

Seed morphology of *Allium* L. (Amaryllidaceae) from central Asian countries and its taxonomic implications

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Table S1. Macro- and micro-morphological characteristics of seed in *Allium* species investigated. The asterisk (*) indicates the first known taxon from this study.

Taxon (voucher code)	Seed length (mm) Mean±SD (min–max)	Seed width (mm) Mean±SD (min–max)	L/W ratio Mean±SD	Seed shape	Anticlinal walls	Seed testa Periclinal walls	Figure
subg. <i>Allium</i>							
sect. <i>Allium</i>							
<i>A. filidens</i> (100)*	3.27±0.24 (2.76–3.80)	2.33±0.18 (1.94–2.71)	1.41±0.12	Oval-flattened	U-type	Some central verrucae and marginal verrucae	1A, 5A
sect. <i>Caerulea</i>							
<i>A. caesium</i> (101a)	2.81±0.11 (2.56–3.01)	1.36±0.11 (1.20–1.58)	2.08±0.15	Elliptical-angular	U-type	Densely prominent granules	1B, 5B
<i>A. caesium</i> (101b)	1.88±0.11 (1.69–2.07)	1.34±0.09 (1.15–1.51)	1.41±0.11	Oval-angular	U-, Ω-type	Several large verrucae with small verrucae	1C, 5C
<i>A. caeruleum</i> (102)	2.40±0.10 (2.19–2.61)	1.65±0.09 (1.48–1.85)	1.46±0.09	Oval-angular	U-, Ω-type	Central verrucae and marginal verrucae	1D, 5D
<i>A. svetlanae</i> (103)*	2.59±0.29 (2.28–2.93)	2.12±0.14 (1.95–2.31)	1.22±0.07	Oval-spherical	U-type	Several verrucae and marginal verrucae	1E, 5E
<i>A. tatyanae</i> (104)*	2.04±0.21 (1.67–2.54)	1.13±0.09 (0.96–1.32)	1.81±0.14	Oval-angular	Irregularly-curved	Densely prominent granules	1F, 5F
sect. <i>Mediasia</i>							
<i>A. turkestanicum</i> (105)*	3.49±0.30 (2.96–4.06)	2.94±0.40 (2.33–3.65)	1.20±0.12	Oval-spherical	S-type	Large verrucae	1G, 5G
sect. <i>Minuta</i>							
<i>A. anisotepalum</i> (106)*	2.10±0.08 (1.89–2.26)	1.06±0.08 (0.83–1.15)	2.00±0.15	Elliptical-flattened	Irregularly-curved	Many small verrucae with granules	1H, 5H
sect. <i>Pallasia</i>							
<i>A. pallasii</i> (107)	2.89±0.12 (2.65–3.09)	1.75±0.10 (1.53–2.02)	1.66±0.11	Oval-angular	U-type	Densely prominent granules	1I, 5I
subg. <i>Butomissa</i>							
sect. <i>Austromotana</i>							
<i>A. oreoprasum</i> (108)	4.08±0.23 (3.26–4.41)	2.11±0.12 (1.93–2.44)	1.94±0.14	Oval-angular	Irregularly-curved	Many small verrucae with marginal granules	1J, 5J
sect. <i>Butomissa</i>							
<i>A. ramosum</i> (109)	3.42±0.23 (2.89–3.78)	2.71±0.24 (2.16–3.03)	1.27±0.10	Oval-hemispherical	Irregularly-curved to nearly-straight	Densely granules	1K, 5K
subg. <i>Cepa</i>							

sect. <i>Annuloprason</i>							
<i>A. fedschenkoanum</i> (110)*	4.47±0.43 (3.63–5.49)	1.99±0.29 (1.50–2.82)	2.27±0.29	Elliptical-angular	Straight	Colliculose cellular center and verrucae	1L, 5L
sect. <i>Cepa</i>							
<i>A. altaicum</i> (111)*	3.51±0.12 (3.22–3.75)	2.23±0.12 (1.92–2.46)	1.57±0.07	Oval-angular	Straight	Densely granules	1M, 5M
<i>A. galanthum</i> (112)	4.03±0.10 (3.72–4.17)	2.33±0.09 (2.08–2.49)	1.74±0.06	Oval-angular	Straight	Densely granules	1N, 5N
<i>A. oschaninii</i> (113)	3.86±0.17 (3.56–4.26)	2.49±0.13 (2.28–2.81)	1.56±0.08	Oval-angular	Straight	Several verrucae and marginal small verrucae	1O, 5O
sect. <i>Schoenoprasum</i>							
