

Table S1. Mean value $\pm$ SE of each variable investigated in the three species considered.

Variable	barley	bread wheat	durum wheat
GY	1.74 $\pm$ 0.25	1.75 $\pm$ 0.24	1.91 $\pm$ 0.22
PC	13.82 $\pm$ 0.31 b	15.11 $\pm$ 0.38 a	14.44 $\pm$ 0.27 ab
TKW	38.54 $\pm$ 1.45 a	33.21 $\pm$ 0.88 b	38.12 $\pm$ 0.75 a
length	7.76 $\pm$ 0.22 a	6.18 $\pm$ 0.08 c	7.15 $\pm$ 0.08 b
width	3.05 $\pm$ 0.03 a	2.88 $\pm$ 0.05 b	2.93 $\pm$ 0.03 ab
thickness	2.75 $\pm$ 0.05	2.74 $\pm$ 0.05	2.79 $\pm$ 0.04
CIE L	45.07 $\pm$ 2.37	46.89 $\pm$ 1.25	45.80 $\pm$ 1.11
CIE a	4.52 $\pm$ 0.29 b	5.72 $\pm$ 0.59 ab	6.70 $\pm$ 0.28 a
CIE b	13.36 $\pm$ 1.39	12.21 $\pm$ 0.67	13.28 $\pm$ 0.82
TAC	41.50 $\pm$ 10.96 ab	51.08 $\pm$ 10.39 a	14.29 $\pm$ 2.23 b
YPC	5.71 $\pm$ 0.31	5.13 $\pm$ 0.25	5.93 $\pm$ 0.33
Na	105.85 $\pm$ 6.16 a	59.81 $\pm$ 3.28 b	59.00 $\pm$ 3.28 b
Mg	1538.20 $\pm$ 35.92 a	1336.58 $\pm$ 31.77 b	1236.43 $\pm$ 33.56 b
P	3371.17 $\pm$ 189.26 b	3892.22 $\pm$ 126.98 a	3765.60 $\pm$ 112.98 ab
S	5135.48 $\pm$ 90.89 a	4537.49 $\pm$ 209.85 b	4540.51 $\pm$ 183.30 b
K	6038.47 $\pm$ 124.83 a	5117.75 $\pm$ 130.77 b	5514.38 $\pm$ 159.51 c
Ca	613.43 $\pm$ 43.26 a	468.92 $\pm$ 52.76 b	401.15 $\pm$ 22.74 b
Mn	27.62 $\pm$ 1.02 b	55.03 $\pm$ 1.86 a	50.81 $\pm$ 2.15 a
Fe	80.17 $\pm$ 4.26 a	67.96 $\pm$ 3.64 b	75.80 $\pm$ 2.70 ab
Cu	8.21 $\pm$ 0.35	5.92 $\pm$ 0.32	9.69 $\pm$ 3.88
Zn	35.90 $\pm$ 4.20	31.07 $\pm$ 2.23	28.55 $\pm$ 2.23
Mo	1.68 $\pm$ 0.07 a	1.30 $\pm$ 0.18 ab	1.14 $\pm$ 0.08 b

Values within a row not followed by the same letter are significantly different at $P < 0.05$. TAC, YPC and minerals are expressed as $\mu\text{g/g}$.

Figure S1 Weather data. The sowing and harvesting dates were highlighted in red for winter and green for spring, respectively.

