

**Suppl. Table 1.** Taxa and accessions studied with provenances, collection details, voucher information, chromosome numbers, ITS sequences and EMBL/GenBank sequence entry numbers. Italicized subscript numbers indicate ITS clone sequences from putative non-functional, pseudogene rDNA copies.

Taxon	Provenance, collector and herbarium acronym in square brackets	Somatic (2n) chromosome number	ITS consensus sequences (clone types) and corresponding individual clone sequences	EMBL/GenBank entry number
1 <i>Agropyron cristatum</i> (L.) Gaertn.	Russia, Armavir			AJ608149 <sup>1</sup>
2 <i>Helictochloa adsurgens</i> (Simonk.) Romero Zarco subsp. <i>adsurgens</i>	Romania, Jud. Hunedoara, Retezat Mountain; M. Röser 9575 [HAL]	18x = 126	ADS a: ADS <sub>4, 6, 16</sub> ADS b: ADS <sub>2, 3, 15</sub> ADS c: ADS <sub>5, 19</sub>	HE608572 <sup>2</sup> , HE608574 <sup>2</sup> , HE608576 <sup>2</sup> HG934472–934474 <sup>3</sup> HE608573 <sup>2</sup> , HE608578 <sup>2</sup>
3 <i>H. aetolica</i> (Rech. f.) Romero Zarco	Greece, Epirus; M. Röser 7266 [HAL]	2x = 14		
4 <i>H. agropyroides</i> (Boiss.) Romero Zarco	Greece, Epirus; M. Röser 10726 [HAL]			FM956466 <sup>4</sup>
5 <i>H. agropyroides</i> (Boiss.) Romero Zarco	Greece, Crete; G. Winterfeld 20 [HAL]	10x = 65		
6	Greece, Crete; G. Winterfeld 15 [HAL]		ARGI a: ARGI <sub>2, 3, 18</sub> ARGI b: ARGI <sub>1, 4, 5, 6, 8, 9, 10, 11, 13, 19, 20</sub>	FN984891 <sup>5</sup> , FN 984890 <sup>5</sup> , FN984889 <sup>5</sup> FN984892 <sup>5</sup> , FN984898 <sup>5</sup> , HG934475 <sup>3</sup> , FN984899 <sup>5</sup> , FN984900 <sup>5</sup> , FN 984901 <sup>5</sup> , FN984893 <sup>5</sup> , FN984895 <sup>5</sup> , HG934476 <sup>3</sup> , FN 984896 <sup>5</sup> , FN 984897 <sup>5</sup>
7	Greece, Crete; G. Winterfeld 16 [HAL]		ARGII a: ARGII <sub>2, 3, 4, 5, 7, 9, 13, 16, 17, 18, 20</sub> ARGII b: ARGII <sub>1, 6, 15</sub>	HG934477–934487 <sup>3</sup> HG934488–934490 <sup>3</sup>
8	Greece, Peloponnesus; M. Röser 10698 [HAL]	10x = 70	ARGIII a: ARGIII <sub>5, 12</sub> ARGIII b: ARGIII <sub>1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14,</sub> 15, 16, 17, 18, 19, 20 ARGIV a: ARGIV <sub>6, 7, 18</sub> ARGIV b: ARGIV <sub>11, 19</sub> ARGIV c: ARGIV <sub>2, 20</sub> ARGIV d: ARGIV <sub>1, 3, 4, 5, 8, 9, 10, 12, 13, 15, 16,</sub> 17	HG934491–934492 <sup>3</sup> HG934493–934510 <sup>3</sup> FN984907–984908 <sup>5</sup> , FN984906 <sup>5</sup> HG934511 <sup>3</sup> , FN984909 <sup>5</sup> HG934512–934513 <sup>3</sup> HG934514 <sup>3</sup> , FN984911 <sup>5</sup> , HG934515 <sup>3</sup> , FN984904 <sup>5</sup> , HG934516–934517 <sup>3</sup> , FN984912 <sup>5</sup> , FN984905 <sup>5</sup> , FN984903 <sup>5</sup> , FN984914 <sup>5</sup> , FN984910 <sup>5</sup> , FN984913 <sup>5</sup>
9				FM956464 <sup>4</sup>
10 <i>H. albinervis</i> (Boiss.) Romero Zarco	Spain, Málaga; M. Röser 3459 [HAL]	2x = 14 + 1B		
11	Spain, Cádiz/Málaga; G. Winterfeld 72 [HAL]	4x = 28	ALB a: ALB <sub>1, 4, 5, 7, 9, 10</sub> ALB b: ALB <sub>2, 3, 8</sub>	HG934518–934523 <sup>3</sup> HG934524–934526 <sup>3</sup>
12 <i>H. armeniaca</i> (Schischk.) Romero Zarco	Turkey, Vil. Erzurum; W. Sauer H471 [TUB]	12x = 84		
13	Turkey, Vil. Erzurum; D. Lange 3651 [FR]		ARMI a: ARMI <sub>18</sub> ARMI b: ARMI <sub>1, 3, 6, 7, 8, 13, 14, 15</sub>	HE608586 <sup>2</sup> HE608579–608582 <sup>2</sup> , HG934527 <sup>3</sup> , HE608583–608585 <sup>2</sup>
14	Turkey, Vil. Kars; D. Lange 3710 [FR]		ARMII: ARMII <sub>1, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 18,</sub> 20	HE608587 <sup>2</sup> , HG934528 <sup>3</sup> , HE608588–608590 <sup>2</sup> , HG934529 <sup>3</sup> , HE608591–608597 <sup>2</sup>
15 <i>H. blauui</i> (Asch. & Janka) Romero Zarco subsp. <i>blauui</i>	Bosnia and Herzegovina, Mt. Maglić; W. Sauer H 344 [TUB]	14x = 98		