<i>A. maximowiczii</i> (114)	2.23±0.09 (2.02–2.37)	1.12±0.07 (0.98–1.28)	2.01±0.11	Elliptical-angular	Straight	Several small verrucae with densely granules	1P, 6A
subg. <i>Melanocrommyum</i>							
sect. <i>Acmopetala</i>							
<i>A. saposhnikovii</i> (115)	2.72±0.12 (2.51–2.95)	1.80±0.10 (1.56–1.94)	1.52±0.07	Oval-angular	U-, Ω-type	A central verrucate verruca or rarely few verrucae	2A, 6B
sect. <i>Kaloprason</i>							
<i>A. alexeianum</i> (116)	2.56±0.23 (2.24–3.12)	2.12±0.21 (1.71–2.56)	1.22±0.08	Oval-hemispherical	U-, Ω-type	A large central verruca	2B, 6C
<i>A. caspium</i> (117)	2.66±0.16 (2.34–3.15)	2.36±0.22 (1.96–2.89)	1.14±0.11	Oval-hemispherical	U-, Ω-type	Large verrucate verrucae	2C, 6D
<i>A. protensum</i> (118)	3.05±0.17 (2.65–3.52)	2.53±0.23 (2.02–3.12)	1.21±0.13	Oval-spherical	U-, Ω-type	A big central verrucate verruca and marginal small verrucae	2D, 6E
sect. <i>Miniprasum</i>							
<i>A. karataviense</i> (119)	4.36 ± 0.19 (4.01–4.89)	3.44 ± 0.23 (3.05–3.88)	1.27±0.07	Oval-hemispherical	S-, U-type	Prominent verrucae	2E, 6F
sect. <i>Procerallium</i>							
<i>A. altissimum</i> (120)	2.98±0.21 (2.66–3.74)	2.65±0.18 (2.35–3.22)	1.13±0.06	Oval-spherical	S-type	Several big verrucae	2F, 6G
<i>A. stipitatum</i> (121)	3.84±0.39 (3.01–4.62)	2.96±0.26 (2.47–3.50)	1.30±0.12	Oval-hemispherical	U-, Ω-type	Several big verrucae	2G, 6H
sect. <i>Stellata</i>							
<i>A. taeniopetalum</i> (122)*	3.38±0.21 (2.83–4.06)	2.62±0.18 (2.32–2.95)	1.30±0.11	Oval-hemispherical	U-, Ω-type	Several prominent verrucae	2H, 6I
sect. <i>Verticillata</i>							
<i>A. viridiflorum</i> (123)	1.89±0.17 (1.58–2.23)	1.45±0.10 (1.22–1.61)	1.31±0.09	Oval-hemispherical	Irregularly-curved	Densely prominent granules	2I, 6J
subg. <i>Polyprason</i>							

sect. <i>Falcatifolia</i>							
<i>A. carolinianum</i> (124)	3.78±0.11 (3.59–4.01)	1.87±0.16 (1.53–2.16)	2.03±0.18	Elliptical-angular	Straight	Densely indistinct granules	2J, 6K
<i>A. hymenorrhizum</i> (125)	3.77±0.24 (3.45–4.50)	1.95±0.11 (1.69–2.22)	1.93±0.15	Oval-flattened	Straight	A central verruca and several marginal small verrucae	2K, 6L
<i>A. platyspathum</i> subsp. <i>amblyophyllum</i> (126a)	3.30±0.14 (2.97–3.58)	1.98±0.21 (1.49–2.35)	1.69±0.16	Oval-angular	Straight	Densely indistinct granules	2L, 6M
<i>A. platyspathum</i> subsp. <i>amblyophyllum</i> (126b)	3.84±0.12 (3.63–4.04)	2.09±0.11 (1.70–2.25)	1.84±0.10	Oval-angular	Straight	Densely indistinct granules	6N
<i>A. platyspathum</i> subsp. <i>platyspathum</i> (127)	3.58±0.34 (3.14–4.24)	1.90±0.14 (1.62–2.14)	1.89±0.20	Oval-angular	Straight	Densely indistinct granules	2M, 6O
<i>A. korolkowii</i> (128)	2.82±0.16 (2.46–3.07)	1.44±0.14 (1.07–1.62)	1.98±0.16	Oval-angular	Straight	Small verrucae	2N, 7A
sect. <i>Oreiprason</i>							
<i>A. obliquum</i> (129)	3.61±0.17 (3.27–3.97)	1.73±0.11 (1.53–1.91)	2.09±0.12	Elliptical-angular	Straight	Small verrucae with densely granules	2O, 7C
<i>A. petraeum</i> (130)*	3.27±0.17 (2.92–3.55)	1.80±0.13 (1.47–2.03)	1.83±0.17	Oval-angular	Straight	Several granules	2P, 7D
