

Appendix to the article M. N. Lomonosova, T. V. An'kova, M. S. Voronkova, E. A. Korolyuk, E. V. Banaev, M. V. Skaptsov

“Ploidy level of the representatives of Chenopodiaceae based on genome size and chromosome numbers”

Table

Origin of the populations studied with chromosome counts and genome size data

No Pop	Taxon	Collection data	2n/ Reference	Pl	DNA Pl	2C ± SD (pg)	St
1	<i>Atriplex patens</i> (Litv.) Iljin	Belarus, Minsk Region, Soligorsk district, 2 km SE Bryanchitsy, 52°52'073"N, 27°33'492"E. 19 IX 2019. T. V. An'kova s. n.	18,36/CCD B <sup>1</sup>		~ 4x	3.52 ± 0.11	P
2	<i>Atriplex patens</i> (Litv.) Iljin	Russia, Primorye Territory, Khasan district, Gamov Peninsula, Vityaz Bay, 42°35'12.99"N, 131°13'01.98"E. 7 X 2017. M. N. Lomonosova 1409b	36/this study	4x		3.6 ± 0.02	P
3	<i>Atriplex pedunculata</i> L.	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18/CCDB		~ 2x	1.27 ± 0.03	Pt
4	<i>Atriplex prostrata</i> Boucher ex DC.	Russia, Primorye Territory, Vladivostok city, Amur Bay, 43°14'03.60"N, 132°00'07.71"E. 13 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1364.	18 this study	2x		1.89 ± 0.04	P
5	<i>Atriplex prostrata</i> Boucher ex DC.	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.			~ 2x	1.71 ± 0.01	P
6	<i>A. sagittata</i> Borkh.	Russia, Novosibirsk Region, Novosibirsk, Akademgorodok, Botanical garden, 54°49'09.47"N, 83°06'18.44"E. 20 VIII 2019. M. N. Lomonosova s. n.	18/CCDB		~ 2x	2.21 ± 0.02	P
7	<i>A. sagittata</i> Borkh.	Russia, Novosibirsk Region, Novosibirsk, Akademgorodok, Seyatel' station, 54°49'09.47"N, 83°06'18.44"E. 20 VIII 2019. T. V. An'kova s. n.			~ 2x	2.16 ± 0.03	P

<sup>1</sup> CCDB (The Chromosome Counts Database (CCDB) – URL: <http://ccdb.tau.ac.il> (Accessed 30 September 2019).

No Pop	Taxon	Collection data	2n/ Reference	Pl	DNA Pl	2C ± SD (pg)	St
8	<i>Atriplex sagittata</i> Borkh.	Belarus, Minsk Region, Soligorsk district, 2 km SE Bryanchitsy, 52°52'073"N, 27°33'492"E. 19 IX 2019. T. V. An'kova s. n.			~ 2x	2.22 ± 0.03	P
9	<i>A. sibirica</i> L.	Tajikistan, Gorno-Badakhshan autonomous region, Murgab district, Chechekty, 3797 m a. s. l. 38°20'24.05"N, 74°00'53.56"E. 26 VIII 2018. E. V. Banaev, M. A. Tomoshevich s. n.	18/CCDB		~ 2x	1.68 ± 0.04	P
10	<i>A. sibirica</i> L.	Tajikistan, Gorno-Badakhshan autonomous region, Murgab district, Alichur, 3939 m a. s. l. 37°48'55.53"N, 73°32'04.46"E. 25 VIII 2018. E. V. Banaev, M. A. Tomoshevich s. n.			~ 2x	1.59 ± 0.01	P
11	<i>Atriplex tatarica</i> L.	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18, 36, 54/ CCDB		~ 2x	1.34 ± 0.01	Pt.
12	<i>Atriplex verrucifera</i> M. Bieb.	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18/CCDB		~ 2x	1.34 ± 0.1	Pt
13	<i>Axyris amaranthoides</i> L.	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.	18/CCDB		~ 2x	0.77 ± 0.02	Pt
14	<i>Bassia prostrata</i> (L.) A. J. Scott	Russia, Republic of Altai, Kosh-Agach district, 4 km NE Beltir, 1891 m a. s. l. 50.00403°N, 88.23078°E. 8 IX 2018. E. A. Korolyuk, A. Yu. Korolyuk 2	18/ this study	2x		2.33 ± 0.02	Pt
15	<i>Bassia prostrata</i> (L.) A. J. Scott	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.	18,36,54/C CDB		~ 4x	4.55 ± 0.14	P
16	<i>Bassia scoparia</i> (L.) A. J. Scott	Belarus, Minsk Region, Soligorsk district, 2 km SE Bryanchitsy, 52°52'073"N, 27°33'492"E. 19 IX 2019. T. V. An'kova s. n.	18/CCDB		~ 2x	2.14 ± 0.05	P
17	<i>Camphorosma songorica</i>	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	no data		~ 2x	3.06 ± 0.05	P
18	<i>Ceratocarpus arenarius</i> L.	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.	18/CCDB		~ 2x	1.26 ± 0.02	Pt

