

Table S1. Pedigree of analysed winter wheat genotypes.

No.	Genotype	Provenance	Country
1	Muszelka	Kris × Rubens	Poland
2	SMH 8489	MOB 2498/95 × MIB168	Poland
3	KBP 08.17	Clever × DAD 471/76	Poland
4	Arkadia	(MIB3511/90 × CRT9) × Tonacja	Poland
5	STH 9011	(CRT 9 × Sukces) × STH 6719	Poland
6	NAD 08104	KOC 1655/97 × NAD 1-99	Poland
7	STH 9035	(CRT 9 × Sukces) × STH 6719	Poland
8	AND 394/07	Pegassos × Sukces	Poland
9	Bamberka	CRT 10 × STH 575	Poland
10	SMH 8540	(MOB 2498/95 × Meridien) × Nutka	Poland
11	KBP 08.8	Prinz × Dorota	Poland
12	SVPC 87185	SVP-72017-17-5-1/4/ P.Quinquin /3/ Vogel222 // H101/Comanche	Holland
13	CHD 7143/04	CN98-3896B × Batuta	Poland
14	82/2011	CWW -90/3 × Sława	Poland
15	Tarkus	UN*	Germany
16	91/2011	PBIS × Mobela	Poland
17	Praag 8	Local variety	Czech Republic
18	20816	Capo × Sumai 3	Austria
19	83/2011	CWW -90/3 × Sława	Poland
20	Fregata	Kobra × Astron	Poland
21	Ertus	Eroica LI × Virtus	Sweden
22	20818	Capo × Sumai 3	Austria
23	UNG 136.6.1.1.	(Sagvari × Nobeokabozu) × (Mini-Mano × Sumai#3)	Hungary

Table S2. Rainfall and average air temperatures between Jan 2011 and Dec 2013.

	Precipitation [mm]			Temperature [°C]		
	2011	2012	2013	2011	2012	2013
Jan	40	48	46	0,1	-1,8	-2,4
Feb	28	26	15	-4,1	-8	-0,1
Mar	21	28	29	3,2	5	-1
Apr	50	25	29	9,8	10	9,9
May	50	4	70	14,7	16	15,6
June	85	102	103	18,3	18,3	18,7
July	230	58	33	19	21,4	19,5
Aug	25	33	15	20,5	19,5	19,5
Sept	10	26	45	17,2	15,5	12,5
Oct	28	56	22	8,8	9,2	11,3
Nov	1	17	72	3,7	6,4	6,2
Dec	27	18,4	6	3	-2,4	1,8