<i>A. tianschanicum</i> (131)	3.91±0.12 (3.60–4.08)	2.27±0.16 (1.89–2.90)	1.73±0.10	Oval-angular	Straight	Indistinct verrucae or granules	2Q, 7E
<i>A. kirilovii</i> (132)*	3.08±0.52 (2.59–3.94)	1.50±0.14 (1.24–1.67)	2.08±0.44	Elliptical-angular	Straight	Densely prominent granules	3A, 7B
subg. <i>Reticulato bulbosa</i>							
sect. <i>Campanulata</i>							
<i>A. barszczewskii</i> (133)	3.87±0.15 (3.49–4.07)	1.74±0.09 (1.54–1.88)	2.23±0.10	Elliptical-flattened	Straight	A central verrucate verruca and marginal verrucae	3B, 7F
<i>A. dolichostylum</i> (134)*	3.69±0.18 (3.29–3.98)	1.96±0.08 (1.87–2.17)	1.88±0.08	Oval-flattened	Straight	A central verrucate verruca and marginal small verrucae	3C, 7G
<i>A. jodanthum</i> (135)*	3.93±0.25 (3.43–4.31)	1.85±0.14 (1.63–2.17)	2.13±0.18	Elliptical-flattened	Straight	Granulate verrucae and several prominent granules	3D, 7H
sect. <i>Reticulato bulbosa</i>							
<i>A. amphibolum</i> (136a)*	3.54±0.11 (3.27–3.84)	1.64±0.08 (1.43–1.77)	2.16±0.12	Elliptical-angular	Straight	Densely granules	3E, 7I
<i>A. amphibolum</i> (136b)*	3.44±0.12 (3.22–3.81)	1.45±0.07 (1.41–1.74)	2.14±0.12	Elliptical-angular	Straight	Usually a granulate central verruca and marginal	7J

<i>A. clathratum</i> (137)*	3.29±0.27 (2.79–3.93)	1.43±0.10 (1.24–1.67)	2.31±0.20	Elliptical-angular	Straight	granules Usually a granulate central verruca and marginal granules	3F, 7K
<i>A. leucocephalum</i> (138)*	2.72±0.17 (2.47–3.07)	1.30±0.08 (1.16–1.54)	2.09±0.13	Elliptical-angular	Straight	Densely granules	3G, 7L
<i>A. malyshevii</i> (139)*	3.46±0.23 (3.00–3.77)	1.58±0.18 (1.24–1.87)	2.22±0.24	Elliptical-angular	Straight	Several granulate verrucae, densely granules	3H, 7M
<i>A. strictum</i> (140)	3.12±0.21 (2.39–3.41)	1.47±0.09 (1.27–1.68)	2.12±0.15	Elliptical-angular	Straight	A central large granulate verruca and densely granules	3I, 7N
sect. <i>Scabriscapa</i>							
<i>A. trachyscordum</i> (141)*	3.18±0.18 (2.92–3.93)	2.35±0.14 (2.05–2.75)	1.36±0.08	Oval-angular	Straight	A central large verruca and marginal small verrucae	3J, 7O
subg. <i>Rhizirideum</i>							
sect. <i>Caespitosoprason</i>							
<i>A. bidentatum</i> (142)	2.45±0.21 (1.99–2.85)	1.63±0.17 (1.31–1.87)	1.51±0.12	Oval-angular	Straight	Densely prominent granules	3K, 8A
<i>A. polyrhizum</i> (143)	2.90±0.14 (2.54–3.16)	1.74±0.16 (1.48–2.02)	1.67±0.14	Oval-angular	Straight	Densely indistinct granules	3L, 8B
sect. <i>Rhizirideum</i>							
<i>A. austrosibiricum</i> (144)*	2.63±0.15 (2.11–2.96)	1.72±0.12 (1.54–2.04)	1.54±0.13	Oval-hemispherical	Straight	Densely prominent granules	3M, 8C
sect. <i>Tenuissima</i>							
<i>A. anisopodium</i> (145)	2.39±0.10 (2.20–2.62)	1.55±0.10 (1.33–1.72)	1.55±0.11	Oval-angular	S-type	Densely granules	3N, 8D
<i>A. tenuissimum</i> (146)	1.74±0.16 (1.56–1.94)	1.34±0.14 (1.20–1.58)	1.31±0.13	Oval-angular	S-type	Densely granules	3O, 8E
<i>A. vodopjanovae</i> (147)	2.36±0.22 (1.85–2.76)	1.53±0.19 (1.19–1.96)	1.56±0.15	Oval-angular	S-type	Densely granules	3P, 8F

Table S2. Voucher specimen information of *Allium* species investigated. All voucher specimens were deposited at the herbarium of Changwon National University.

