

Feulner M., Weig A., Paule J., Gregor T., Schott L. F. & Aas G. (2017): Genetic variability and morphology of tri- and tetraploid members of the *Sorbus aria* complex in northern Bavaria. – *Preslia* 89: 275–290.

Electronic appendix 1. – Microsatellite primer sequences and combination of PCR products in multiplex capillary electrophoresis (CE) used in this study.

CE multiplex	Marker (label, motif)	Oligoname	Sequence
Sor_Mplx1	CH01F02 (BMN5, (GA)18 ₂₂)	CH01F02Feco ¹	tgtaaacgacggccagtCCACATTAGAGCAGTTGAGGATGA
		CH01F02R2	ATAGGGTAGCAGCAGATGGTTGT
	CH02D11 (BMN6, (AG)21)	CH02D11Feco ¹	tgtaaacgacggccagtAAATAAGCGTCCAGAGCAACAG
		CH02D11R ²	GGGACAAAATCTCACAAACAGA
Sor_Mplx2	MSS5 (DY751, (GA)19)	MSS5Feco ¹	tgtaaacgacggccagtCCCCAACACATTTTCTCC
		MSS5R ²	CCTCTCGCTCTTTGCCTCT
	MSS13 (BMN5, (GA)12)	MSS13Feco ¹	tgtaaacgacggccagtGAAAATTCCTTCCCGAACTTCAT
		MSS13R ²	AACTCACTCGGATTTTGGAACT
MSS16 (BMN6, (GA)28)	MSS16Feco ¹	tgtaaacgacggccagtATGTCACATCTCTCCCCTTGTGT	
	MSS16R ²	TTTTGCCCTCAAAGAATGCCTTA	
		Labelling primer: M13eco ³ (with BMN5, BMN6, or DY751 fluorescent label at the 5' end)	tgtaaacgacggccagt

¹Robertson et al. (2010), modified

²Robertson et al. (2010)

Electronic Appendix 2. – Alleles of 5 microsatellite loci and ploidy level of populations, taxa and individuals investigated. In brackets are alleles not occurring in all individuals of the population. In bold are individual-, taxon or geographic-group specific alleles or those alleles which are markers for gene flow. Unique alleles are in italics. * Ploidy as published in Feulner et al. (2013) **Ploidy deducted from highest number of alleles per locus.

	Allele number	CH01F02	CH02D11	MSS5	MSS13	MSS16	ploidy
<i>S. aria</i> s. str. (401–406ROS, 506WAT1)	7-10	(215), 219	(169, 196 ,198,202, 217)	(131 ,140,145)	(179 ,216,218,220)	178,(180, 185)	2*
<i>S. collina</i> Northern Franconian Jura clone (i.e. GOT/ZED)	15	215,219,221	171,194,214,227	133,145,157	216,222	178,182,191	4
<i>S. collina</i> Middle Franconian Jura clone 1 (456,459ETT1)	15	215,219,221	171,194,214, 229	133,145,157	216,222	178,182,191	4*
<i>S. collina</i> Middle Franconian Jura clone 2 (444,446BER1)	16	215,219,221	171,194, 215 ,227	133,145, 147 ,157	216,222	178,182,191	4
<i>S. collina</i> Middle Franconian Jura clone 3 (438,414,442BER1, 449–453DEU)	16	215,219,221	171,194,214,227	133,145, 147 ,157	216,222	178,182,191	4
<i>S. collina</i> Southern Franconian Jura clone 532–535HAH	15	215,219,221	171,194,214, 231	133,145,157	216,222	178,182,191	4**
<i>S. collina</i> Franconian Jura clone (491,493MOD, 454ETT1)	15	215,219,221	171,194, 215 ,227	133,145,157	216,222	178,182,191	4
Unique genotypes of <i>S. collina</i>							
466LAN	15	213 ,215,219	171,194, 215 ,227	133,145,157	215 ,222	178,182,191	4
505WAT2	15	215,219,221	171,194,214, 225	133,145,157	216,222	178,182,191	4
507WAT2	15	215,219,221	171,194, 217 ,227	133,145,157	216,222	178,182,191	4
514DOE	12	215,219,221	171	133,145,157	216,222	178,182,191	4
518DOE	15	215,219,221	171,194,214,227	133,145,157	216,222	182, 185 ,191	4
519NEU	14	215,219,221	171,214,227	133,145,157	216,222	178,182,191	4
520NEU	15	215,219,221	171,194,214, 228	133,145,157	216,222	178,182,191	4
468UAF	11	215,219	227	133,145,157	216,222	178,182,191	4
470UAF	11	215,221	190 , 192 ,214,227	145,157	216	178,182	4
471UAF	17	215,219,221	171,194,214,227	133,145,157	179 , 183 ,216,222	178,182,191	4
474DOO	16	215,221	171,194,214,227	133,145,157	179 , 183 ,216,222	178,182,191	4
477DOO	14	215,219,221	171, 196 , 217 , 229	133,145,157	216,222	182,191	4
494MOD	12	215,219,221	171,194,214,227	133,145	216	182,191	4
497WUN	10	215,221	192 ,194	145,157	216	178,182,191	4
483MOR	12	215,219,221	171,227	133,145,157	179 , 183	178,182	4
485MOR	9	215,219,221	227	133,145,157	216	191	4
457ETT1	15	215,219,221	171,194,214,227	133,145,157	215 ,222	178,182,191	4
Triploids of the <i>S. aria</i> complex (480,482,484MOR)	11	213 ,215,219	171, 174 , 192	131 ,145	216	178,182	3

Triploids of the <i>S. aria</i> complex (508,510,512WAT2)	12	215,219	171,(194),(196), 204	145,157	209,216	178,182,191	3
Triploids of the <i>S. aria</i> complex (517DOE)	11	219,221	171, 184,228	145, 147	215,220	182, 185	3
<i>S. danubialis</i> (BER2)	14	209,215,(219), (221)	161 ,171	133,145, 147	213,215,223	178,180,182	4
<i>S. danubialis</i> (ETT2)	14	209,215,(219), (221)	(161) ,171	133,145, 147	213,215,223	178,180,182	-
<i>S. danubialis</i> (ZIM)	15	209,215, 221	(161),(163) , 171	133,145, 147	213,215,223	178,180,182	-

Electronic appendix 3. – Sample/standard ratio and ploidy revealed by flow cytometry and unique genotypes according to microsatellite data. Unique genotypes are marked with an asterisk.

