Vojtěchová K., Kobrlová L., Schönswetter P. & Duchoslav M. (2023) Disentangling the taxonomic structure of the *Allium paniculatum* species complex in central and eastern Europe using molecular, cytogenetic and morphological tools. – Preslia 95: 119–163.

Supplementary Table S6. – Descriptive statistics of all quantitative characters and their ratios (mean±standard deviation; minimum, 10% and 90% quantile, and maximum) for the taxonomic groups, including common di- and rare triploids recorded in *A. podolicum* and *A. marginatum*. Linear models (LM) with taxonomic category as fixed effect factor, with accounting a different variance in each group, were used for comparison of means of each character among groups, except for one case where Kruskal-Wallis test was applied. Descriptive statistics based on the original (untransformed) values are presented in the table. Bonferroni correction was applied additionally on raw P values and those remaining significant ($P \leq 0.001$) are indicated by boldface. LM were also recalculated with all triploids excluded from taxonomic groups and if any changes in significance of the tests with and without including triploids were detected, they are reported. Bonferroni multiple comparison test was used after a significant result of LM; different letters row-wise indicate significant differences between groups at $P \leq 0.05$. Abbreviations of each character are added before the name of the respective character (first column).

Character	*A. fuscum*	*A. marginatum*	*A. podolicum*	*A. paniculatum*	F	P
Vegetative morphological characters						
plHwS: plant height without spathe (cm)	32.8 ±8.4[a] (15.5-) 20.9-44.8 (-50.6)	40.1±10.0[b] (22.5-) 26.7-54.0 (-66.0)	36.7±8.8[ab#] (16.0-) 24.1-47.1 (-48.0)	33.1±9.2[a#] (16.6-) 22.8-47.8 (-50.0)	**4.40**	**0.009**
plH: plant height incl. spathe (cm)	47.8 ±12.5[a] (21.5-) 28.3-65.1 (-66.7)	56.1±13.4[b] (28.5-) 40.6-72.7 (-93.5)	56.0±13.5[a] (19.2-) 34.7-70.5 (-70.5)	48.7±10.8[a] (27.5-) 33.3-67.5 (-67.5)	3.42	0.026[$]
nrL: number of leaves	4.5 ±0.9 (3.0-) 3.5-6.0 (-7.0)	4.9±0.9 (4.0-) 4.0-6.0 (-7.0)	4.4±1.0 (3.0-) 3.0-6.0 (-6.0)	4.8±0.6 (4.0-) 4.0-6.0 (-6.0)	5.58[§]	0.134