Subgenus/Section	Taxon	Voucher information
<i>Allium</i> / <i>Allium</i>	<i>A. filidens</i> Regel	Uzbekistan: Chatkal Mountain Shavassay, 16 Jul 2016, <i>H.J. Choi et al.</i> 100
<i>Allium</i> / <i>Caerulea</i>	<i>A. caesium</i> Schrenk	Uzbekistan: Tashkent Botanical Garden, 26 May 2015, <i>H.J. Choi et al.</i> 101a
<i>Allium</i> / <i>Caerulea</i>	<i>A. caesium</i>	Kyrgyzstan: Gornolyzhnyy Kurort "Politekh", 02 Aug 2017, <i>H.J. Choi et al.</i> 101b
<i>Allium</i> / <i>Caerulea</i>	<i>A. caeruleum</i> Pall.	Uzbekistan: ZX10, Tashkent Botanical Garden, 14 Jul 2017, <i>H.J. Choi et al.</i> 102
<i>Allium</i> / <i>Caerulea</i>	<i>A. svetlanae</i> Vved. ex Filim	Uzbekistan: Samarkand region, Naratau, 07 Jul 2016, <i>H.J. Choi et al.</i> 103
<i>Allium</i> / <i>Caerulea</i>	<i>A. tatyanae</i> F.O. Khass. & F. Karimov	Uzbekistan: Namangan city, Yangikurgan, Hill of Ungoe, 24 May 2015, <i>H.J. Choi et al.</i> 104
<i>Allium</i> / <i>Mediasia</i>	<i>A. turkestanicum</i> Regel	Uzbekistan: Nuratau region, Tashkent Botanical Garden 3/G/5, 28 Aug 2014, <i>H.J. Choi et al.</i> 105
<i>Allium</i> / <i>Minuta</i>	<i>A. anisotepalum</i> Vved.	Uzbekistan: Namangan city, Yangikurgan, Hill of Ungoe, 24 May 2015, <i>H.J. Choi et al.</i> 106
<i>Allium</i> / <i>Pallasia</i>	<i>A. pallasii</i> Murray	Kyrgyzstan: Kara-balta river, 14 Jul 2017, <i>H.J. Choi et al.</i> 107
<i>Butomissa</i> / <i>Austromotana</i>	<i>A. oreoprasum</i> Schrenk	Kyrgyzstan: 7 km north-northwestward from Too-Ashuu, 04 Aug 2017, <i>H.J. Choi et al.</i> 108
<i>Butomissa</i> / <i>Butomissa</i>	<i>A. ramosum</i> L.	Mongolia: Tuv province, Hustai National Park, 11 Aug 2016, <i>H.J. Choi et al.</i> 109
<i>Cepa</i> / <i>Annuloprason</i>	<i>A. fedschenkoanum</i> Regel	Kyrgyzstan: 2 km northwest side from Baytur Resort, 02 Aug 2017, <i>H.J. Choi et al.</i> 110
<i>Cepa</i> / <i>Cepa</i>	<i>A. altaicum</i> Pall.	Mongolia: Khovd province, Munkhkhairkhan, Senkheriin khavtsal, 25 Jul 2016, <i>H.J. Choi et al.</i> 111
<i>Cepa</i> / <i>Cepa</i>	<i>A. galanthum</i> Kar. & Kir.	Kyrgyzstan: 2 km west from Krasnyy Village, 03 Aug 2017, <i>H.J. Choi et al.</i> 112
<i>Cepa</i> / <i>Cepa</i>	<i>A. oschaninii</i> O. Fedtsch.	Uzbekistan: Tashkent Botanical Garden, 14 Jul 2017, <i>H.J. Choi et al.</i> 113
<i>Cepa</i> / <i>Schoenoprasum</i>	<i>A. maximowiczii</i> Regel	Mongolia: Dornod province, Khalkh gol Sum, Sumiin Khooloi, 18 Jul 2017, <i>H.J. Choi et al.</i> 114
<i>Melanocrommyum</i> / <i>Acmopetala</i>	<i>A. saposhnikovii</i> Nikitina	Kyrgyzstan: 7km south side of Jergalan, 30 Jun 2018, <i>H.J. Choi et al.</i> 115
<i>Melanocrommyum</i> / <i>Kaloprason</i>	<i>A. alexeianum</i> Regel	Uzbekistan: Qashqadaryo province, Qamashi Tumani, Majdanak, 05 Sept 2015, <i>H.J. Choi et al.</i> 116