Sample	Sample-standard ratio	ploidy
<i>S. collina</i>		
435 GOT	1.056	4x
436 GOT	1.062	4x
437 GOT	1.051	4x
438 BER	1.054	4x
441 BER	1.060	4x
442 BER	1.055	4x
444 BER	1.073	4x
446 BER	1.057	4x
461 ZEU	1.041	4x
462 ZEU	1.050	4x
463 ZEU	1.050	4x
464 ZEU	1.040	4x
465 ZEU	1.045	4x
466 ZEU*	1.042	4x
467 ZEU	1.053	4x
468 UAF*	1.064	4x
469 UAF	1.039	4x
470 UAF	1.041	4x
471 UAF*	1.032	4x
472 UAF	1.044	4x
473 DOO	1.034	4x
474 DOO*	1.028	4x
475 DOO	1.041	4x
477 DOO*	1.026	4x
479 MOR*	1.076	4x
481 MOR	1.041	4x
483 MOR*	1.054	4x
485 MOR*	1.061	4x
486 ZED	1.065	4x
488 ZED	1.061	4x
489 ZED	1.060	4x
490 ZED	1.065	4x
491 MOD	1.069	4x
492 MOD	1.050	4x
493 MOD	1.046	4x
494 MOD*	1.052	4x
410WUN	1.038	4x
496WUN	1.048	4x
497 WUN*	1.061	4x
498 WUN	1.060	4x
499 WUN	1.061	4x
507 WAT*	1.032	4x
509 WAT	1.036	4x
513 WAT	1.039	4x
514 DOE*	1.042	4x
515 DOE	1.058	4x
516 DOE	1.047	4x
518 DOE*	1.034	4x
520 NEU*	1.060	4x
522 KOR	1.055	4x
523 KOR	1.054	4x
525 KOR*	1.057	4x
527 NEU	1.050	4x
Triploids of the <i>S. aria</i> complex		
480 MOR	0.790	3x
482 MOR	0.794	3x
484 MOR	0.777	3x

504 WAT	0.785	3x
510 WAT	0.792	3x
512 WAT	0.790	3x
517 DOE*	0.785	3x
<i>S. danubialis</i>		
439 BER	1.052	4x
440 BER*	1.054	4x
443 BER*	1.050	4x
447 BER	1.058	4x
448 BER	1.058	4x

Electronic appendix 4. – K-nearest neighbors classification based on morphological data of the individuals of the *Sorbus aria* complex.

Population	Taxon Classification	Prob	Correct (%)
ZED486	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZED402	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZED487	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZED488	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZED489	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOD491	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOD492	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOD493	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOD494	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WUN410	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WUN496	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WUN497	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WUN498	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WUN499	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ROS500	<i>S. aria</i>	<i>S. collina</i>	100, FALSE
ROS501	<i>S. aria</i>	<i>S. aria</i>	67, TRUE
ROS502	<i>S. aria</i>	<i>S. collina</i>	100, FALSE
ROS503	<i>S. aria</i>	<i>S. aria</i>	100, TRUE
Wat513	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WAT512	triploids	triploids	100, TRUE
WAT510	triploids	triploids	100, TRUE
WAT509	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WAT508	triploids	triploids	100, TRUE
WAT505	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
WAT506	<i>S. aria</i>	<i>S. aria</i>	67, TRUE
WAT507	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOE514	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOE515	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOE516	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOE517	triploids	triploids	100, TRUE
DOE518	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
GOT434	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
GOT435	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
GOT436	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
GOT437	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER438	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER439	<i>S. danubialis</i>	<i>S. danubialis</i>	67, TRUE
BER440	<i>S. danubialis</i>	<i>S. collina</i>	100, FALSE
BER441	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER442	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER443	<i>S. danubialis</i>	<i>S. danubialis</i>	100, TRUE
BER444	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER446	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
BER447	<i>S. danubialis</i>	<i>S. danubialis</i>	67, TRUE

BER448	<i>S. danubialis</i>	<i>S. danubialis</i>	67, TRUE
DEU449	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DEU450	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DEU451	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DEU452	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DEU453	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT454	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT455	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT456	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT457	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT458	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT459	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ETT460	<i>S. danubialis</i>	<i>S. danubialis</i>	67, TRUE
ZEU461	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU462	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU463	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU464	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU465	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU466	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
ZEU467	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
UAF468	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
UAF469	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
UAF470	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
UAF471	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
UAF472	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOO473	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOO474	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOO475	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
DOO477	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOR478	triploids	triploids	100, TRUE
MOR479	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
MOR480	<i>S. collina</i>	danubialis	67, FALSE
MOR481	triploids	triploids	67, TRUE
MOR482	triploids	triploids	100, TRUE
MOR483	triploids	triploids	100, TRUE
MOR484	triploids	triploids	100, TRUE
MOR485	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
NEU519	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
NEU520	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
KOR522	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
KOR523	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
KOR525	<i>S. collina</i>	<i>S. collina</i>	100, TRUE
NEU527	<i>S. collina</i>	<i>S. collina</i>	100, TRUE