## **Supporting Information**

Table S1

Quality control results and certified values of the NIST1567 wheat flour (mg/kg dry matter) and the limit of quantification (LOQ) of the procedure (mg/kg). Means and standard deviations (in brackets) of 3 analytical replicates

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	Analytical results	Certified values	LOQ
K	1311 (32)	1330 (3)	14
P	1321 (20)	1340 (6)	1
Mg	380 (7)	400 (2)	11
Ca	199 (8)	191 (4)	26
Si	7.5 (0.7)	-	2
Fe	13.2 (0.1)	14.1 (0.5)	1.0
Zn	11.5 (0.3)	11.6 (0.4)	0.3
Mn	9.4 (0.4)	9.4 (0.9)	0.1
Cu	2.1 (0.1)	2.1 (0.2)	0.1
Sr	0.93 (0.05)	-	0.06
Mo	0.45 (0.2)	0.48 (0.03)	0.01
Se	1.3 (0.1)	1.1 (0.2)	0.001
Cd	0.024 (0.001)	0.026 (0.002)	0.001

Figure S1

Correlations among different elements present in wheat grains ( $\blacksquare$ ) and its milling [flour ( $\blacksquare$ ), shorts ( $\blacktriangle$ ), bran ( $\bullet$ )] and pearling ( $\blacktriangle$ ) fractions.