No Pop	Taxon	Collection data	2n/ Reference	Pl	DNA Pl	2C ± SD (pg)	St
19	<i>Chenopodium album</i> L.	Russia, Altai Territory, Rebrikha district, between Rebrikha and Rozhnev Log, 52°48'48.16"N, 81°21'32.75"E. 27 IX 2018. D. A. Krivenko 51615	54/this study	6x		3.94 ± 0.01	Gl
20	<i>Chenopodium album</i> L.	Russia, Primorye Territory, Vladivostok city, Russkiy Island, 42°57'45.19"N, 131°54'16.80"E. 5 X 2017. M. N. Lomonosova 1399.	54/this study	6x		4.1 ± 0.1	Gl
21	<i>Chenopodium album</i> L.	Russia, Primorye Territory, Nakhodka city district, vicinity of Avangard. 42°53'34.7"N, 132°43'57.1"E. 19 IX .2015. M. N. Lomonosova, I. A. Gorbunova 1225	54/this study	6x		4.07 ± 0.01	Gl
22	<i>Chenopodium betaceum</i> Andrz. ( <i>C. strictum</i> auct.)	Tajikistan, Gorno-Badakhshan autonomous region, Murgab district, Gunt, 3482 m a. s. l. 37°41'594"N, 72°27'212"E. 25 VIII 2018. E. V. Banaev, M. A. Tomoshevich s. n.	36/this study	4x		1.98 ± 0.04	Pt
23	<i>Chenopodium betaceum</i> Andrz. ( <i>C. strictum</i> auct.)	Russia, Orenburg Region, Orenburg city, 51°45'N, 55°03'E. 8 X 2016. E. Andriyanova, A16111.	36/this study	4x		2.01 ± 0.06	Gl
24	<i>Chenopodium betaceum</i> Andrz. ( <i>C. strictum</i> auct.)	Russia, Novosibirsk Region, Novosibirsk city, Akademgorodok, 54°49'36.82'N, 83°06'10.45'E. 22 IX 2014. M. N. Lomonosova 1156c	36/this study	4x		1.96 ± 0.01	Ca
25	<i>Chenopodium betaceum</i> Andrz. ( <i>C. strictum</i> auct.)	Armenia, Vayots Dzor Province, Vayk town, 39°41'30"N, 45°27'55"E. 1742 m. 23 VIII 2019. E. A. Korolyuk EK10-19.			~ 4x	1.98 ± 0.02	P
26	<i>Chenopodium frutescens</i> C.A. Mey.	Russia, Republic of Altai, Kosh-Agach district, 12 km from Ortolyk to Beltir, 1879 m a. s. l., 50.00447°N, 88.34618°E. 8 IX 2018. E. A. Korolyuk, A. Yu. Korolyuk, 600 AK	90/this study	10x		6.88 ± 0.21	Gl
27	<i>Chenopodium karoii</i> (Murr) Aellen	Tajikistan, Gorno-Badakhshan autonomous region, Murgab district, Alichur, 3939 m a. s. l. 37°48'55.53"N, 73°32'04.46"E. 25 VIII 2018. E. V. Banaev, M. A. Tomoshevich s. n.	36/this study	4x		2.62 ± 0.07	Pt
28	<i>Chenopodium luteorubrum</i> Mandák et Lomon.	Russia, Primorye Territory, Khasan district, Gamov Peninsula, Telyakovskiy Bay, 42°35'12.99"N, 131°13'01.98"E. 8 X 2017. M. N. Lomonosova 1416	54/this study	6x		3.04 ± 0.04	R
29	<i>Chenopodium novopokrovskianum</i> (Aellen) Uotila	Russia, Republic of Altai, Kosh-Agach district, vicinity of Chegan-Uzun, 1743 m a. s. l., 50.069652°N, 88.411782°E. 8 IX 2018. E. A. Korolyuk, A. Yu. Korolyuk, 3EK	36/this study	4x		2.05 ± 0.03	Pt
30	<i>Chenopodium novopokrovskianum</i> (Aellen) Uotila	Kazakhstan, Almaty Region, Alakol district, vicinity of Lepsinsk, 544 m a. s. l., 45°36'N, 80°37'E. 23 VIII 2014. E. A. Korolyuk 52c.	36/this study	4x		2.02 ± 0.09	Ca

