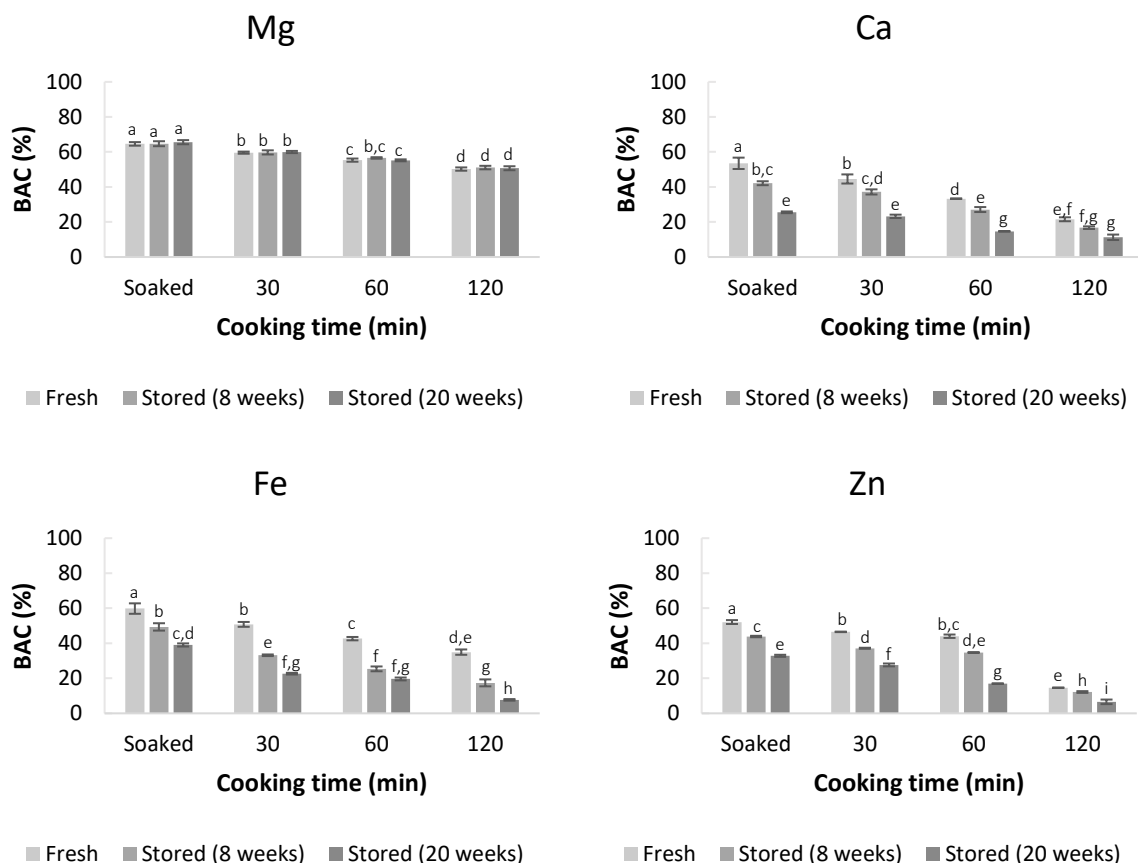
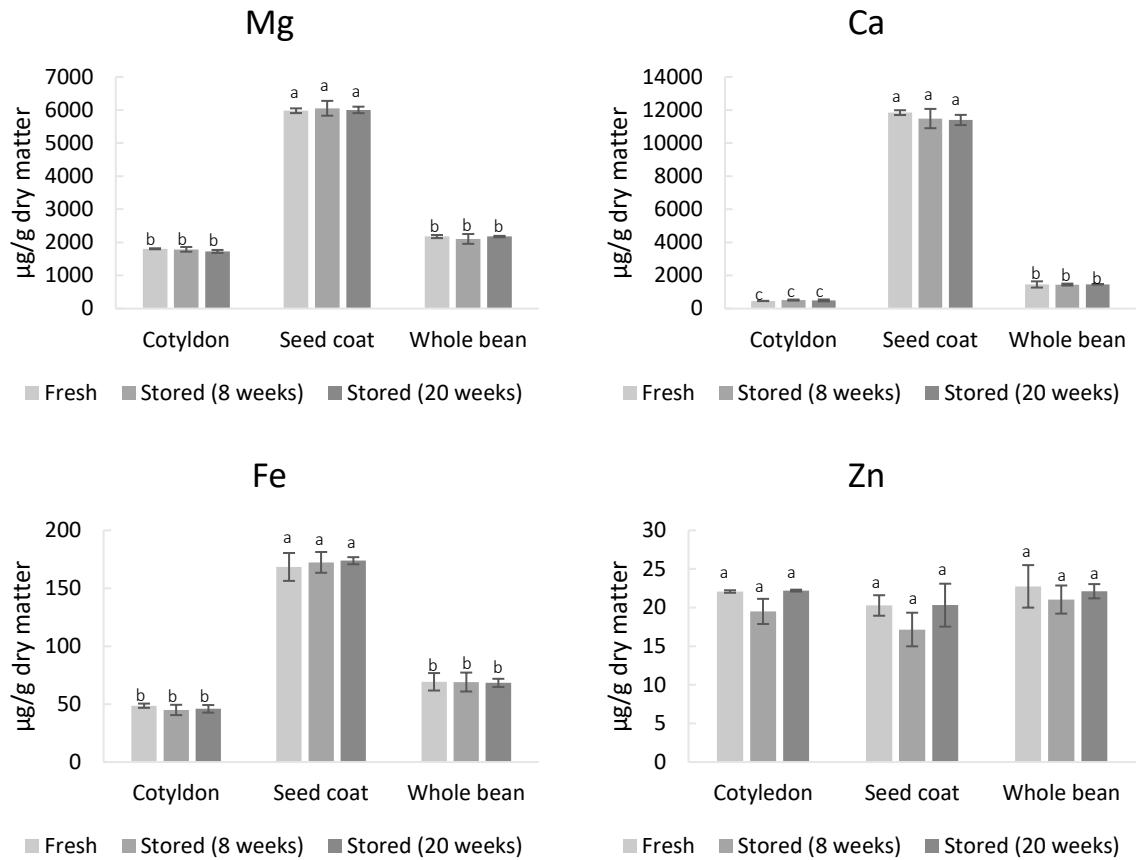


