifera</i> *	3685	12	307				Gf	G	19	yes	rhizome	Published as Dentaria bulbifera
Brassicaceae	<i>Cardamine impatiens</i>	356	2	178	1.47	Carex acutiformis	0.446	Tf	N	19			49°12'30.267"N, 16°34'38.077"E
Tropaeolaceae	<i>Tropaeolum majus</i>	4615	4	1154	1.77	Pisum sativum	0.589	Hkf	N	20			Botanical garden Masaryk Univ. Brno
Tropaeolaceae	<i>Tropaeolum tuberosum</i>	2477	2	1239	1.79	Pisum sativum	0.316	Gf	G	20	no	tuber	www.lukon-glads.cz
Balsaminaceae	<i>Impatiens glandulifera</i> *	1858	2	929				Tf	N	21			
Balsaminaceae	<i>Impatiens omeiensis</i> *	6378	6	1063				Gf	G	21	no	tuber	
Balsaminaceae	<i>Impatiens parviflora</i>	3748	4	937	1.44	Pisum sativum	0.478	Tf	N	21			49°15'3.09"N, 16°34'25.315"E
Boraginaceae	<i>Symphytum officinale</i>	3809	6	635	0.78	Solanum lycopersicum	2.245	Hkf	N	22			49°14'57.650"N, 16°34'21.753"E
Boraginaceae	<i>Symphytum tuberosum</i> *	5369	8	671				Gf	G	22	no	tuber	
Apocynaceae	<i>Vinca herbacea</i>	1577	2	789	0.61	Bellis perennis	0.510	Gf	G	23	no	root	38°3'15.029"N, 32°58'33.413"E
Apocynaceae	<i>Vinca minor</i>	1340	2	670	1.32	Solanum lycopersicum	0.790	Chf	N	23			49°13'5.891"N, 16°40'42.984"E
Apocynaceae	<i>Asclepias syriaca</i> *	822	2	411				Gf	G	24	no	rhizome	
Apocynaceae	<i>Vincetoxicum hirundinaria</i> *	646	2	323				Hkf	N	24			
Lamiaceae	<i>Phlomis russeliana</i>	9244	4	2311	0.21	Pisum sativum	1.179	Hkf	N	25			Botanical garden Masaryk Univ. Brno
Lamiaceae	<i>Phlomis tuberosa</i> *	3965	2	1982				Gf	G	25	no	rhizome	
Lamiaceae	<i>Stachys affinis</i>	2796	2	1398	0.40	Bellis perennis	0.905	Gf	G	26	no	tuber	Cultivated plants of unknown origin
Lamiaceae	<i>Stachys sylvatica</i>	2273	2	1136	1.38	Bellis perennis	0.736	Hkf	N	26			49°16'38.592"N, 16°38'5.102"E
Scrophulariaceae	<i>Scrophularia nodosa</i> *	1352	2	676				Gf	G	27	no	rhizome	
Scrophulariaceae	<i>Scrophularia umbrosa ssp. neesii</i>	2401	4	600	0.92	Solanum lycopersicum	1.415	Hkf	N	27			49°16'18.224"N, 16°38'25.562"E
Scrophulariaceae	<i>Scrophularia vernalis</i>	681	2	340	0.43	Solanum lycopersicum	0.401	Hkf	N	27			49°13'48.33"N 16°40'44.53"E
Solanaceae	<i>Datura innoxia</i> *	4443	2	2221				Gf	G	28	no	root	
Solanaceae	<i>Datura quercifolia</i> *	3374	2	1687				Tf	N	28			
Solanaceae	<i>Datura stramonium</i>	3807	2	1903	0.48	Pisum sativum	0.485	Tf	N	28			49°12'39.333"N, 16°34'46.775"E
Solanaceae	<i>Solanum etuberosum</i> *	1516	2	758				Chf	N	29			
Solanaceae	<i>Solanum lycopersicum</i> *	1697	2	848				Tf	N	29			
Solanaceae	<i>Solanum pinnatisectum</i> *	1516	2	758				Gf	G	29	no	tuber	
Solanaceae	<i>Solanum tuberosum</i> *	3148	4	787				Gf	G	29	no	tuber	
Convolvulaceae	<i>Ipomoea batatas</i>	2769	4	692	2.12	Solanum lycopersicum	1.632	Gf	G	30	no	tuber	Cultivated plants of unknown origin
Convolvulaceae	<i>Ipomoea quamoclit</i> *	1238	2	619				Tf	N	30			

