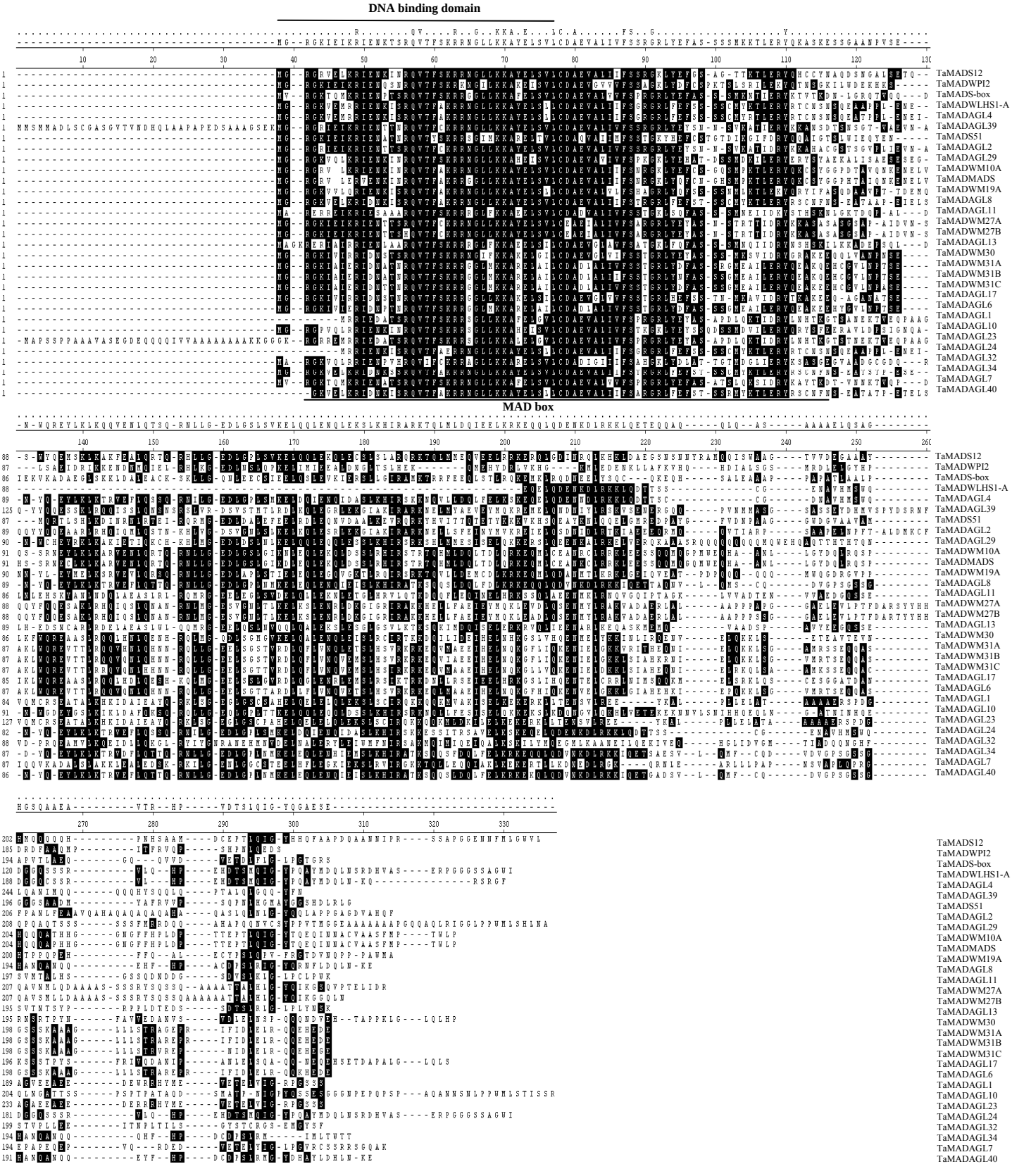
Appendix A Information of the wheat MADS TF genes characterized in this study