No Pop	Taxon	Collection data	2n/ Reference	Pl	DNA Pl	2C ± SD (pg)	St
31	<i>Chenopodium sosnovskyi</i> Kapeller	Armenia, Aragatsoth Province, Byurakan Observatory, 40°19'49"N, 44°16'24"E. 1400 m. 18 VIII 2019. E. A. Korolyuk EK2-19.	36/Mandák et al. 2016		~ 4x	2.25 ± 0.04	P
32	<i>Chenopodium strictum</i> Roth s. l.	Russia, Primorye Territory, Khasan district, Barabash village, Ussurisk, 43°10'N, 131°29'E. 9 X 2017. M. N. Lomonosova, 1420a	36/this study	4x		2.03 ± 0.02	Pt
33	<i>Chenopodium strictum</i> Roth s. l.	Russia, Primorye Territory, Ussuriysk city, 43°47'N, 131°58'E. 6 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1317a	36/this study	4x		1.98 ± 0.07	Ca
34	<i>Chenopodium strictum</i> Roth s. l.	Russia, Primorye Territory, Ussuriysk city district, Borisovka, 43°48'N, 131°48'E. 07 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1324c	36/this study	4x		2.05 ± 0.08	Ca
35	<i>Chenopodium strictum</i> Roth s. l.	Russia, Primorye Territory, Khasan district, Possjet Bay, Zarubino, 42°37'N, 131°05'E. 10 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1347b	36/this study	4x		2.05 ± 0.07	Ca
36	<i>Chenopodium strictum</i> Roth s. l.	Russia, Primorye Territory, 38 km NE Vladivostok, Airport Knevisi, 43°01'N, 131°54'E. 16 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1372	36/this study	4x		2.09 ± 0.07	Ca
37	<i>Chenopodium strictum</i> Roth s. l.	South Korea, South Gyeonsang Province, Namhae County, 16 km SE Namhae-gun. 34°72'N, 128°026'E. 15 X 2018. E. A. Korolyuk	36 this study	4x		2.12 ± 0.02	Pt
38	<i>Chenopodium suecicum</i> Murr	Russia, Novosibirsk Region, Novosibirsk, Nikitina str. 20 VIII 2019. M. S. Voronkova s. n.	18/CCDB		~ 2x	1.71 ± 0.04	P
39	<i>Chenopodium suecicum</i> Murr	Russia, Novosibirsk Region, Akademgorodok, 54°49'36.82'N, 83°06'10.45'E. 20 VIII 2019. T. V. An'kova s. n.			~ 2x	1.79 ± 0.06	P
40	<i>Chenopodium suecicum</i> Murr	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.			~ 2x	1.79 ± 0.06	P
41	<i>Chenopodium vachellii</i> Hook. et Arn.	Russia, Primorye Territory, Nadezhdinskoe district, Razdolnoe, 43°33'N, 131°54'E. 8 IX 2016. M. N. Lomonosova, E. A. Korolyuk 1329	36/this study	4x		2.04 ± 0.05	Ca
42	<i>Corispermum declinatum</i> Stephan ex Iljin	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18/CCDB		~ 2x	1.03 ± 0.03	Pt
43	<i>Krascheninnikovia ceratoides</i> (L.) Gueldenst.	Russia, Republic of Altai, Kosh-Agach district, vicinity of Chegan-Uzun, 1777 m a. s. l., 50.07379°N, 88.42288°E. 8 IX 2018. E. A. Korolyuk, A. Yu. Korolyuk, 9EK	36/this study	4x		5.14 ± 0.03	Sl

No Pop	Taxon	Collection data	2n/ Reference	Pl	DNA Pl	2C ± SD (pg)	St
44	<i>Krascheninnikovia ceratoides</i> (L.) Gueldenst.	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.			~ 4x	4.79 ± 0.20	Sl
45	<i>Oxybasis chenopodioides</i> (L.) Fuentes, Uotila et Borsch	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18/CCDB		~ 2x	0.91 ± 0.02	P
46	<i>Oxybasis glauca</i> (L.) Fuentes, Uotila et Borsch	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	18, 36/CCDB		~ 2x	0.79 ± 0.03	Pt
47	<i>Oxybasis gubanovii</i> (Sukhor.) Fuentes, Uotila et Borsch	Russia, Republic of Altai, Kosh-Agach district, vicinity of Chegan-Uzun, 1767 m a. s. l., 50.0735°N, 88.4132°E. 9 IX 2018. E. A. Korolyuk, A. Yu. Korolyuk, 12EK	18/this study	2x		0.95 ± 0.03	Pt
48	<i>Oxybasis rubra</i> (L.) Fuentes, Uotila et Borsch	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m a. s. l. 20 VII 2019 T. V. An'kova s. n.	36, 18/CCDB		~ 4x	1.70 ± 0.06	P
49	<i>Salsola collina</i> Pall.	Russia, Novosibirsk Region, Ordynskoe district, Antonovo, 54°05'08.54"N, 81°20'49.13"E. 7 VIII 2019. T. V. An'kova, M. S. Voronkova s. n.	18/CCDB		~ 2x	1.53 ± 0.03	P
50	<i>Spirobassia hirsuta</i> (L.) Freitag et G. Kadereit	Russia, Altai Territory, Zavyalovo district, Chistoozerka, solonchak 52°46'28.58"N, 80°49'26.36"E, 155 m. 20 VII 2019 T. V. An'kova s. n.	18/CCDB		~ 2x	1.98 ± 0.10	P

Note. 2C: relative DNA content in nuclei with chromosome number 2n; pg: picogram, a unit of mass equal to 10–12 grams. Pl: ploidy level according to chromosome number; DNA Pl: ploidy level according to genome size; St: standards (*Ca* – *Chenopodium album*, *Gl* – *Glycine max* 'Polanka', *P* – *Pisum sativum* 'Ctirad', *Pt* – *Petroselinum crispum*, *R* – *Raphanus sativus* 'Saxa', *Sl* – *Solanum lycopersicum* 'Stupické polní rané').