Table S1. Effects of AMF inoculation and year of cultivation on AMF root colonization at the end of tillering (GS26) and at booting growth stages (GS48), grain yield and yield components, grain proteins, and grain minerals of wheat genotypes.

Genotype	AMF	Year	AMF col. (%)		Grain yield and yield components				Grain proteins					Grain minerals					
			GS26	GS45	GY (g m^{-2})	Spikes (n. m^{-2})	K/S (n. spike^{-1})	KW (mg)	GPC (%)	GI (%)	glia/glut	H/L	S-/S+ glia	P	Fe	Zn	phy	phy/Fe	phy/Zn
G1	+M	2014/2015	11.0	17.5	548	697	25.3	33.4	11.5	77.0	0.80	0.75	0.18	6.9	28.0	16.7	14.3	86.7	44.4
G1	-M	2014/2015	15.8	17.9	398	385	25.2	44.5	11.1	55.0	0.99	0.35	0.28	4.2	29.2	17.6	15.0	85.7	43.9
G1	+M	2015/2016	10.6	16.0	578	408	21.3	30.4	11.9	50.0	0.73	0.68	0.18	8.3	35.4	23.9	9.9	41.4	23.6
G1	-M	2015/2016	6.7	10.0	585	439	37.9	33.7	10.7	33.5	0.89	0.43	0.25	8.9	30.7	20.9	8.7	41.1	24.0
G2	+M	2014/2015	10.4	22.4	436	387	31.5	38.9	12.5	85.5	0.89	0.79	0.36	7.7	35.3	25.8	13.6	57.2	33.4
G2	-M	2014/2015	18.3	12.8	412	420	21.1	50.4	12.5	89.0	0.88	0.54	0.15	6.7	36.4	22.7	18.0	79.6	42.1
G2	+M	2015/2016	6.4	12.2	379	360	18.9	49.3	11.8	74.0	0.96	0.61	0.26	10.5	49.9	30.6	10.6	36.1	17.9
G2	-M	2015/2016	6.3	9.5	298	478	17.0	35.9	10.9	61.0	0.73	0.51	0.15	8.3	59.1	19.9	11.6	57.4	16.6
G3	+M	2014/2015	13.4	18.8	538	887	19.4	33.0	11.2	63.0	0.87	0.71	0.29	5.7	31.9	15.6	14.0	90.2	36.7
G3	-M	2014/2015	9.7	13.5	281	319	17.7	52.3	13.4	69.0	0.86	0.33	0.17	8.5	32.4	22.0	14.5	67.5	38.2
G3	+M	2015/2016	8.4	12.4	508	447	20.4	30.0	11.1	42.0	0.94	0.54	0.32	8.3	31.9	18.9	12.0	64.0	31.9
G3	-M	2015/2016	8.5	10.8	418	442	29.2	30.6	11.0	39.5	0.88	0.32	0.19	5.4	28.4	22.4	11.9	52.4	35.3
G4	+M	2014/2015	12.8	16.5	445	429	26.3	42.6	11.8	92.0	0.83	0.49	0.18	8.0	31.8	16.3	14.7	93.3	39.0
G4	-M	2014/2015	13.1	10.0	362	459	18.4	45.7	11.2	83.0	0.76	0.42	0.24	6.8	29.9	16.0	13.5	85.2	38.5
G4	+M	2015/2016	9.8	15.2	523	452	20.2	39.6	12.2	60.0	0.91	0.51	0.22	6.7	45.9	21.9	12.9	58.6	25.5
G4	-M	2015/2016	8.3	11.3	339	415	18.9	42.7	11.8	38.0	0.74	0.43	0.22	5.9	31.4	24.4	14.8	61.1	39.8
G5	+M	2014/2015	12.0	26.0	466	403	24.8	48.6	11.2	63.5	0.82	0.73	0.41	6.4	34.7	17.6	14.9	85.0	37.5
G5	-M	2014/2015	18.9	16.5	274	365	19.9	40.0	12.6	56.0	0.79	0.42	0.16	9.9	21.8	18.8	16.2	89.3	65.5
G5	+M	2015/2016	6.4	10.6	386	384	16.9	41.5	12.4	51.5	0.70	0.60	0.25	8.8	53.6	23.4	6.5	27.6	11.0
G5	-M	2015/2016	7.7	11.7	394	402	19.7	45.6	10.7	52.5	0.82	0.40	0.15	7.2	35.9	27.4	12.1	43.8	28.7
G6	+M	2014/2015	12.3	18.5	507	456	22.9	49.9	12.7	78.0	0.78	0.64	0.19	10.6	34.2	19.3	16.7	86.2	41.8
G6	-M	2014/2015	12.9	8.8	509	785	21.5	33.6	11.0	95.0	0.81	0.40	0.20	5.2	27.4	15.3	14.7	95.1	45.2
G6	+M	2015/2016	11.4	11.6	543	475	17.2	46.9	13.3	90.0	0.81	0.61	0.16	7.8	40.9	21.4	10.4	48.6	21.8
G6	-M	2015/2016	10.1	8.7	449	429	21.1	47.4	11.7	94.0	0.72	0.45	0.18	6.9	36.4	21.3	8.1	37.9	18.8
G7	+M	2014/2015	13.6	22.5	436	540	26.9	34.8	12.7	91.0	0.88	0.58	0.34	8.8	35.8	33.0	16.0	48.1	38.2
G7	-M	2014/2015	15.5	20.8	522	711	22.4	36.7	10.8	96.0	0.69	0.67	0.16	6.3	29.5	17.8	14.1	79.0	42.2
G7	+M	2015/2016	9.1	16.1	314	468	16.6	37.0	12.3	97.0	0.97	0.45	0.30	10.4	53.9	27.9	7.2	25.6	11.9
G7	-M	2015/2016	5.1	8.1	308	488	14.6	35.2	10.4	98.5	0.70	0.64	0.11	7.7	33.9	26.9	5.1	18.8	13.0
		SE	2.5	2.1	55	57	1.7	1.7	0.3	2.8	0.02	0.02	0.01	1.1	3.7	2.2	1.1	7.7	3.7