16		Bosnia and Herzegovina, Treskavica-Planina; F. Oberwinkler 16932 [BSM]	BLAI: BLAI <sub>1, 9, 11, 13, 15, 16, 18</sub>	HE608615 <sup>2</sup> , HG934530 <sup>3</sup> , HE608616–608617 <sup>2</sup> ,
17		Bosnia and Herzegovina, Mt. Maglić; W. Sauer 11606 [BSM]	BLAI: BLAI <sub>1, 9, 11, 13, 15, 16, 18</sub>	HE608609 <sup>2</sup> , HG934531 <sup>3</sup> , HE608619 <sup>2</sup>
18	<i>H. bromoides</i> (Gouan) Romero Zarco subsp. <i>bromoides</i>	Spain, Sa. de Tejeda; G. Winterfeld 58 [HAL] 2x = 14	BLAI: BLAI <sub>1, 4, 5, 6, 7, 10, 11, 13, 14, 15, 18, 19, 20</sub>	HE608598 <sup>2</sup> , HE608600–608603 <sup>2</sup> , HE608605–608609 <sup>2</sup> , HE608612–608614 <sup>2</sup>
19		France, Dept. Hautes-Alpes; M. Röser 11039 [HAL] 2x = 14		
20		France, Mt. Ventoux; M. Röser 10630 [HAL]		FM956463 <sup>4</sup>
21	<i>H. cincinnata</i> (Ten.) Romero Zarco	Italy, Sicily, Madonie; G. Winterfeld 31 [HAL] 4x = 28	CIN a: CIN <sub>3</sub> CIN b: CIN <sub>1, 2, 4, 5, 6, 8, 9, 10</sub>	FM999036 <sup>6</sup> FM999034–999035 <sup>6</sup> , FM999037–FM999042 <sup>6</sup>
22	<i>H. cintrana</i> (Röser) Romero Zarco	Portugal, Estremadura; M. Röser 9525 [HAL] 6x = 42	CIT a: CIT <sub>2, 4, 8, 20</sub> CIT b: CIT <sub>1, 3, 5, 7, 10, 11, 13, 15, 17, 18</sub> CIT c: CIT <sub>6, 19</sub>	HG934532–934535 <sup>3</sup> HG934536–934545 <sup>3</sup> HG934546–934547 <sup>3</sup>
23	<i>H. compressa</i> (Heuff.) Romero Zarco	Greece, Macedonia; M. Röser 10707 [HAL] 2x = 14		
24		Turkey, Vil. Bolu; W. Sauer TR-2 [TUB]		Z96848 <sup>7</sup> , Z96849 <sup>7</sup>
25	<i>H. gervaisii</i> (Holub) Romero Zarco subsp. <i>arundana</i> (Romero Zarco)	Spain, Serranía de Ronda; G. Winterfeld 71 [HAL] 4x = 28		
26		Romero Zarco Spain, Serranía de Ronda; G. Winterfeld 69 [HAL] 4x = 28	GAR a: GAR <sub>5</sub> GAR b: GAR <sub>1, 2, 3, 4</sub>	FM999047 <sup>6</sup> FM999043–999046 <sup>6</sup>
27		Spain, Sa de Grazalema; M. Röser 10270 [HAL] 6x = 42		
28		Spain, Sa de Grazalema; M. Röser 4660 [HAL] 6x = 42	GEA: GEA <sub>6, 7, 8, 10</sub>	FM999048–999051 <sup>6</sup>
29	<i>H. gervaisii</i> (Holub) Romero Zarco subsp. <i>gervaisii</i>	Spain, Málaga; M. Röser 3418 [HAL] 8x = 56	GER a: GER <sub>5</sub> GER b: GER <sub>2, 3, 4</sub>	FM999055 <sup>6</sup> FM999052–999054 <sup>6</sup>
30	<i>H. hackelii</i> (Henriq.) Romero Zarco	Portugal, Prov. Baixo Alentejo; M. Röser 3521 [HAL] 6x = 42	HAC: HAC <sub>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</sub>	HG934548–934557 <sup>3</sup>
31	<i>H. hookeri</i> (Scribn.) Romero Zarco subsp. <i>hookeri</i>	Canada, Yukon, Kluane; R.J. Soreng 6305 [US]		FN984915 <sup>5</sup>
32		Canada, Alberta, East Central; P. Porter, L. Hewlett 2x = 14 & P. Odynski; Millennium Seed Bank 336026 and G. Winterfeld GW14		
33	<i>H. hookeri</i> (Scribn.) Romero Zarco subsp. <i>schelliana</i> (Hack.) Romero Zarco	Russia, Karachaevo-Cherkessiya		AY870327 <sup>8</sup>
34		Mongolia, Chentej; K. Wesche 4333 [HAL]		FN984916 <sup>5</sup>
35	<i>H. levis</i> (Hack.) Romero Zarco	Spain, Granada; G. Winterfeld 38 [HAL] 2x = 14		FM958416 <sup>4</sup>
36		Spain, Granada; G. Winterfeld 50 [HAL]		
37	<i>H. lusitanica</i> (Romero Zarco) Romero Zarco	Portugal, Trás-os-Montes e Alto Douro; M. Röser 3710 [HAL] 20x = 138	LUS a: LUS <sub>7, 8, 17, 18, 21, 25</sub> LUS b: LUS <sub>1, 2, 3, 4, 6, 9, 10, 11, 12, 15, 16, 20, 22, 23, 24</sub>	HG934558–934563 <sup>3</sup> HG934564–934578 <sup>3</sup>
38	<i>H. marginata</i> (Lowe) Romero	Portugal, Beira Alta; M. Röser 9421 [HAL] 2x = 14		FM956465 <sup>4</sup>