l1L: uppermost leaf length (cm)	21.3±5.6[ab] (12.2-) 13.5-28.5 (-36.0)	23.7±5.8[a] (10.0-) 17.7-29.4 (-43.2)	24.4±6.5[a#] (8.6-) 13.9-31.7 (-33.4)	19.8±4.1[b#] (13.5-) 14.0-26.3 (-26.7)	3.98	0.014
l2L: 2nd uppermost leaf length (cm)	23.1±5.6[a] (14.0-) 17.3-30.8 (-39.6)	24.1±4.2[a] (14.6-) 18.5-29.2 (-35.0)	24.8±5.9[a] (15.5-) 15.5-35.8 (-36.0)	19.6±3.5[b] (12.5-) 14.7-24.8 (-25.8)	**7.04**	**<0.001**
w1L: uppermost leaf width (mm)	3.5±1.0[a] (1.7-) 1.8-5.0 (-5.7)	2.7±0.8[b] (1.4-) 2.1-3.4 (-7.0)	1.9±0.4[c] (1.1-) 1.4-2.6 (-2.7)	1.8±0.4[c] (1.3-) 1.4-2.3 (-2.8)	**27.50**	**<0.001**
w2L: 2nd uppermost leaf width (mm)	4.3±1.2[a] (2.0-) 2.4-5.7 (-7.5)	3.1±0.6[b] (2.2-) 2.4-3.9 (-5.2)	2.2±0.6[c] (0.8-) 1.5-3.2 (-3.3)	2.0±0.4[c] (1.3-) 1.5-2.5 (-2.8)	**45.10**	**<0.001**
lLSpV: longer spathe valve length (cm)	16.9±4.7 (10.3-) 11.3-26.1 (-26.6)	16.3±4.3 (9.2-) 11.0-22.0 (-26.0)	19.4±5.5 (3.2-) 10.9-25.7 (-27.0)	15.8±3.8 (10.6-) 11.0-23.2 (-24.5)	1.83	0.157
lSSpV: shorter spathe valve length (cm)	9.7±3.0[a] (4.6-) 6.5-14.8 (-17.9)	9.4±2.6[a] (4.6-) 6.0-12.8 (-17.0)	12.3±4.4[b#] (2.0-) 6.0-18.6 (-19.0)	9.4±3.1[a#] (4.4-) 5.4-15.2 (-17.0)	3.29	0.031[$]
papB: density of papillae per 2 mm of leaf margin at the base of the 2nd uppermost leaf	9.1±6.9[a] (0.0-) 0.0-19.0 (-25.0)	3.2±5.0[b] (0.0-) 0.0-11.8 (-18.0)	4.2±4.8[b] (0.0-) 0.0-12.0 (-12.0)	2.6±4.1[b] (0.0-) 0.0-10.2 (-12.0)	**5.22**	0.004
papC: density of papillae per 2 mm of leaf margin in the middle of the 2nd uppermost leaf	13.4±6.1[a] (0.0-) 4.0-22.5 (-26.0)	7.2±6.4[b] (0.0-) 0.0-15.0 (-26.0)	3.8±4.5[c] (0.0-) 0.0-9.3 (-12.0)	3.0±4.7[c] (0.0-) 0.0-10.4 (-14.0)	**15.54**	**<0.001**
Generative morphological characters						
nrF: number of flowers	77.9±40.0 (24.0-) 28.5-142.0 (-162.0)	92.3±32.9 (30.0-) 46.8-133.8 (-164.0)	77.8±36.3 (11.0-) 19.0-123.0 (-152.0)	70.0±37.2 (32.0-) 32.0-141.6 (-156.0)	2.26	0.096
lPed: pedicel length (cm)	2.3±0.6[a] (1.4-) 1.6-3.0 (-3.7)	2.6±0.5[ab] (1.7-) 2.0-3.3 (-3.7)	3.0±0.9[b#] (1.5-) 1.6-4.3 (-5.1)	2.4±0.6[a#] (1.7-) 1.8-3.5 (-4.0)	3.02	0.042[$]
lExT: external tepal length (mm)	5.7±0.5 (5.0-) 5.1-6.4 (-6.9)	5.6±0.3 (4.8-) 5.2-6.1 (- 6.2)	5.8±0.3 (5.3-) 5.4-6.2 (-6.3)	5.7±0.4 (5.1-) 5.1-6.2 (-6.4)	1.28	0.295