<i>Melanocrommyum</i> / <i>Kaloprason</i>	<i>A. caspium</i> (Pall.) M. Bieb.	Uzbekistan: Tashkent Botanical Garden (S14), 17 Jun 2017, <i>H.J. Choi et al.</i> 117
<i>Melanocrommyum</i> / <i>Kaloprason</i>	<i>A. protensum</i> Wendelbo	Uzbekistan: Nurate, 11 May 2015, <i>H.J. Choi et al.</i> 118
<i>Melanocrommyum</i> / <i>Miniprasum</i>	<i>A. karataviense</i> Regel	Uzbekistan: Yangiabad Ferganya Valley, 11 May 2015, <i>H.J. Choi et al.</i> 119
<i>Melanocrommyum</i> / <i>Procerallium</i>	<i>A. altissimum</i> Regel	Uzbekistan: Nurati vit, 11 May 2015, <i>H.J. Choi et al.</i> 120
<i>Melanocrommyum</i> / <i>Procerallium</i>	<i>A. stipitatum</i> Regel	Uzbekistan: Qashqadaryo province, Rode (M39), 05 Sep 2015, <i>H.J. Choi et al.</i> 121
<i>Melanocrommyum</i> / <i>Stellata</i>	<i>A. taeniopetalum</i> Popov & Vved.	Uzbekistan: Jizzakh Pistali tau, 11 May 2015, <i>H.J. Choi et al.</i> 122
<i>Melanocrommyum</i> / <i>Verticillata</i>	<i>A. viridiflorum</i> Pobed.	Uzbekistan: Yangikurgan region Pozamon Chatkal range, 14 Jul 2017, <i>H.J. Choi et al.</i> 123
<i>Polyprason</i> / <i>Falcatifolia</i>	<i>A. carolinianum</i> DC.	Kyrgyzstan: Kara-balta river, 06 Jul 2016, <i>H.J. Choi et al.</i> 124
<i>Polyprason</i> / <i>Falcatifolia</i>	<i>A. hymenorrhizum</i> Ledeb.	Kyrgyzstan: 1 km south side from Baytur Resort, 01 Aug 2017, <i>H.J. Choi et al.</i> 125
<i>Polyprason</i> / <i>Falcatifolia</i>	<i>A. platyspathum</i> subsp.	
<i>Polyprason</i> / <i>Falcatifolia</i>	<i>amblyophyllum</i> (Kar. & Kir.) N. Friesen	Kyrgyzstan: 4 km east side from Baytur Resort, 01 Aug 2017, <i>H.J. Choi et al.</i> 126a
<i>Polyprason</i> / <i>Falcatifolia</i>	<i>A. platyspathum</i> subsp.	Mongolia: Bayan-Ulgii province, Sagsai sum, Songiniin Gol, 18 Jun 2018, <i>H.J. Choi et al.</i> 126b

	<i>amblyophyllum</i>	
<i>Polyprason/Falcatifolia</i>	<i>A. platyspathum</i> subsp. <i>platyspathum</i>	Kyrgyzstan: 13 km south side from Jergalan, 30 Jun 2018, <i>H.J. Choi et al.</i> 127
<i>Polyprason/Falcatifolia</i>	<i>A. korolkowii</i> Regel	Uzbekistan: Cholpon Ata, 10 Jul 2016, <i>H.J. Choi et al.</i> 128
<i>Polyprason/Oreiprason</i>	<i>A. kirilovii</i> N. Friesen & Seregin	Kyrgyzstan: 2 km northwest side from Baytur Resort, 03 Aug 2017, <i>H.J. Choi et al.</i> 129
<i>Polyprason/Oreiprason</i>	<i>A. obliquum</i> L.	Kyrgyzstan: the Narin mountain, north makroclone, Narin NES, 10 Aug 2014, <i>G.A. Lazkov</i> 130
<i>Polyprason/Oreiprason</i>	<i>A. petraeum</i> Kar. & Kir.	Kyrgyzstan: Gornolyzhnyy Kurort "Politekh" 02 Aug 2017, <i>H.J. Choi et al.</i> 131
<i>Polyprason/Oreiprason</i>	<i>A. tianschanicum</i> Rupr.	Kyrgyzstan: 7km north-northwestward from Too-Ashuu, 04 Aug 2017, <i>H.J. Choi et al.</i> 132