39	Zarco	Spain, Ciudad Real		DQ539595 <sup>9</sup>	
40	<i>H. murcica</i> (Holub) Romero Zarco	Spain, Murcia; M. Röser 4862 [HAL]	TEN: TEN <sub>1, 2, 4</sub>	HG934579–934581 <sup>3</sup>	
41	<i>H. planiculmis</i> (Schrad.) Romero Zarco	Czech Republic, Hochgesenke; H 401 [TUB]	PLA a: PLA <sub>2, 3, 7, 17</sub>	HG934582–934585 <sup>3</sup>	
42	<i>H. praeusta</i> (Rchb.) Romero Zarco subsp. <i>praeusta</i>	Italy, Verona, M. Baldo; M. Röser 10232 [HAL]	PLA b: PLA <sub>4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 19, 20</sub>	HG934586–934597 <sup>3</sup>	
43		Italy, Trentino-Alto Adige; G. Winterfeld 10 [HAL]	18x = 123		
44	<i>H. pratensis</i> (L.) Romero Zarco subsp. <i>pratensis</i>	Italy, Trentino-Alto Adige; G. Winterfeld 10 [HAL]	16x = 112	PSPa: PSP <sub>10, 11, 14, 17, 19</sub> PSPb: PSP <sub>20</sub> PSPc: PSP <sub>1, 13, 16</sub> PSPd: PSP <sub>2, 9, 12, 15</sub>	HG934598–934602 <sup>3</sup> HG934603 <sup>3</sup> HG934604–934606 <sup>3</sup> HG934607–934610 <sup>3</sup>
45		Great Britain, England, Surrey; M. Röser 10207 [HAL]	18x = 126		
46	<i>H. pratensis</i> (L.) Romero Zarco subsp. aff. <i>pratensis</i>	Germany, Hessen; M. Röser 10518 [HAL]	20	PRP: PRP <sub>1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 18, 19</sub>	HG934611–934625 <sup>3</sup>
47	<i>H. pratensis</i> (L.) Romero Zarco subsp. <i>iberica</i> (St.-Yves) Romero Zarco	France, Dépt. Pyrénées-Orientales; M. Röser 3998 [HAL]	14x = 98	PSAP a: PSAP <sub>1, 2, 3, 5, 8, 9, 12</sub> PSAP b: PSAP <sub>4, 6, 15, 16</sub> PSAP c: PSAP <sub>7, 10, 11, 13, 17, 18, 20</sub>	HG934626–934632 <sup>3</sup> HG934633–934636 <sup>3</sup> HG934637–934643 <sup>3</sup>
48		Spain, Huesca; M. Röser 10568 [HAL]	14x = 98		
49		Spain, Huesca; M. Röser 3898 [HAL]	16, 17, 19, 20	IBEIII a: IBEIII <sub>18</sub> IBEIII b: IBEIII <sub>1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15,</sub>	HG934644 <sup>3</sup> HG934645–934661 <sup>3</sup>