Convolvulaceae	<i>Ipomoea tiliacea</i> ⁺	3912	4	978				Gf	G	30	no	tuber	
Convolvulaceae	<i>Ipomoea trifida</i> ⁺	1663	2	832				Gf	G	30	no	tuber	
Adoxaceae	<i>Adoxa moschatellina</i> [*]	40213	2	20106				Gf	G	31	yes	rhizome	
Adoxaceae	<i>Sambucus ebulus</i>	21246	2	10623	0.72	Epipremnum aureum	2.719	Hkf	N	31			49°13'4.89"N, 16°40'9.50"E
Adoxaceae	<i>Sambucus nigra</i>	24053	2	12026	1.49	Ruscus aculeatus	1.194	Ff	N	31			49°13'6.60"N, 16°40'48.55"E
Adoxaceae	<i>Sambucus racemosa</i> ⁺	20636	2	10318				Ff	N	31			
Valerianaceae	<i>Valeriana dioica</i> ⁺	2978	2	1489				Hkf	N	32			
Valerianaceae	<i>Valeriana officinalis</i>	2654	2	1327	0.35	Solanum lycopersicum	1.564	Hkf	N	32			49°13'35.072"N, 17°38'45.718"E
Valerianaceae	<i>Valeriana tuberosa</i>	3232	2	1616	0.97	Solanum lycopersicum	1.905	Gf	G	32	yes	tuber	41°43'38.306"N, 15°47'47.871"E
Apiaceae	<i>Hacquetia epipactis</i> [*]	2692	2	1346				Gf	G	33	yes	rhizome	
Apiaceae	<i>Sanicula europaea</i>	2108	2	1054	0.31	Solanum lycopersicum	1.243	Hkf	N	33			49°13'16.01"N, 16°40'31.943"E
Asteraceae	<i>Doronicum austriacum</i>	7080	2	3540	3.59	Bellis perennis	2.291	Hkf	N	34			49°30'51.115"N, 18°22'49.561"E
Asteraceae	<i>Doronicum hungaricum</i> [*]	7525	2	3762				Gf	G	34	no	tuber	
Asteraceae	<i>Bellis annua</i>	2816	2	1408	0.77	Solanum lycopersicum	1.660	Tf	N	35			37° 4'19.47"N, 31°14'0.62"E
Asteraceae	<i>Bellis perennis</i>	3090	2	1545	0.81	Solanum lycopersicum	1.821	Hkf	N	35			49°15'3.437"N, 16°34'25.388"E
Asteraceae	<i>Bellis sylvestris</i> [*]	3991	4	998				Gf	G	35	no	rhizome	
Asteraceae	<i>Helianthus annuus</i>	5965	2	2983	0.57	Epipremnum aureum	0.763	Tf	N	36			Cultivated plants of unknown origin
Asteraceae	<i>Helianthus debilis</i> ⁺	7156	2	3578				Tf	N	36			
Asteraceae	<i>Helianthus niveus</i> ⁺	7139	2	3570				Hkf	N	36			
Asteraceae	<i>Helianthus petiolaris</i> ⁺	6695	2	3347				Tf	N	36			
Asteraceae	<i>Helianthus tuberosus</i>	20032	6	3339	0.98	Epipremnum aureum	2.563	Gf	G	36	no	tuber	Botanical garden Masaryk Univ. Brno
Asteraceae	<i>Bidens frondosa</i> ⁺	3130	4	783				Tf	N	37			
Asteraceae	<i>Bidens radiata</i>	4216	4	1054	1.96	Pisum sativum	0.538	Tf	N	37			49°11'5.205"N, 14°52'20.117"E
Asteraceae	<i>Dahlia pinnata</i>	8450	8	1056	2.50	Ruscus aculeatus	0.420	Gf	G	37	no	root	Cultivated plants of unknown origin
Asteraceae	<i>Cosmos atrosanguineus</i> ⁺	14352	4	3588				Gf	G	38	no	root	
Asteraceae	<i>Cosmos bipinnatus</i> ⁺	3032	2	1516				Tf	N	38			
Asteraceae	<i>Cosmos sulphureus</i> ⁺	5868	2	2934				Tf	N	38			
Asteraceae	<i>Scorzonera austriaca</i>	9958	2	4979	0.78	Epipremnum aureum	1.274	Hkf	N	39			49°10'51.897"N, 16°43'43.260"E
Asteraceae	<i>Scorzonera mollis</i> [*]	4810	2	2405				Gf	G	39	no	tuber	
Araceae	<i>Arisaema flavum</i> [*]	9919	4	2480				Gf	G	40	no	tuber	
Araceae	<i>Pistia stratiotes</i> ⁺	568	2	284				Hf	N	40			
Araceae	<i>Homalomena rubescens</i> ⁺	17873	2	8937				Gf	G	41	no	tuber	
Araceae	<i>Philodendron erubescens</i> ⁺	10328	2	5164				Hkf	N	41			
Araceae	<i>Philodendron pinnatifidum</i> ⁺	4773	2	2387				Hkf	N	41			
Araceae	<i>Philodendron squamiferum</i> ⁺	9095	2	4548				Hkf	N	41			