Supplementary figure 1



Supplementary figure 1. Mineral bioaccessibility (BAC) (%) of soaked and/or cooked whole beans (cooking time: 30, 60 or 120 min). Average values \pm standard errors. Mineral bioaccessibility experiments were performed in duplicate. Different lower case letters (a-i) indicate significant differences ($p < 0.05$) between samples for a certain mineral.

Supplementary figure 2



Supplementary figure 2. Mineral content ($\mu\text{g/g}$ dry matter) in cotyledon, seed coat and whole beans. Average value \pm standard errors. Determination of mineral content was performed in duplicate. Different lower case letters (a-c) indicate significant differences ($p < 0.05$) between samples for a certain mineral

Supplementary table 1A. Measured values (average \pm standard error) of certified reference material: BCR-129 (Joint Research Centre, European Commission). n=6. To have an appropriate accuracy of the method used, the measured values should be within a 10% range of the certified values.

	Mg	Ca	Fe	Zn
Certified values (mg/g)	1.450	6.400	0.114	0.032
Measured values (mg/g)	1.554 \pm 0.068	6.947 \pm 0.197	0.116 \pm 0.016	0.031 \pm 0.002
Certified value -10%	1.305	5.760	0.103	0.029
Certified value +10%	1.595	7.040	0.125	0.035

Supplementary table 1B. 10 mg raw common bean powder was spiked with ZnSO₄·7H₂O, incinerated and ashes were dissolved in 10 mL 1% HNO₃ solution prior to mineral analysis by ICP-OES. ZnSO₄·7H₂O was added to obtain an additional concentration of 1, 2 and 3 Zn mg/g sample. Mineral concentration is expressed as mg/g sample. n=2.

	Mg	Ca	Fe	Zn
Sample	2.062 \pm 0.052	1.516 \pm 0.032	0.071 \pm 0.003	0.024 \pm 0.004
Sample + Zn (1 mg/)	2.010 \pm 0.012	1.494 \pm 0.044	0.068 \pm 0.002	1.018 \pm 0.040
Sample + Zn (2 mg/L)	2.022 \pm 0.017	1.539 \pm 0.050	0.067 \pm 0.006	2.023 \pm 0.010
Sample + Zn (3 mg/L)	2.078 \pm 0.093	1.517 \pm 0.150	0.071 \pm 0.003	3.093 \pm 0.110

Supplementary table 2. Amount of leached minerals during soaking and cooking ($\mu\text{g/g}$ dry raw bean) for fresh, 8 weeks and 20 weeks stored beans (35°C and 80% R.H.). Average value \pm standard errors.

	Leached Mg ($\mu\text{g/g}$ dry raw bean)			Leached Ca ($\mu\text{g/g}$ dry raw bean)			Leached Fe ($\mu\text{g/g}$ dry raw bean)			Leached Zn ($\mu\text{g/g}$ dry raw bean)		
	<i>Fresh</i>	<i>8 weeks stored</i>	<i>20 weeks stored</i>	<i>Fresh</i>	<i>8 weeks stored</i>	<i>20 weeks stored</i>	<i>Fresh</i>	<i>8 weeks stored</i>	<i>20 weeks stored</i>	<i>Fresh</i>	<i>8 weeks stored</i>	<i>20 weeks stored</i>
Soaking	118.4 \pm 3.2	427.5 \pm 7.5	751.1 \pm 14.7	68.2 \pm 1.2	125.6 \pm 3.8	169.1 \pm 3.8	1.4 \pm 0.1	1.6 \pm 0.1	3.1 \pm 0.1	0.7 \pm 0.1	2.5 \pm 0.1	3.3 \pm 0.0
30 min cooking	492.4 \pm 6.3	417.5 \pm 20.2	272.1 \pm 14.9	81.6 \pm 2.1	55.9 \pm 4.3	43.1 \pm 2.3	6.1 \pm 0.1	5.2 \pm 0.4	4.6 \pm 0.1	2.9 \pm 0.1	2.1 \pm 0.1	1.7 \pm 0.1
60 min cooking	770.6 \pm 36.6	589.6 \pm 31.3	344.3 \pm 22.1	99.1 \pm 7.6	68.2 \pm 0.7	53.8 \pm 0.1	7.6 \pm 0.2	6.7 \pm 0.8	6.4 \pm 0.2	4.3 \pm 0.1	2.6 \pm 0.3	2.3 \pm 0.2
120 min cooking	1049.5 \pm 23.5	670.1 \pm 23.9	397.1 \pm 37.8	110.3 \pm 3.5	79.2 \pm 3.4	63.1 \pm 1.3	9.1 \pm 0.4	7.7 \pm 0.4	7.3 \pm 0.5	5.1 \pm 0.2	3.1 \pm 0.3	2.7 \pm 0.1