lInT: internal tepal length (mm)	5.8±0.5 (5.2-) 5.3-6.6 (-6.7)	5.7±0.3 (5.0-) 5.2-6.1 (-6.3)	5.6±0.2 (5.3-) 5.3-5.9 (-6.0)	5.7±0.4 (5.1-) 5.2-6.1 (-6.2)	1.03	0.390
wExT: external tepal width (mm)	2.4±0.2^{a} (2.0-) 2.1-2.7 (-2.8)	2.2±0.2^{b} (1.8-) 2.0-2.4 (-2.6)	2.4±0.2^{a} (2.0-) 2.2-2.7 (-2.7)	2.5±0.2^{a} (2.2-) 2.3-2.8 (-3.0)	**12.48**	**<0.001**
wInT: internal tepal width (mm)	2.5±0.2^{a} (2.0-) 2.2-2.7 (-2.7)	2.3±0.2^{b} (1.7-) 2.0-2.4 (-2.6)	2.4±0.3^{ab} (1.8-) 1.9-2.8 (-2.8)	2.4±0.2^{a} (2.1-) 2.2-2.6 (-2.7)	**7.26**	**<0.001**
lS: style length (mm)	2.0±0.4^{a} (1.2-) 1.5-2.6 (-2.9)	2.1±0.3^{a} (1.4-) 1.8-2.5 (-2.8)	2.5±0.4^{b} (1.8-) 1.9-3.0 (-3.1)	2.6±0.4^{b} (1.8-) 1.8-3.0 (-3.1)	**15.03**	**<0.001**
lO: ovary length (mm)	4.2±0.5^{a} (3.5-) 3.7-5.0 (-5.3)	4.1±0.4^{a} (3.2-) 3.6-4.6 (-5.0)	3.8±0.3^{b} (3.4-) 3.5-4.1 (-4.1)	3.4±0.2^{c} (3.0-) 3.1-3.7 (-4.0)	**31.11**	**<0.001**
wO: ovary width (mm)	2.3±0.2^{a} (2.0-)2.0-2.6 (-2.7)	2.0±0.2^{b} (1.6-) 1.8-2.2 (-2.5)	2.0±0.1^{ab} (1.8-) 1.8-2.2 (-2.3)	1.9±0.1^{c} (1.7-) 1.7-2.1 (-2.1)	**24.26**	**<0.001**
lF: stamen filament length (mm)	3.5±0.5 (2.5-) 2.7-4.0 (-4.4)	3.5±0.4 (2.5-) 3.0-4.0 (-4.4)	3.7±0.5 (2.7-) 2.9-4.3 (-4.4)	3.8±0.4 (3.1-) 3.4-4.3 (-4.7)	2.78	0.053
lAnt: anther length (mm)	1.3±0.2^{a} (1.0-) 1.0-1.4 (-1.7)	1.2±0.1^{b} (1.0-) 1.1-1.3 (-1.6)	1.2±0.1^{ab} (1.0-) 1.0-1.4 (-1.4)	1.2±0.1^{ab} (1.1-) 1.1-1.3 (-1.4)	3.22	0.032
wAnt: anther width (mm)	0.7±0.1 (0.6-) 0.7-0.8 (-0.9)	0.7±0.1 (0.6-) 0.7-0.8 (-0.8)	0.7±0.1 (0.6-) 0.6-0.8 (-0.8)	0.7±0.1 (0.6-) 0.6-0.8 (-0.8)	0.42	0.737
lC: capsule length (mm)	5.1±0.4^{a} (4.5-) 4.6-5.6 (-5.6)	4.8±0.4^{a} (3.5-) 4.3-5.3 (-5.6)	4.8±0.6$^{a\#}$ (3.8-) 3.9-5.8 (-5.9)	4.3±0.4$^{b\#}$ (3.4-) 3.6-4.9 (-5.0)	**8.97**	**<0.001**
wC: capsule width (mm)	4.3±0.4^{a} (3.6-) 3.7-4.9 (-5.1)	3.5±0.3^{b} (3.0-) 3.1-3.8 (-4.2)	3.5±0.4^{b} (3.0) 3.0-4.2 (-4.2)	3.2±0.4^{b} (2.5-) 2.6-3.7 (-3.8)	**25.22**	**<0.001**
lSe: seed length (mm)	3.8±0.3^{a} (3.4-) 3.4-4.2 (-4.3)	3.5±0.2^{b} (3.0-) 3.2-3.9 (-4.0)	3.5±0.3^{b} (2.9-) 2.9-3.8 (-3.8)	3.3±0.2^{b} (3.0-) 3.0-3.5 (-3.5)	**9.75**	**<0.001**
wSe: seed width (mm)	1.8±0.2^{a} (1.7-) 1.7-2.1 (-2.2)	1.5±0.1^{b} (1.2-) 1.3-1.7 (-1.9)	1.6±0.2$^{bc\#}$ (1.3-) 1.3-1.8 (-1.8)	1.4±0.1$^{c\#}$ (1.2-) 1.2-1.6 (-1.6)	**20.94**	**<0.001**
Micromorphological and anatomical characters of leaf surface and stomata (epidermal characters)						
dSto: density of stomata (number per mm^{2})	141.5±29.5^{a} (79.6-) 96.7-180.7 (-189.5)	141.9±40.6^{a} (52.9-) 79.3-190.2 (-210.8)	169.6±27.7^{a} (113.9-) 120.8-221.5 (-232.1)	225.5±60.1^{b} (99.5-) 116.4-306.4 (-317.9)	**9.66**	**<0.001**
dEpi: density of epidermal cells (number per mm^{2})	146.4±33.5^{a} (77.6-) 94.6-192.3 (-214.2)	148.5±44.0^{a} (55.6-) 82.1-202.9 (-231.4)	189.6±38.2^{b} (125.6-) 134.4-266.2 (-278.1)	233.9±63.3^{c} (98.1-) 125.4-315.0 (-317.9)	**10.20**	**<0.001**
dStoAd: depth of stomatal chamber at adaxial side of the leaf (µm)	21.0±3.0^{a} (16.1-) 17.3-27.2 (-27.7)	22.5±3.3^{ab} (15.6-) 17.8-26.5 (-29.2)	24.6±2.5$^{b\#}$ (18.8-) 18.8-26.4 (-26.5)	21.2±2.4$^{a\#}$ (14.5-) 18.3-23.8 (-25.0)	4.76	0.009$^{\$}$