<i>Reticulobulbosa/Campanulata</i>	<i>A. barsczewskii</i> Lipsky	Uzbekistan: Yangikurgan region Pozamon Chatkal range, 14 Jul 2017, <i>H.J. Choi et al.</i> 133
<i>Reticulobulbosa/Campanulata</i>	<i>A. dolichostylum</i> Vved.	Kyrgyzstan: Sary-chlek, Chatkal range, 11 Aug 2016, <i>G.A. Lazkov</i> 134
<i>Reticulobulbosa/Campanulata</i>	<i>A. jodanthum</i> Vved.	Uzbekistan: Yangiabed, 02 Jul 2016, <i>H.J. Choi et al.</i> 135
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. amphibolum</i> Ledeb.	Mongolia: Khovd province, Munkhkhairkhan, Senkheriin khavtsal, 25 Jul 2016, <i>Sh. Baasanmunkh et al.</i> 136a
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. amphibolum</i>	Mongolia: Bayan-Ulgii province, Sagsai sum, Songiniin Gol, 18 Jun 2018, <i>Sh. Baasanmunkh et al.</i> 136b
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. clathratum</i> Ledeb.	Mongolia: Khovd province, Munkhkhairkhan, Senkheriin khavtsal, 27 Jul 2016, <i>Sh. Baasanmunkh et al.</i> 137
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. leucocephalum</i> Turcz. ex Ledeb.	Mongolia: Tuv province, Hustai National Park, 11 Aug 2016, <i>Sh. Baasanmunkh et al.</i> 138
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. malyshevii</i> N. Friesen	Mongolia: Khuvsgul province, Khatgal sum, Khuvsgul Lake, 15 Jul 2015, <i>Sh. Baasanmunkh et al.</i> 139
<i>Reticulobulbosa/Reticulobulbosa</i>	<i>A. strictum</i> Schrad.	Mongolia: Khuvsgul province, Khatgal sum, Khuvsgul Lake, 17 Jul 2015, <i>Sh. Baasanmunkh et al.</i> 140
<i>Reticulobulbosa/Scabriscapa</i>	<i>A. trachyscordum</i> Vved.	Kyrgyzstan: 35 km southeast side from Novovoznesenovka, 30 Jun 2018, <i>H.J. Choi et al.</i> 141
<i>Rhizirideum/Caespitosoprason</i>	<i>A. bidentatum</i> Fisch. ex Prokh.	Mongolia: Tuv province, Hustai National Park, 11 Aug 2016, <i>H.J. Choi et al.</i> 142
<i>Rhizirideum/Caespitosoprason</i>	<i>A. polyrhizum</i> Turcz. ex Regel	Mongolia: Govisumber province, Shivee-Ovoo, 21 Aug 2016, <i>Sh. Baasanmunkh et al.</i> 143
<i>Rhizirideum/Rhizirideum</i>	<i>A. austrosibiricum</i> N. Friesen	Mongolia: Khovd province, Munkhkhairkhan, Khuren khesuu, 30 Jul 2016, <i>H.J. Choi et al.</i> 144
<i>Rhizirideum/Tenuissima</i>	<i>A. anisopodium</i> Ledeb.	Mongolia: Khovd province, Mankhan sum, 3 tsenkheriin agui, 31 Jul 2016, <i>H.J. Choi et al.</i> 145
<i>Rhizirideum/Tenuissima</i>	<i>A. tenuissimum</i> L.	Mongolia: Khentii province, 25 km from Berkh sum, 11 Jul 2017, <i>H.J. Choi et al.</i> 146
<i>Rhizirideum/Tenuissima</i>	<i>A. vodopjanovae</i> N. Friesen	Mongolia: Khovd province, Munkhkhairkhan, Tsagaan sair, 30 Jul 2016, <i>H.J. Choi et al.</i> 147