GY: grain yield; HI: harvest index; Spikes: spike density; K/S: number of kernel per spike; KW: kernel weight; GPC: grain protein concentration; GI: gluetn index; glia/glu: gliadin-to-gluten ratio; H/L: HMW-GS-to-B-type LMW-GS ratio; S-/S+ glia: sulphur-to-shulphur-rich gliadin fractions ratio; P: grain phosphorus concentration; Fe: grain iron concentration; Zn: grain zinc concentration; phy/Fe: phytate-to-grain iron ratio; phy/Zn: phytate-to-grain zinc ratio.

Table S2. *P* values of the correlation values among AMF root colonization (AMF col.) at the end of tillering and at booting growth stages (GS26 and GS48, respectively) wheat agronomic and quality parameters. In bold statistically significant P values according to the correlation of Pearson (r) on square root transformed and standardized data (standardization based on the variables over the maximum value).

	AMF col. GS26	AMF col. GS45	GY	Spikes	K/S	KW	GPC	GI	glia/glut	HMW/ LMW	S-/S+ glia	P	Fe	Zn	phy
AMF col. GS26															
AMF col. GS45	**0.005**														
GY	0.373	**0.025**													
Spikes	0.687	0.092	**<0.001**												
K/S	0.942	0.308	**<0.001**	0.189											
KW	0.267	0.920	**0.011**	0.909	**0.004**										
GPC	0.143	0.177	0.977	0.170	0.375	**0.001**									
GI	**0.050**	0.178	**0.001**	**0.001**	0.410	**0.006**	**0.050**								
glia/glut	0.542	**0.025**	0.662	0.761	0.236	0.181	0.358	0.324							
HMW/LMW	0.680	**<0.001**	**<0.001**	**<0.001**	0.265	0.368	0.656	**0.007**	0.100						
S-/S+ glia	0.595	**<0.001**	0.408	0.741	0.330	0.771	0.706	0.156	**<0.001**	**0.047**					
P	0.618	**0.025**	0.101	0.255	0.935	0.337	**<0.001**	0.088	0.215	**<0.001**	**0.003**				
Fe	**0.001**	0.204	0.624	0.760	0.343	0.095	0.640	0.425	0.835	0.166	0.558	**0.001**			
Zn	**0.018**	0.485	0.856	0.928	0.708	0.467	0.285	0.943	0.131	0.665	0.526	**0.001**	**<0.001**		
phy	**<0.001**	**<0.001**	0.431	0.272	0.568	0.576	0.069	0.892	0.055	0.790	0.329	0.169	**0.001**	**0.022**	

GY: grain yield; HI: harvest index; Spikes: spike density; K/S: number of kernel per spike; KW: kernel weight; GPC: grain protein concentration; GI: gluetn index; glia/glu: gliadin-to-gluten ratio; H/L: HMW-GS-to-B-type LMW-GS ratio; S-/S+ glia: sulphur-to-shulphur-rich gliadin fractions ratio; P: grain phosphorus concentration; Fe: grain iron concentration; Zn: grain zinc concentration; phy/Fe: phytate-to-grain iron ratio; phy/Zn: phytate-to-grain zinc ratio.