dStoAb: depth of stomatal chamber at abaxial side of the leaf (µm)	21.4±3.0[a] (16.7-) 17.5-25.4 (-27.7)	23.7±3.9[b] (16.5-) 18.4-28.7 (-31.9)	24.6±2.4[b#] (19.8-) 19.9-27.0 (-27.2)	21.5±2.5[a#] (15.2-) 17.5-24.9 (-25.2)	5.28	0.005[$]
wStoAd: width of stomata at adaxial side of the leaf (µm)	32.1±2.8[a] (27.9-) 28.7-35.1 (-39.3)	33.1±2.1[a] (29.1-) 30.2-36.0 (-38.1)	36.4±3.5[b#] (31.9-) 31.9-41.2 (-41.2)	31.8±1.6[a#] (28.4-) 29.6-33.8 (-34.9)	5.69	0.005[$]
wStoAb: width of stomata at abaxial side of the leaf (µm)	32.1±2.5[a] (28.2-) 28.6-35.8 (-37.2)	33.2±2.0[a] (28.6-) 30.8-35.9 (-37.5)	36.7±3.8[b#] (32.2-) 32.2-42.0 (-42.0)	32.3±1.9[a#] (29.6-) 29.7-34.9 (-35.2)	4.01	0.020[$]
Ratios						
w_l1L (w1L/l1L)	0.16±0.05[a] (0.08-) 0.12-0.24 (-0.29)	0.12±0.04[b] (0.07-) 0.09-0.15 (-0.34)	0.08±0.03[c] (0.05-) 0.05-0.13 (-0.18)	0.09±0.02[c] (0.07-) 0.07-0.15 (-0.15)	**18.97**	**<0.001**
w_l2L (w2L/l2L)	0.19±0.05[a] (0.12-) 0.13-0.27 (-0.29)	0.13±0.02[b] (0.09-) 0.10-0.16 (-0.18)	0.09±0.02[c] (0.05-) 0.05-0.13 (-0.17)	0.10±0.02[c] (0.08-) 0.08-0.13 (-0.13)	**33.55**	**<0.001**
S_LSpV (lSSpV/lLSpV)	0.57±0.07[a] (0.45-) 0.47-0.66 (-0.70)	0.58±0.08[a] (0.43-) 0.47- 0.70 (-0.73)	0.64±0.07[b#] (0.50-) 0.58-0.76 (-0.80)	0.58±0.10[a#] (0.42-) 0.48-0.70 (-0.77)	4.23	0.011[$]
LSpV_plH (LSpV/plH)	0.36±0.08[a] (0.24-) 0.27-0.44 (-0.65)	0.29±0.05[b] (0.18-) 0.21-0.37 (-0.43)	0.34±0.06[a] (0.17-) 0.28-0.40 (-0.40)	0.33±0.07[a] (0.20-) 0.21-0.43 (-0.44)	**7.09**	**<0.001**
w_lAnt (wAnt/lAnt)	0.58±0.05[ab] (0.45-) 0.53-0.66 (-0.71)	0.61±0.05[b] (0.45-) 0.56-0.66 (-0.71)	0.60±0.04[ab] (0.51-) 0.55-0.65 (-0.66)	0.58±0.03[a] (0.52-) 0.54-0.64 (-0.64)	3.30	0.029
lF_lAnt (lF/lAnt)	2.79±0.48 (1.97-) 2.09-3.53 (-3.57)	2.99±0.39 (2.12-) 2.36-3.46 (-3.79)	3.08±0.38 (2.50-) 2.59-3.62 (-4.01)	3.07±0.44 (2.36-) 2.59-3.76 (-4.17)	1.92	0.141
wC_lC (wC/lC)	0.84±0.08[a] (0.72-) 0.72-0.96 (-0.97)	0.73±0.09[b] (0.54-) 0.65-0.84 (-1.00)	0.73±0.04[b] (0.67-) 0.67-0.79 (-0.80)	0.75±0.06[b] (0.68-) 0.68-0.84 (-0.85)	**6.99**	**0.001**
wSe_lSe (wSe/lSe)	0.49±0.04[a] (0.43-) 0.44-0.54 (-0.54)	0.44±0.04[b] (0.30-) 0.39-0.49 (-0.51)	0.44±0.02[b] (0.39-) 0.40-0.47 (-0.47)	0.43±0.04[b] (0.35-) 0.36-0.47 (-0.48)	5.77	0.004
SI: stomatal index	49.25±1.25 (46.94-) 47.41-50.87 (-51.09)	48.94±1.29 (45.60-) 47.04-50.42 (-50.73)	47.72±2.01 (43.90-) 44.30-49.91 (-50.32)	49.12±1.31 (46.59-) 46.66-50.28 (-50.35)	2.59	0.073
dStoAd_Ab (dStoAd/dStoAb)	1.00±0.02 (0.94-) 0.97-1.02 (-1.02)	1.00±0.02 (0.94-) 0.97-1.02 (-1.05)	1.00±0.02 (0.98-) 0.98-1.05 (-1.05)	0.99±0.02 (0.94-) 0.96-1.01 (-1.02)	0.74	0.536
wStoAd_Ab (wStoAd/wStoAb)	1.00±0.04 (0.94-) 0.94-1.06 (-1.07)	1.00±0.04 (0.92-) 0.94-1.05 (-1.09)	0.99±0.04 (0.95-) 0.95-1.07 (-1.07)	0.98±0.04 (0.88-) 0.92-1.04 (-1.05)	0.49	0.691

[$] LM was repeated with only diploids (i.e. removing 3x from comparisons), and differences among taxonomic groups disappeared (P > 0.05)

[§] χ^2 (Kruskal-Wallis test)

[#] When only diploids of *A. podolicum* and *A. paniculatum* were compared, no significant differences were found in paired comparison (P > 0.05). Reported only for the case of significant LM tests.