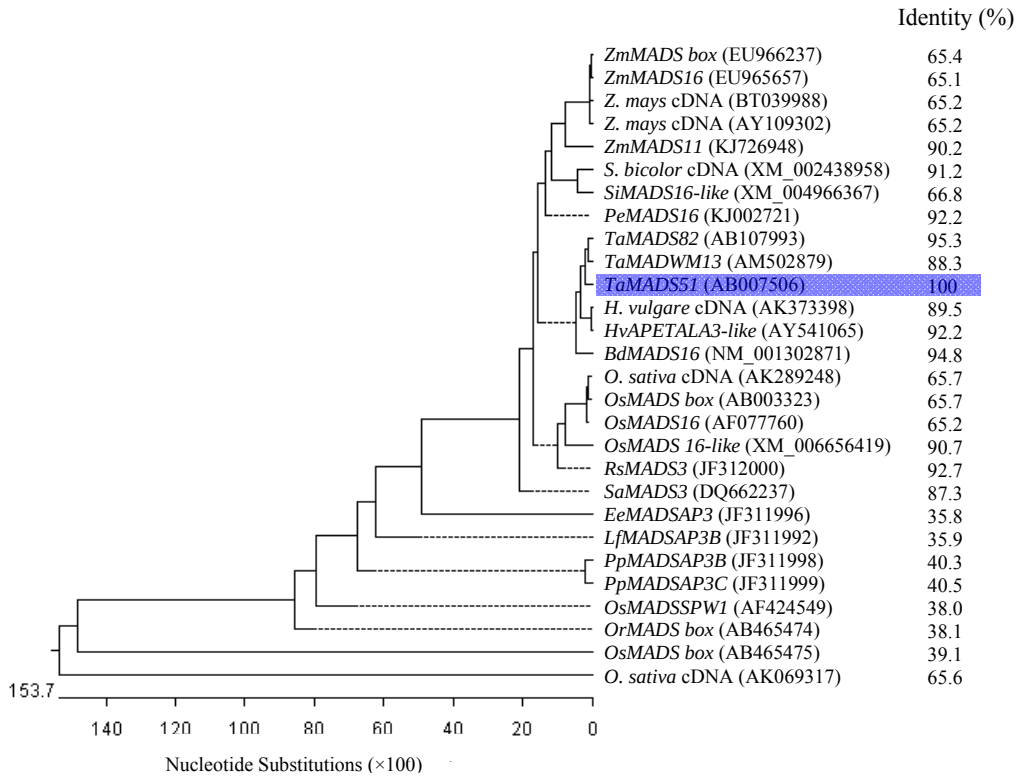
Gene name designated in this study	Gene name supplemented in the chip	Accession number	Probe set name in the chip	cDNA full length (bp)	Translated amino acids (aa)	Molecular weight (kDa)	Isoelectric point (pI)
TaMADAGL1	*AGL1*	DQ512330	A_99_P649497	908	219	24.55	6.77
TaMADAGL2	*AGL2*	AM502865	A_99_P197631	1077	254	28.56	9.28
TaMADAGL4	*AGL4*	AB295664	A_99_P008041	994	225	26.09	8.22
TaMADAGL6	*AGL6*	DQ512329	A_99_P129160	911	232	26.35	9.29
TaMADAGL7	*AGL7*	DQ512363	A_99_P064945	1000	260	25.93	9.63
TaMADAGL8	*AGL8*	AM502886	A_99_P006761	1028	227	26.20	8.70
TaMADAGL10	*AGL10*	DQ512331	A_99_P072890	1146	267	29.88	8.52
TaMADAGL11	*AGL11*	AM502890	A_99_P016434	1297	228	25.42	5.74
TaMADAGL13	*AGL13*	AM502897	A_99_P413367	1171	226	25.46	6.45
TaMADAGL23	*AGL23*	DQ512340	A_99_P143368	1003	263	28.83	7.77
TaMADAGL24	*AGL24*	DQ512341	A_99_P649262	799	231	26.31	6.86
TaMADAGL29	*AGL29*	AM502871	A_99_P007246	1255	274	31.33	9.29
TaMADAGL32	*AGL32*	DQ512350	A_99_P329151	828	229	25.84	6.85
TaMADAGL34	*AGL34*	DQ512351	A_99_P129168	793	221	25.59	8.06
TaMADAGL39	*AGL39*	AB465688	A_99_P131130	1278	273	30.91	8.91
TaMADAGL40	*AGL40*	DQ512370	A_99_P101420	683	224	25.94	8.12
TaMADWM10A	*WM10A*	AM502875	A_99_P531057	1226	252	29.03	8.95
TaMADWM19A	*WM19A*	AM502884	A_99_P168224	1202	236	27.21	8.54
TaMADWM27A	*WM27A*	AM502894	A_99_P195763	1073	255	28.28	9.42
TaMADWM27B	*WM27B*	AM502895	A_99_P195818	1081	251	27.63	9.42
