

SUPPLEMENTARY MATERIAL

TABLE S1 Concentrations of HM found in the IRs during wet (W) and dry (D) seasons

Season	Sample	Fe Available (mg/kg)	Mn Available (mg/kg)	Zn Available (mg/kg)
D	Tru-1	27.36	23.53	<1.00
D	Tru-2	70.83	14.00	1.29
D	Tru-3	65.82	28.04	2.01
D	Tor-1	63.15	20.82	2.41
D	Tor-2	49.38	19.72	1.72
D	Tor-3	21.84	23.97	2.23
D	Bra-1	10.88	7.79	<1.00
D	Bra-2	75.62	21.42	1.95
D	Bra-3	46.28	26.12	2.91
D	C-1	12.79	7.40	<1.00
D	C-2	10.40	8.41	<1.00
D	C-3	8.73	7.70	<1.00
W	Tru-1	17.38	2.3	<1.00
W	Tru-2	86	3.52	1.15
W	Tru-3	45.82	3.38	1.2
W	Tor-1	9.94	1.61	1.33
W	Tor-2	5.81	1.19	<1.00
W	Tor-3	16.44	3.43	1.76
W	Bra-1	13.7	2.37	<1.00
W	Bra-2	7.82	1.15	<1.00
W	Bra-3	9.64	1.26	1.32
W	C-1	16.38	1.14	<1.00
W	C-2	6.15	<1.00	1.02
W	C-3	21.16	7.70	<1.00

Techniques: Measured by Olsen solution extraction technique and quantified through atomic absorption spectrophotometry

Cu Available: <1.00 mg/kg

Tru: *Prosopis juliflora*; **Bra:** *Haematoxylum brasilet*; **Tor:** *Phitellobium dulce*

C: Control

Table S2 Most abundant molecular functions in HM resistance genes in RIs during the dry (D) and wet (W) seasons under the presence (V) or absence of vegetation (C).

Molecular Function (Metal)	Abundances (%)	Conditions				P-value			
		VW	CW	DV	DC	1	2	3	4
Copper-dependent protein binding(Cu)	20.53%	2332	5539	2467	3117				
Oxidoreductase(Cr, Mn, Co, Mo)	20.52%	3055	3855	2407	2216		+++	+++	*
Chromate tr. transporter(Cr)	8.37%	1969	2519	1891	2086		++		
Manganese ion binding(Mn)	7.87%	1634	895	2216	1748		++		
Hydrolase, Ligase (Co)	6.46%	1325	991	1123	1176	*	**	***	
Cation tr. transporter (Co,Zn,Cd)	6.3%	1268	1210	1130	944				
Metallic ions tr. transporter(Mn/Zn)	4.49%	978	959	705	865		+	*	+
Ligase(Co)	3.98%	742	779	799	1024		+++	+++	
Hydrolase, Metalloprotease(Zn)	2.66%	712	1622	396	399			+++	
DNA binding(Cu, Mn, Ni/Co)	2.61%	741	689	589	589				
Active tr, transporter of antimonite(As)	0.51%	211	181	273	227				*
Final totals		20170	25135	17813	17954	(*) 4	11	4	4
						(+) 0	5	4	1

P Value: 1: V y C (+, V>C); 2: W y D (+ D>W) ; 3: W y C -W y V (+,W y C>W y V) ; 4: D y V-D y C (+,D y C>D y V)

*:It indicates the opposite of what was previously stated

significant differences: ***/+++ p<0.001 **/++ p<0.01 */+ p<0.05

Tr : transmembrane

Table S3 Most abundant molecular functions in HM tolerance genes in RIs during the dry (D) and wet (W) seasons under the presence (V) or absence of vegetation (C).

Molecular Function (Metal)	Abundances (%)	CONDICIONS				P Value			
		VW	CW	DV	DC	1	2	3	4
Hydrolase / Protease(Zn)	20.78%	17377	12631	19874	15733	+	*	*	
Peptide tr. transporter(Ni)	18.69%	16272	15333	15337	15627				
Hydrolase(Ni)	17.13%	15961	14002	13317	12864		+		
ATP binding(Mn- Zn y Ni)	15.25%	12491	12782	13976	13842		+		
Cations tr. transporter (Co-Zn-Cd)	8.89%	11821	13798	8612	7250				
Oxidoreductase(Co- Cr- Mn- Mo y Zn)	5.06%	4347	2794	4928	3398	+++	+	**	**
Ag ions tr. transporter(Ag)	3.34%	3426	2544	2361	2715		*		
Methyl transferase(Co)	2.00%	1471	3532	1208	1914	***		+++	++
Ligase(Co)	1.89%	2932	1722	4312	3511		+++	*	
Metal ion binding(Mn-Zn, Zn)	0.95%	1087	973	775	668				
Final totals		110750	107744	104673	99079	(*) 4	11	4	4
						(+) 0	5	4	1

P Value: 1: V y C (+, V>C); 2: W y D (+ D>W); 3: W y C -W y V(+, W y C>W y V); 4: D y V-D y C (+, D y C>D y V)

*: It indicates the opposite of what was previously stated

significant differences: ***/+++ p<0.001 **/++ p<0.01 */+ p<0.05

Tr: transmembrane