50		Spain, Oviedo, Picos de Europa; M. Röser 3774 [HAL]	15x = 105		
51	<i>H. pratensis</i> (L.) Romero Zarco subsp. <i>amethystea</i> (Braun-Blanq.) Romero Zarco	Spain, Oviedo, Picos de Europa; M. Röser 3814 [HAL]	15x = 104 + 2B	IBEI a: IBEI <sub>3</sub> IBEI b: IBEI <sub>5, 6, 7, 8, 9, 10, 12, 14, 15, 18, 20</sub>	HG934662 <sup>3</sup> HG934663–934673 <sup>3</sup>
52		Andorra, Valley of Valira del Orient; M. Röser 3990 [HAL]	18x = 126	PSAI a: PSAI <sub>5, 10</sub> PSAI b: PSAI <sub>1, 2, 4, 6, 7, 9, 13, 14, 15, 16</sub>	HG934674–934675 <sup>3</sup> HG934676–934685 <sup>3</sup>
53		Spain, Prov. Gerona; M. Röser 4013 [HAL]	18x = 126		
54		France, Dépt. Pyrénées-Orientales; M. Röser 4015 [HAL]	19x = 130	PSAII a: PSAII <sub>7</sub> PSAII b: PSAII <sub>3, 4, 16, 17</sub>	HG934686 <sup>3</sup> HG934687–934690 <sup>3</sup>
55	<i>H. pratensis</i> (L.) Romero Zarco s.l.	Frankreich, Dépt. Vaucluse, Mt. Ventoux; M. Röser 10633 [HAL]	19x = 130	PSAII c: PSAII <sub>1, 2, 5, 6, 8, 10, 11, 12, 13, 15, 19, 20</sub>	HG934691–934702 <sup>3</sup>
56	<i>H. pruinosa</i> (Hack. & Trab.) Romero Zarco	Morocco, Moyen Atlas; M. Röser 10318 [HAL]	15x = 105	PSAIII a: PSAIII <sub>8, 11, 12, 16</sub> PSAIII b: PSAIII <sub>4, 9, 15, 20</sub>	HG934703–934706 <sup>3</sup> HG934707–934710 <sup>3</sup>
57		Austria, Mt. Großglockner; M. Röser 10965 [HAL]	2x = 14	PRA: PRA <sub>1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16, 17,</sub>	HG934711–934728 <sup>3</sup>
58	<i>H. versicolor</i> (Vill.) Romero Zarco subsp. <i>versicolor</i>	France, Dépt. Haute-Garonne; M. Röser 3937 [HAL]	18, 19, 20	PRU: PRU <sub>1, 2, 3, 4, 6, 7, 8</sub>	HG934729–934735 <sup>3</sup>
		Russia, Gatchina district			FM956467 <sup>4</sup>
	<i>Sesleria caerulea</i> (L.) Ard.				EF565132 <sup>8</sup>

