

SUPPLEMENTARY MATERIALS

Article title:

A chromosome arm from *Thinopyrum intermedium* × *Thinopyrum ponticum* hybrid confers increased tillering and yield potential in wheat

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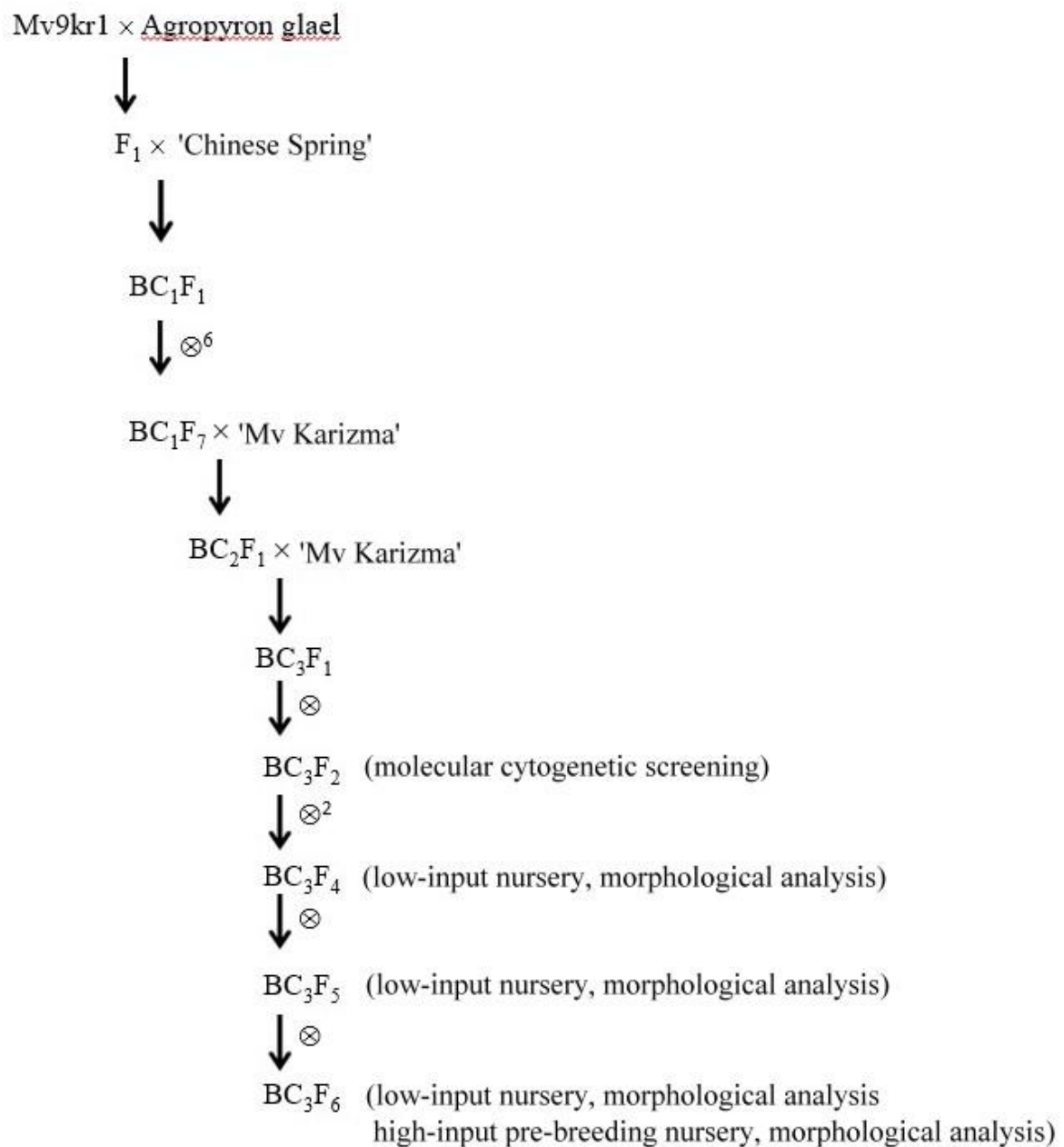
Supplementary Fig. S1 Development of the wheat/*A. glael* translocation line WT153397. The *in situ* hybridization experiments were carried out in the BC₃F₂ and subsequent generations. The plants were phenotypically characterized in the BC₃F₄-F₆ generations. ⊗: self-fertilization.

Supplementary Fig. S2 Capillary gel electrophoretogram of 6DL chromosome-specific SSR markers. The markers *Xcfd95* and *BE518349* amplified specific PCR fragments on both the parental wheat genotypes (Mv9kr1 and 'Mv Karizma') and *A. glael*. The PCR amplicons specific for 6DL in the parental wheat genotypes and *Ae. tauschii* are indicated by black arrows. The polymorphic fragments (red arrows) amplified on *A. glael* and the line WT153397 indicate that the wheat 6DL is replaced by a chromosome segment from *A. glael* in the translocated chromosome. The control durum wheat cultivar Langdon, which lacks D genome, did not produce 6DL-specific PCR fragments. A 35-500 bp DNA ladder was used as a molecular-weight size marker.