TaMADWM30	*WM30*	AM502900	A_99_P148467	1118	240	27.51	8.38
TaMADWM31A	*WM31A*	AM502901	A_99_P195493	1155	232	26.36	8.75
TaMADWM31B	*WM31B*	AM502902	A_99_P195498	1164	232	26.37	9.35
TaMADWM31C	*WM31C*	AM502903	A_99_P195814	1122	230	26.03	8.27
TaMADWM32B	*WM32B*	AM502905	A_99_P130915	1013	241	27.13	8.82
TaMADS	*MADS*	AM502876	A_99_P220726	1233	252	28.98	8.69
TaMADS-box	*MADS-box*	AB281427	A_99_P169114	939	222	24.80	8.63
TaMADS12	*TaMADS12*	AB007505	A_99_P001746	1176	258	29.35	8.71
TaMADS82	*TaMADS82*	AK332414	A_99_P133090	1128	229	25.98	8.66
TaMADWPI2	*WPI2*	AB107992	A_99_P011094	1025	209	24.04	7.52
TaMADWLHS1-A	*WLHS1-A*	AB295662	A_99_P603912	784	170	19.21	7.27
TaMAD;1		TC374784	A_99_P220716				
TaMAD;2		TC420046	A_99_P266871				
TaMAD;3		TC372780	A_99_P278321				
TaMAD;4		TC445232	A_99_P317731				
TaMAD;5		TC393933	A_99_P317741				
TaMAD;6		TC399203	A_99_P340836				
TaMAD;7		TC410384	A_99_P347106				
TaMAD;8		TC417485	A_99_P356311				
TaMAD;9		TC459187	A_99_P357861				
TaMAD;10		TC391482	A_99_P393772				
TaMAD;11		TC378148	A_99_P398242				
TaMAD;12		TC371052	A_99_P409072				
TaMAD;13		TC375063	A_99_P413197				
TaMAD;14		TC393565	A_99_P436297				
TaMAD;15		TC404326	A_99_P450792				
TaMAD;16		TC404376	A_99_P450917				
TaMAD;17		TC409709	A_99_P458767				
TaMAD;18		TC412868	A_99_P463647				
TaMAD;19		TC415008	A_99_P467357				
TaMAD;20		TC433067	A_99_P503122				
TaMAD;21		TC446981	A_99_P536237				
TaMAD;22		DY761369	A_99_P621437				
TaMAD;23		TC425482	A_99_P220766				