<sup>1</sup> Blattner F. [unpublished]

<sup>2</sup> Winterfeld G, Schneider J, Perner K, Röser M: Origin of highly polyploids: different pathways of auto- and allopolyploidy in 12–18x species of *Avenula* (Poaceae). *Int J Plant Sci* 173:1–14 (2012).

<sup>3</sup> This study

<sup>4</sup> Winterfeld G, Döring E, Röser M: Chromosome evolution in wild oat grasses (Aveneae) revealed by molecular phylogeny. *Genome* 52:361–380 (2009a).

<sup>5</sup> Winterfeld G, Perner K, Röser M: Genome composition and origin of the polyploid Aegean grass *Avenula agropyroides* (Poaceae). *J Biogeogr* 38:727–741 (2011).

<sup>6</sup> Winterfeld G, Schneider J, Röser M: Allopolyploid origin of Mediterranean species in *Helictotrichon* (Poaceae) and its consequences for karyotype repatterning and homogenization of rDNA repeat units. *Syst Biodivers* 7:277–295 (2009b).

<sup>7</sup> Grebenstein B, Röser M, Sauer W, Hemleben V: Molecular phylogenetic relationships in Aveneae (Poaceae) species and other grasses as inferred from ITS1 and ITS2 rDNA sequences. *Plant Syst Evol* 213:133–150 (1998).

<sup>8</sup> Rodionov AV, Kim ES, Nosov NN, Rayko, MP, Machs, EM, Punina, EO: Molecular phylogenetic study of species of the genus *Colpodium* *sensu lato* (Poeae, Poaceae). *Ekol Genet* 6:34–46 (2008).

<sup>9</sup> Quintanar A, Castroviejo S, Catalán P: Phylogeny of the tribe Aveneae (Pooideae, Poaceae) inferred from plastid *trnT*–F and nuclear ITS sequences. *Am J Bot* 94:1554–1569 (2007).

**Suppl. Table 2.** Number of variable and parsimony-informative characters in the sequence alignments. The number of clone sequences studied in square brackets.