Juncaginaceae	<i>Triglochin bulbosa</i> *	3453	4	863				Gf	G	42	no	bulb	
Juncaginaceae	<i>Triglochin maritima</i>	2360	4	590	2.95	Pisum sativum	0.301	Hkf	N	42			Cultivated plants of unknown origin
Nartheciaceae	<i>Narthecium ossifragum</i> *	807	2	404				Gf	G	43	no	rhizome	
Nartheciaceae	<i>Narthecium reverchonii</i>	716	2	358	0.59	Solanum lycopersicum	0.422	Hkf	N	43			Praha-Trója Botanical Garden
Asparagaceae	<i>Ruscus aculeatus</i> *	20137	2	10069				Gf	G	44	no	rhizome	
Asparagaceae	<i>Ruscus hypoglossum</i> *	15854	2	7927				Gf	G	44	no	rhizome	
Asparagaceae	<i>Ruscus hypophyllum</i> *	16475	2	8238				Gf	G	44		rhizome	
Asparagaceae	<i>Semele androgyna</i> *	11842	2	5921				Ff	N	44			
Asphodelaceae	<i>Asphodelus albus</i> *	7091	2	3546				Gf	G	45	no	root	
Asphodelaceae	<i>Asphodelus fistulosus</i>	4905	2	2452	1.61	Epipremnum aureum	0.628	Hkf	N	45			40°32.983'N, 14°54.503'E
Asphodelaceae	<i>Asphodelus microcarpus</i> *	6553	2	3277				Gf	G	45	no	root	
Poaceae	<i>Arrhenatherum elatius</i>	13897	4	3474	0.71	Epipremnum aureum	1.778	Hkf	N	46			49°15'3.181"N, 16°34'25.763"E
Poaceae	<i>Arrhenatherum palaestinum</i>	8601	2	4301	7.83	Bellis perennis	2.784	Gf	G	46	no	bulb	37°39'6.607"N, 31°57'32.908"E
Poaceae	<i>Hordeum bulbosum</i>	15232	4	3808		Epipremnum aureum	1.949	Gf	G	47	no	bulb	36°49'24.223"N, 30°33'5.267"E
Poaceae	<i>Hordeum vulgare</i> *	9780	2	4890				Tf	N	47			

Species Data marked with plus (+) were adopted from C-value database (Bennett and Leitch, 2012); data marked with asterisk (*) were adopted from the publication Veselý et al. (2012); for details on used standards and sample origin see supplementary data for that paper

CV genome size [%] coefficient of variation for genome size estimation

Used standard for newly measured species; standard used for flow cytometric measurements. For more detail see Table 1.

Ratio for newly measured species; ratio sample/standard

Ephemeroid for geophytes; if species has ephemeroid phenology

Storage organ for geophytes; the type of subterranean storage organ (tuber, bulb, thick rhizome, tuberous root)

Life-form Gf-geophyte, Hkf-hemicryptophyte, Tf-therophyte, Ff-phanerophyte, Chf-chmaephyte, Hf-hydrophyte

G/N G for geophyte, N for non-geophyte