Supplementary Material

Table S1. Analysis of variance of cysteine content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.00068	0.00034		
Maize hybrid (A)	2	0.01286	0.00643	11.9648	0.0205
Error I	4	0.00215	0.00054		
Nitrogen fertilizer (B)	6	0.00609	0.00102	1.2921	0.2856
A × B	12	0.00865	0.00072	0.9170	0.5403
Error II	36	0.02830	0.00079		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S2. Analysis of variance of cysteine content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.00028	0.00014		
Maize hybrid (A)	2	0.00444	0.00222	8.0381	0.0397
Error I	4	0.00110	0.00028		
Nitrogen fertilizer (B)	6	0.00228	0.00038	0.3655	0.8959
A × B	12	0.00720	0.00060	0.5775	0.8455
Error II	36	0.03738	0.00104		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S3. Analysis of variance of methionine content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.00016	0.00008		
Maize hybrid (A)	2	0.00053	0.00027	2.8541	0.1698
Error I	4	0.00037	0.00009		
Nitrogen fertilizer (B)	6	0.00028	0.00005	0.3860	0.8831
A × B	12	0.00174	0.00014	1.1881	0.3280
Error II	36	0.00438	0.00012		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S4. Analysis of variance of methionine content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.00067	0.00034		
Maize hybrid (A)	2	0.00168	0.00084	3.2092	0.1474
Error I	4	0.00105	0.00026		
Nitrogen fertilizer (B)	6	0.00149	0.00025	1.2776	0.2921
A × B	12	0.00209	0.00017	0.8952	0.5599
Error II	36	0.00699	0.00019		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S5. Analysis of variance of lysine content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.01646	0.00823		
Maize hybrid (A)	2	0.08133	0.04066	5.1360	0.0786
Error I	4	0.03167	0.00792		
Nitrogen fertilizer (B)	6	0.06890	0.01148	1.3855	0.2470
A × B	12	0.15306	0.01276	1.5390	0.1554
Error II	36	0.29836	0.00829		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S6. Analysis of variance of lysine content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.01427	0.00713		
Maize hybrid (A)	2	0.01796	0.00898	2.2499	0.2215
Error I	4	0.01597	0.00399		
Nitrogen fertilizer (B)	6	0.08287	0.01381	0.4879	0.8130
A × B	12	0.20572	0.01714	0.6056	0.8230
Error II	36	1.01908	0.02831		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S7. Analysis of variance of grain lightness component [L*] in winter wheat.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	171.7544	85.8772		
Maize hybrid (A)	2	0.3882	0.1941	0.0022	0.9978
Error I	4	348.2864	87.0716		
Nitrogen fertilizer (B)	6	552.4566	92.0761	1.9039	0.1069
A × B	12	1070.5853	89.2154	1.8447	0.0774
Error II	36	1741.0466	48.3624		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S8. Analysis of variance of grain lightness component [L*] in spring wheat.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	5.1968	2.5984		
Maize hybrid (A)	2	42.0227	21.0113	2.5486	0.1933
Error I	4	32.9774	8.2443		
Nitrogen fertilizer (B)	6	40.5363	6.7560	0.7048	0.6477
A × B	12	35.5158	2.9597	0.3088	0.9835
Error II	36	345.0788	9.5855		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S9. Analysis of variance of chlorophyll a content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	217.8604	108.9302		
Maize hybrid (A)	2	16.5059	8.2530	0.0898	0.9159
Error I	4	367.5811	91.8953		
Nitrogen fertilizer (B)	6	270.5320	45.0887	1.3506	0.2608
A × B	12	780.9651	65.0804	1.9495	0.0607
Error II	36	1201.7915	33.3831		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S10. Analysis of variance of chlorophyll a content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	8.7666	4.3833		
Maize hybrid (A)	2	3.1250	1.5625	4.4135	0.0972
Error I	4	1.4161	0.3540		
Nitrogen fertilizer (B)	6	1.1005	0.1834	0.0952	0.9964
A × B	12	15.1137	1.2595	0.6538	0.7821
Error II	36	69.3490	1.9264		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S11. Analysis of variance of chlorophyll b content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	166.01	83.003		
Maize hybrid (A)	2	24.4932	12.2466	0.2750	0.7728
Error I	4	178.1158	44.5289		
Nitrogen fertilizer (B)	6	105.2904	17.5484	0.7437	0.6182
A × B	12	343.1064	28.5922	1.2117	0.3128
Error II	36	849.5153	23.5976		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S12. Analysis of variance of chlorophyll b content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	3.9035	1.9517		
Maize hybrid (A)	2	5.3281	2.6641	1.3360	0.3594
Error I	4	7.9765	1.9941		
Nitrogen fertilizer (B)	6	3.2892	0.5482	0.2676	0.9484
A × B	12	32.3115	2.6926	1.3146	0.2530
Error II	36	73.7393	2.0483		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S13. Analysis of variance of total polyphenol content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	26.3822	13.1911		
Maize hybrid (A)	2	22.3209	11.1604	1.5967	0.3092
Error I	4	27.9583	6.9896		
Nitrogen fertilizer (B)	6	97.5595	16.2599	1.3361	0.2668
A × B	12	80.4813	6.7068	0.5511	0.8655
Error II	36	438.1200	12.1700		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S14. Analysis of variance of total polyphenol content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	281.8680	140.9340		
Maize hybrid (A)	2	27.7119	13.8560	0.2066	0.8215
Error I	4	268.3241	67.0810		
Nitrogen fertilizer (B)	6	924.0333	154.0056	0.8212	0.5610
A × B	12	2245.9410	187.1618	0.9980	0.4702
Error II	36	6751.5167	187.5421		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S15. Analysis of variance of $ABTS^+$ cation radical content in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.0326	0.0163		
Maize hybrid (A)	2	0.0108	0.0054	0.3569	0.7201
Error I	4	0.0603	0.0151		
Nitrogen fertilizer (B)	6	0.1608	0.0268	2.4925	0.0404
A × B	12	0.3113	0.0259	2.4122	0.0206
Error II	36	0.3871	0.0108		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S16. Analysis of variance of $ABTS^+$ cation radical content in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.0423	0.0212		
Maize hybrid (A)	2	0.0139	0.0070	0.3788	0.7069
Error I	4	0.0735	0.0184		
Nitrogen fertilizer (B)	6	0.2180	0.0363	1.078	0.3936
A × B	12	0.4715	0.0393	1.166	0.3427
Error II	36	1.2130	0.0337		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S17. Analysis of variance of DPPH radical scavenging capacity in winter wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.0689	0.0344		
Maize hybrid (A)	2	0.0258	0.0129	0.2190	0.8124
Error I	4	0.2357	0.0589		
Nitrogen fertilizer (B)	6	0.4458	0.0743	2.1105	0.0760
A × B	12	1.0929	0.0911	2.5872	0.0137
Error II	36	1.2673	0.0352		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.

Table S18. Analysis of variance of DPPH radical scavenging capacity in spring wheat grain.

Source of Variation	D.F.	S.S.	M.S.	F	*p*-value
Blocks	2	0.1067	0.0533		
Maize hybrid (A)	2	0.0017	0.0008	0.0089	0.9912
Error I	4	0.3710	0.0927		
Nitrogen fertilizer (B)	6	0.5375	0.0896	0.9977	0.4418
A × B	12	0.8957	0.0746	0.8313	0.6187
Error II	36	3.2326	0.0898		

D.F. – degrees of freedom; S.S. – sum of squares; M.S. – mean square.