	Length of alignment (= alignment positions)	Number of variable positions	Number of parsimony-informative positions
<b>Alignment of all sequences</b>			
With outgroups	611	386 (63%)	184 (30%)
<i>Helictochloa</i> all sequences	610	370 (61%)	165 (27%)
<i>Helictochloa</i> only polyploids	610	365 (60%)	161 (26%)
<b>Alignment using consensus sequences (clone types) for the polyploids</b>			
With outgroups	606	172 (28%)	61 (10%)
<i>Helictochloa</i> all sequences	602	123 (20%)	45 (7%)
<i>Helictochloa</i> only polyploids	602	104 (17%)	41 (7%)
<b>Polyploids with accession number in suppl. table 1, their clone types and corresponding individual clone sequences</b>			
<i>H. adsurgens</i> subsp. <i>adsurgens</i> 2 [8]	590	29 (5%)	15 (2%)
ADS a [3]	589	6 (1%)	0
ADS b [3]	590	13 (2%)	0
ADS c [2]	590	2 (<1%)	0
<i>H. agropyroides</i> 6 [14]	595	26 (4%)	14 (2%)
ARGI a [3]	594	6 (1%)	0
ARGI b [11]	595	13 (2%)	2 (<1%)
<i>H. agropyroides</i> 7 [14]	594	26 (4%)	7 (1%)
ARGII a [11]	594	22 (4%)	6 (1%)
ARGII b [3]	593	5 (1%)	0
<i>H. agropyroides</i> 8 [20]	593	23 (4%)	6 (1%)
ARGIII a [2]	592	0	0
ARGIII b [18]	593	23 (4%)	5 (1%)
<i>H. agropyroides</i> 9 [19]	594	26 (4%)	12 (2%)
ARGIV a [3]	593	5 (1%)	0
ARGIV b [2]	593	3 (<1%)	0
ARGIV c [2]	594	2 (<1%)	0
ARGIV d [12]	593	16 (3%)	5 (1%)
<i>H. albinervis</i> 11 [9]	592	10 (2%)	7 (1%)
ALB a [6]	590	6 (1%)	0
ALB b [3]	592	4 (1%)	0
<i>H. armeniaca</i> 13 [9]	595	26 (4%)	14 (2%)
ARMI a [1]	593	-	-
ARMI b [8]	590	25 (4%)	2 (<1%)
<i>H. armeniaca</i> 14 [13]	593	49 (8%)	3 (<1%)
<i>H. blauí</i> subsp. <i>blauí</i> 16 BLAI [7]	590	10 (2%)	2 (<1%)
<i>H. blauí</i> subsp. <i>blauí</i> 17 BLAI [13]	590	29 (5%)	4 (1%)
<i>H. cincinnata</i> 21 CIN [9]	583	29 (5%)	0
CIN a [1]	571	-	-
CIN b [8]	583	4 (1%)	0
<i>H. cintrana</i> 22 [16]	590	40 (7%)	15 (2%)
CIT a [4]	590	9 (1%)	0
CIT b [10]	590	20 (3%)	4 (1%)
CIT c [2]	572	9 (2%)	0
<i>H. gervaisii</i> subsp. <i>arundana</i> 26 [5]	584	12 (2%)	1 (<1%)
GAR a [1]	578	-	-
GAR b [4]	584	6 (1%)	1 (<1%)
<i>H. gervaisii</i> subsp. <i>arundana</i> 28 GEA [4]	588	13 (2%)	2 (<1%)
<i>H. gervaisii</i> subsp. <i>gervaisii</i> 29 GER [4]	584	15 (3%)	1 (<1%)
GER a [1]	584	-	-
GER b [3]	584	9 (1%)	0
<i>H. hackelii</i> 30 HAC [10]	589	7 (1%)	1 (<1%)
<i>H. lusitanica</i> 37 [21]	591	34 (6%)	9 (1%)
LUS a [6]	591	12 (2%)	2 (<1%)
LUS b [15]	591	29 (5%)	3 (<1%)
<i>H. murcica</i> 40 TEN [3]	573	5 (1%)	0
<i>H. planiculmis</i> 41 [16]	590	21 (4%)	8 (1%)
PLA a [4]	590	8 (1%)	0