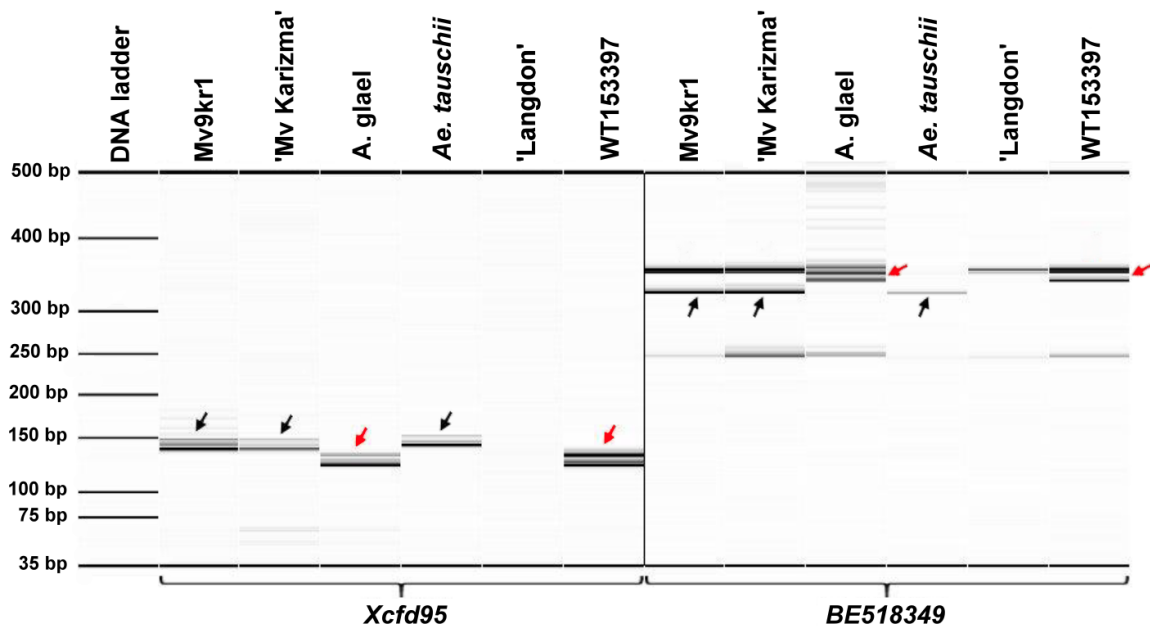
Supplementary Table S1 Details of markers used for PCR experiments

Supplementary Table S2 PCR amplification by 6D-specific SSR and COS markers on the bread wheat genotypes Mv9kr1 and 'Mv Karizma,' as well as *A. glael* and the translocation line WT153397

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Supplementary Table S1 Details of markers used for PCR experiments

