

Additional file 3

Association results for Mn concentration

Summary of significant ($-\log_{10}(P_{\text{Val}}) \geq 3$) marker-trait associations identified by GWA for the Mn leaf concentration quantification and the corresponding candidate genes from their Blast results. Allelic effect sign are estimated with respect to the minor allele. SNPs are ordered by location and genome position. (*Minor Allele Frequency, ** Standard error).

Location	Marker name	Position		GWA statistics				BLAST results		
		Chrom	cM	$-\log_{10}(P)$	MAF*	Effect	SE**	Gene	cM	Description
GH13A	SCRL_RS_156295	5H	31.8	3.1	0.28	0.031	0.009	-	-	-
	12_31044		95.1	3.6	0.12	0.043	0.012	-	-	-
	12_31048	6H	95.1	3.6	0.12	0.043	0.012	-	-	-
	SCRL_RS_6720		104.8	3.0	0.16	0.034	0.010	-	-	-