Appendix B Primers used in this study

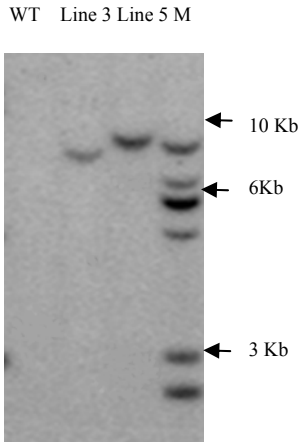
Gene name	Forward (5′-)	Reverse (5′-)
TaMADS51	TCGGCTAATCGATCACGGCT	CAGTCGAGCACTACGGCGTT
TaMADAGL12	GATCAACTACATGGTCAAAAGGG	ACCGGAACAGTTGAGTACTGAT
TaMADWM32B	GAGGTGCCACTGATGCAAAT	TCTGTGCACTTTTCTTTATGGG
TaMADWM31C	GCTGAGTATTGCTCATGAGCAG	CTTGCCTCCTTGTGTATATCGA
Tatubulin	AGAACACTGTTGTAAGGCTCAAC	GAGCTTTACTGC CTCGAACATGG
TaMADS51 expression cassette	AAACCATGGGGCGGGGGAAGATTG	AAAGGTGACCGACATAAGGCATCA
Nttubulin	TACACAGGGGAAGGAATGG	CTCGAAACCAACGGTATC
NtPT	GCCATTCCATATCATCATTG	GACCTCATTTCTCTTCCCAC
NtPT1	CCATGGACTTCACTTGCTTG	ATTTCTCTTCCCACTTTCCC
NtPT2	GGTTCGTGATCATGTACTCA	GACCTCATTTCTCTTCCCAC
NtPT3	AGGGTACTGGTTCACCGTG	ATTATAATTACACACTTGGTCG
NtPT4	GCACTACTTAGTACAGTGCC	GCATCACAAAGTCTACCTCC



Appendix C Clustal alignment of the wheat MADS transcription factor proteins

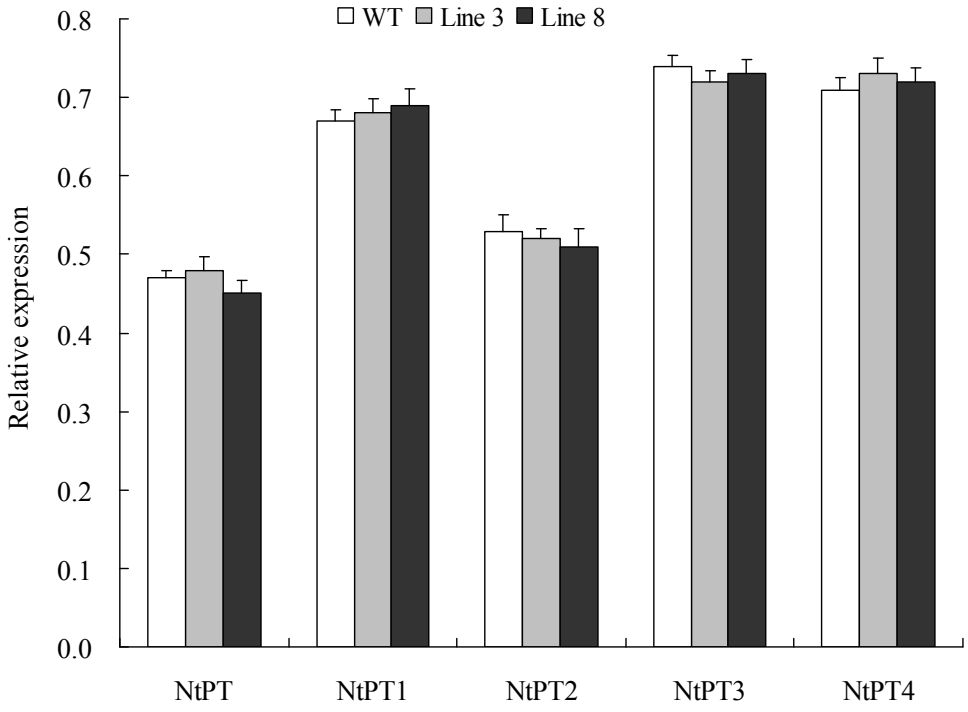


Appendix D Alignment results among *TaMADS52* and its homologous partners in diverse plant sepcies



Appendix E Southern blot analysis to detect the copy number of *TaMADS51* in the transgenic lines

WT, wild type; Line 3 and Line 5, two transgenic tobacco lines with overexpression of *TaMADS51*; M, DNA ladder. The genome DNA derived from WT and the transgenic lines were digested with *Eco*RI and subjected to hybridization with probes labeled by *TaMDS51* cDNA followed the conventional approach.



Appendix F Expression patterns of the NtPT genes in the Pi-deprived transgenic and WT plants