PLA b [12]	589	8 (1%)	1 (<1%)
<i>H. praeusta</i> subsp. <i>praeusta</i> 43 [13]	597	81 (14%)	26 (4%)
PSP a [5]	590	6 (1%)	0
PSP b [1]	589	-	-
PSP c [3]	590	3 (<1%)	0
PSP d [4]	590	10 (2%)	3 (<1%)
<i>H. pratensis</i> subsp. <i>pratensis</i> 44 PRP [17]	591	33 (6%)	8 (1%)
<i>H. pratensis</i> subsp. aff. <i>pratensis</i> 46 [18]	590	34 (6%)	12 (2%)
PSAP a [7]	590	11 (2%)	0
PSAP b [4]	590	1 (<1%)	0
PSAP c [7]	590	16 (3%)	5 (1%)
<i>H. pratensis</i> subsp. <i>iberica</i> 50 [12]	591	23 (4%)	3 (<1%)
IBEI a [1]	591	-	-
IBEI b [11]	591	12 (2%)	1 (<1%)
<i>H. pratensis</i> subsp. <i>iberica</i> 48 [18]	592	41 (7%)	19 (3%)
IBEIII a [1]	566	-	-
IBEIII b [17]	592	40 (7%)	14 (2%)
<i>H. pratensis</i> subsp. <i>amethystea</i> 51 [12]	592	34 (6%)	7 (1%)
PSAI a [2]	591	6 (1%)	0
PSAI b [10]	591	24 (4%)	3 (<1%)
<i>H. pratensis</i> subsp. <i>amethystea</i> 52 [17]	592	46 (8%)	10 (2%)
PSAII a [1]	563	-	-
PSAII b [4]	592	7 (1%)	1 (<1%)
PSAII c [12]	590	35 (6%)	2 (<1%)
<i>H. pratensis</i> subsp. <i>amethystea</i> 53 [8]	592	19 (3%)	8 (1%)
PSAIII a [4]	592	9 (1%)	1 (<1%)
PSAIII b [4]	591	11 (2%)	0
<i>H. pratensis</i> s.l. 54 PRA [18]	589	28 (5%)	6 (1%)
<i>H. pruinosa</i> 55 PRU [7]	590	11 (2%)	4 (1)

**Suppl. Table 3.** Basic karyotypes in *Helictochloa* and their characteristics (monoploid chromosome sets of  $x = 7$ ).

Genome	Number of satellite chromosomes (NORs)	5S rDNA bands localized in			DAPI bands in most chromosomes			Number of submetacentrics
		non-satellite chromosomes	satellite chromosomes		in both arms	in one arm	absent	
			arm without satellite	arm with satellite				
E	2	x		x		x		0
G	1		x	x		x		0
L	1	x	x			x		0
B	1	x	x	x		x		0–1
C	2	x			x			0
M	1	x	x			x		1
U	1	x	x			x		2–6
V	2	x	x			x		0

**Suppl. Table 4.** Found numbers of NORs (45S rDNA) and 5S rDNA sites in polyploids relative to the number expected from their respective monoploid basic karyotypes.

Taxon and accession number in suppl. table 1	Ploidy	Number of NORs [%]	Number of 5S sites [%]
<i>H. adsurgens</i> 2	18x	44	44
<i>H. agropyroides</i> 5	10x	100	100
<i>H. agropyroides</i> 8	10x	100	100
<i>H. albinervis</i> 11	4x	100	100
<i>H. blaui</i> subsp. <i>blaui</i> 16	14x	14	57
<i>H. cincinnata</i> 21	4x	100	112
<i>H. cintrana</i> 22	6x	100	133
<i>H. gervaisii</i> subsp. <i>arundana</i> 25	4x	100	100
<i>H. gervaisii</i> subsp. <i>arundana</i> 27	6x	100	158
<i>H. gervaisii</i> subsp. <i>gervaisii</i> 29	8x	25	200
<i>H. hackelii</i> 30	6x	100	108
<i>H. lusitanica</i> 37	20x	30	17
<i>H. planiculmis</i> 41	18x	55	36
<i>H. praeusta</i> subsp. <i>praeusta</i> 42	18x	78	36
<i>H. praeusta</i> subsp. <i>praeusta</i> 43	16x	50	53
<i>H. pratensis</i> subsp. <i>pratensis</i> 44	18x	22	47
<i>H. pratensis</i> subsp. aff. <i>pratensis</i> 46	14x	28	50
<i>H. pratensis</i> subsp. <i>iberica</i> 47	14x	71	50
<i>H. pratensis</i> subsp. <i>iberica</i> 49	15x	7	53
<i>H. pratensis</i> subsp. <i>iberica</i> 50	15x	7	53
<i>H. pratensis</i> subsp. <i>amethystea</i> 51	18x	22–61 <sup>1</sup>	47
<i>H. pratensis</i> subsp. <i>amethystea</i> 52	18x	33–67 <sup>1</sup>	55
<i>H. pratensis</i> subsp. <i>amethystea</i> 53	19x	17	50
<i>H. pratensis</i> s.l. 54	19x	44	55
<i>H. pruinosa</i> 55	15x	33	13

<sup>1</sup> Depending on the genomes actually represented in this accession.