Marker name	Forward primer (5'-3')	Reverse primer (5'-3')	Ta (°C)
<i>Xcfd49</i>	TGAGTTCTTCTGGTGAGGCA	GAATCGGTTCAACAAGGGAAA	60
<i>Xbarc173</i>	GGGGATCCTTCAACAATAACA	GCGAGATGGCATTTTTAAATAAAGAGAC	50
<i>Xcfd75</i>	GCATAAACTTGGACCTGGA	GCTAAGCCACGCTACCACTC	60
<i>Xgdm132</i>	ACCGCTCGGAGAAAATCC	AGGGGGGCAGAGGTAGG	60
<i>Xgpw1034</i>	TCGCCTGCCTAGTAAGCATT	TATCCCGTTGCAAGCTATCC	60
<i>Xgdm141</i>	ATGGAGACCATGGACCAGAG	GGCGGTGTTCTTATGCC	60
<i>Xcfd42</i>	AGGTTCTAGGGGGCATGTCT	GCTCTCAATGACTGCACTGG	60
<i>Xbarc196</i>	GGTGGGTTTTATCGAATAGATTTGCT	GCGTTTCGTCAAGATTAATGCAGGTTT	50
<i>Xgpw1019</i>	AATTCGATGACTTTGGGGTG	AAGCCCAGGCTAATTCTGGT	60
<i>BE498099</i>	ATCTGTTTACTGCGCGTTCC	CACGGACAAAACAGAAGGAC	60
<i>Xgpw1101</i>	ATCCACTGTCCATCGGTTTC	CAGCGTCTGTCTCCCAATTC	60
<i>Xcfd188</i>	AATGGCTTCACTGTTTGCCT	AAATGGTCCCAGCATTCAAG	60
<i>BE518349</i>	ATCGGGTACAAGCACCAAGTC	GCCGCAGATGGCGCCGAGGC	60
<i>Xcfd95</i>	AATCCTGACTTTAAAGCCTTTCC	CATCTGTATGATATTTTGGAGGTCA	60
<i>Xcfd287</i>	TCAAGAAGATGCGTTCATGC	GGGAGCTTTCCTAGTGCTT	60
<i>Xgpw5135</i>	TTTGTAAGTTGCCTGTGACCC	GGTGGAGACAACGACTGGC	60
<i>Xgpw4308</i>	GATCTGTTTCTTGTTGCTGG	TGGCCGCGTATGTTAGAAAG	60
<i>Xbarc175</i>	GCGTAACAGAAGCGGAGAAAAGC	GCGAATCATTTAGTGTTAGGTGGCAGTG	55
<i>Xbarc1121</i>	GCGAGCAAACCTGATCCCCAAAAG	TATCGGTGAGTACGCCAAAAACA	52
<i>Xgpw362</i>	GAATCGTCAATGCCCTCTA	CCCTCTATCGGTCTTTGCTG	60
<i>Xgpw4372</i>	GAGGGAGTAGACATGGTCGC	GAACAAAGCGGGAGTGACAT	60
<i>Xcfd5</i>	TGCCCTGTCCACAGTGAAG	TTGCCAGTTCCAAGGAGAAT	60
<i>Xgpw4005</i>	GGTTCACCTCAATAATCGGC	GTTCTGGTACGGGTCAATGG	60
<i>Xcfd45</i>	TCTCTCCAGTTGCTCCTCGT	ATGTGGAACCGGTCTACTCG	60
<i>Xgpw5179</i>	CCATTCCGCAAATGATGATA	GCGTATTCGGGTTGTTTCATT	60
<i>Xcfd60</i>	TGACCGGCATTCAAGTATCAA	TGGTCACTTTGATGAGCAGG	60
<i>Xgpw5205</i>	ACGGGTCATATTCCTTGGG	ATGGTCACTTTGATGAGCAGG	60
<i>Xgpw7433</i>	GTACATGGAAGAGACCACACCA	CGCTGAGCAAGGACGATAG	60

Ta: annealing temperature

Supplementary Table S2 PCR amplification by 6D-specific SSR and COS markers on the bread wheat genotypes Mv9kr1 and 'Mv Karizma,' as well as *A. glael* and the translocation line WT153397

Marker name	Location	Position on 6D (Mbp)	Amplicons		
			Bread wheat	<i>A. glael</i>	WT153397 (wheat/ <i>A. glael</i>)
<i>Xcfd49</i>	6DS	1.77	+	+	+/-
<i>Xbarc173</i>	6DS	13.04	+	+	+/-
<i>Xcfd75</i>	6DS	14.22	+	-	+/-
<i>Xgdm132</i>	6DS	14.22	+	+	+/-
<i>Xgpw1034</i>	6DS	16.30	+	+	+/-
<i>Xgdm141</i>	6DS	22.12	+	+	+/-
<i>Xcfd42</i>	6DS	22.14	+	+	+/-
<i>Xbarc196</i>	6DS	59.74	+	-	+/-
<i>Xgpw1019</i>	6DS	69.90	+	+	+/-
<i>BE498099</i>	6DS	128.26	+	+	+/-
<i>Xgpw1101</i>	6DS	137.54	+	+	+/-
<i>Xcfd188*</i>	6DL	238.12	+	+	-/+
<i>BE518349*</i>	6DL	302.04	+	+	-/+
<i>Xcfd95*</i>	6DL	318.15	+	+	-/+
<i>Xcfd287</i>	6DL	326.98	+	-	-/-
<i>Xgpw5135</i>	6DL	358.75	+	-	-/-
<i>Xgpw4308</i>	6DL	402.20	+	-	-/-
<i>Xbarc175</i>	6DL	411.88	+	-	-/-
<i>Xbarc1121</i>	6DL	437.60	+	-	-/-
<i>Xgpw362*</i>	6DL	453.02	+	+	-/+
<i>Xgpw4372</i>	6DL	455.76	+	-	-/-
<i>Xcfd5</i>	6DL	456.46	+	-	-/-
<i>Xgpw4005*</i>	6DL	458.38	+	+	-/+
<i>Xcfd45</i>	6DL	459.18	+	-	-/-
<i>Xgpw5179</i>	6DL	461.46	+	-	-/-
<i>Xcfd60</i>	6DL	466.79	+	-	-/-
<i>Xgpw5205</i>	6DL	466.79	+	-	-/-
<i>Xgpw7433</i>	6DL	472.72	+	+	-/-

+: the marker amplified a specific PCR fragment (or fragments)

-: the marker did not amplify a specific PCR fragment (or fragments)

*: represents markers that amplified *A. glael*-specific (polymorph) PCR products in the WT153397 line