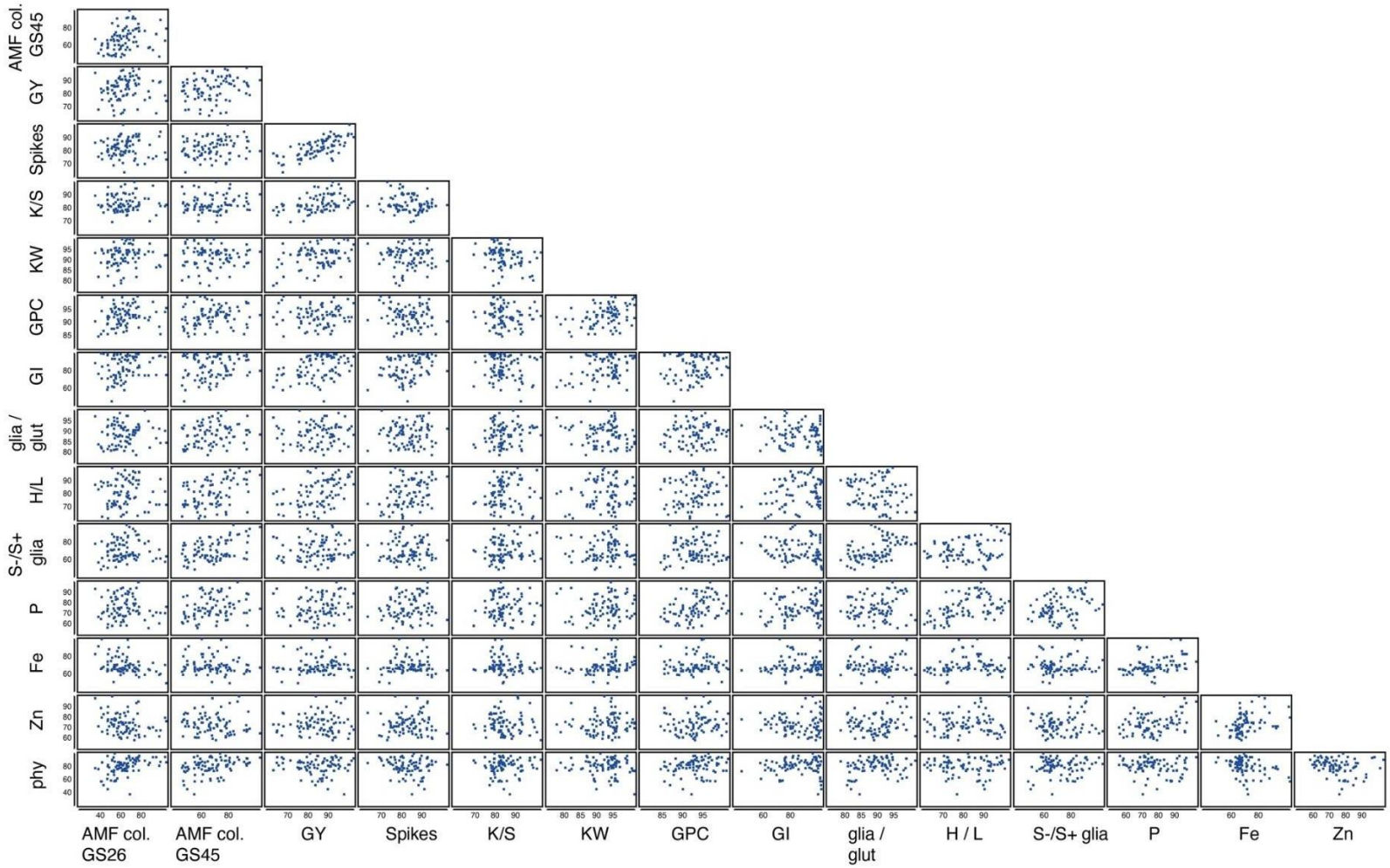


Figure S1. Scatterplots relative to the Pearson correlation among arbuscular mycorrhizal fungal colonization, yield and yield components, and proteins and minerals in grain. Parameters are: AMF root colonization (AMF col.) at the end of tillering (G26) and at booting growth stages (GS45); GY: grain yield; Spikes: spike density; K/S: number of kernels per spike; KW: kernel weight; GPC: grain protein concentration; GI: gluten index; glia/glu: glia-din-to-gluten ratio; H/L: HMW-GS-to-B-type LMW-GS ratio; S-/S+ glia: sulphur-poor to-sulphur-rich gliadin fractions ratio; P: grain phosphorus concentration; Fe: grain iron concentration; Zn: grain zinc concentration; phy: phytates concentration in grain. The input data matrix was square rooted and data were standardized by the total value of the variables (parameters). See Table 3 and Table S1 for correlation values and significance of correlations, respectively.