

Supplementary materials

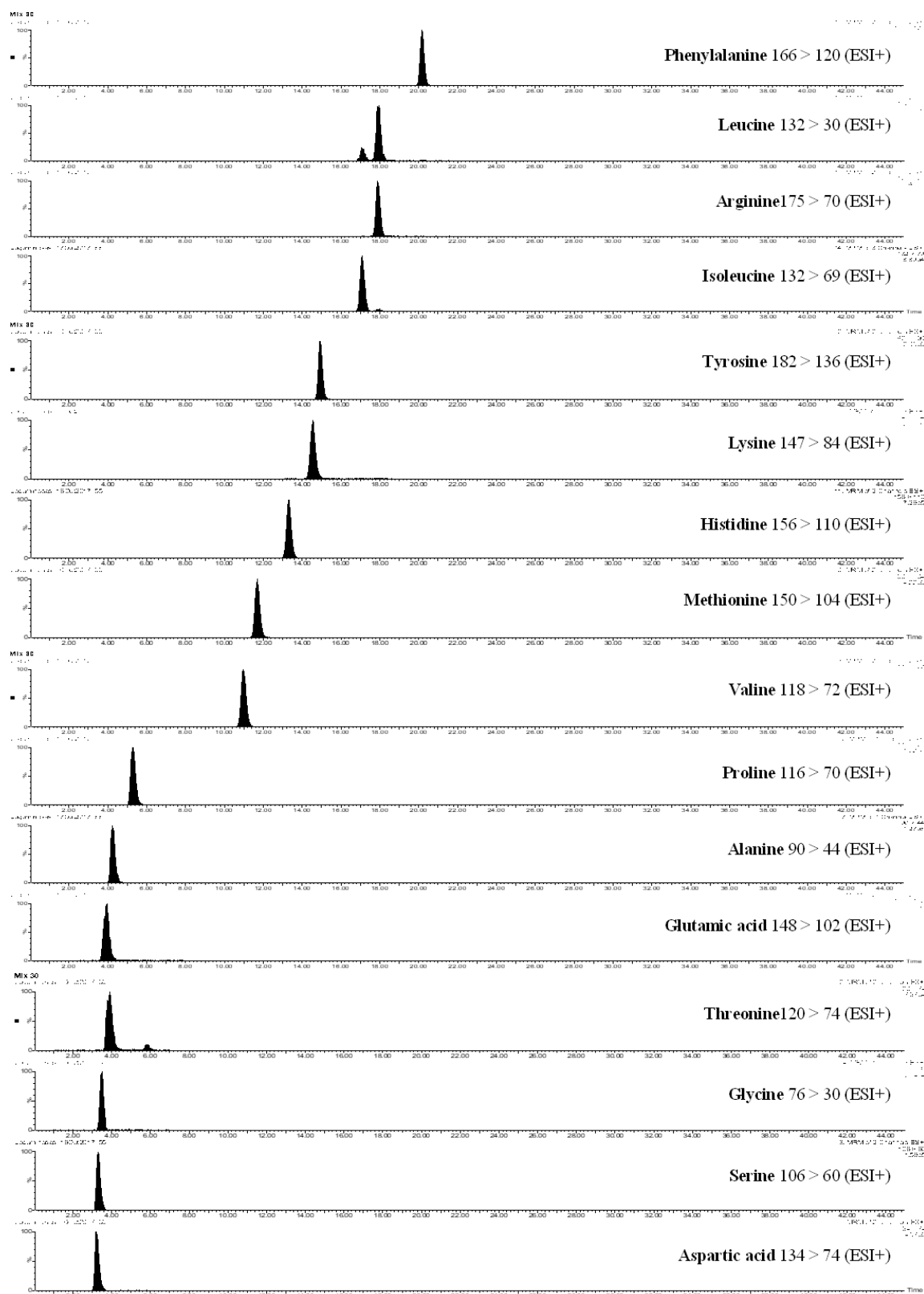


Figure S1. Multiple reaction monitoring chromatograms of the 16 amino acids present in a standard mixture, 30 μ M (Conditions of analysis according to experimental section).

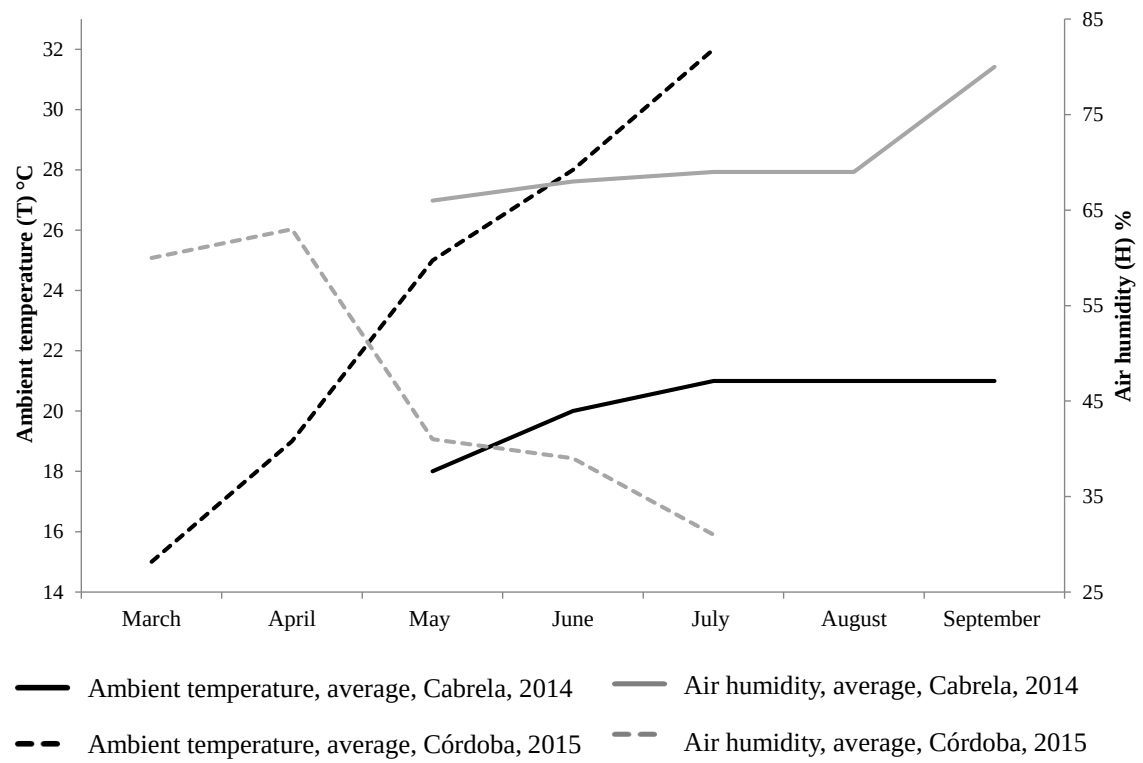


Figure S2. Average ambient temperatures and air humidity in Cabrela and in Córdoba, during the growing season [23].

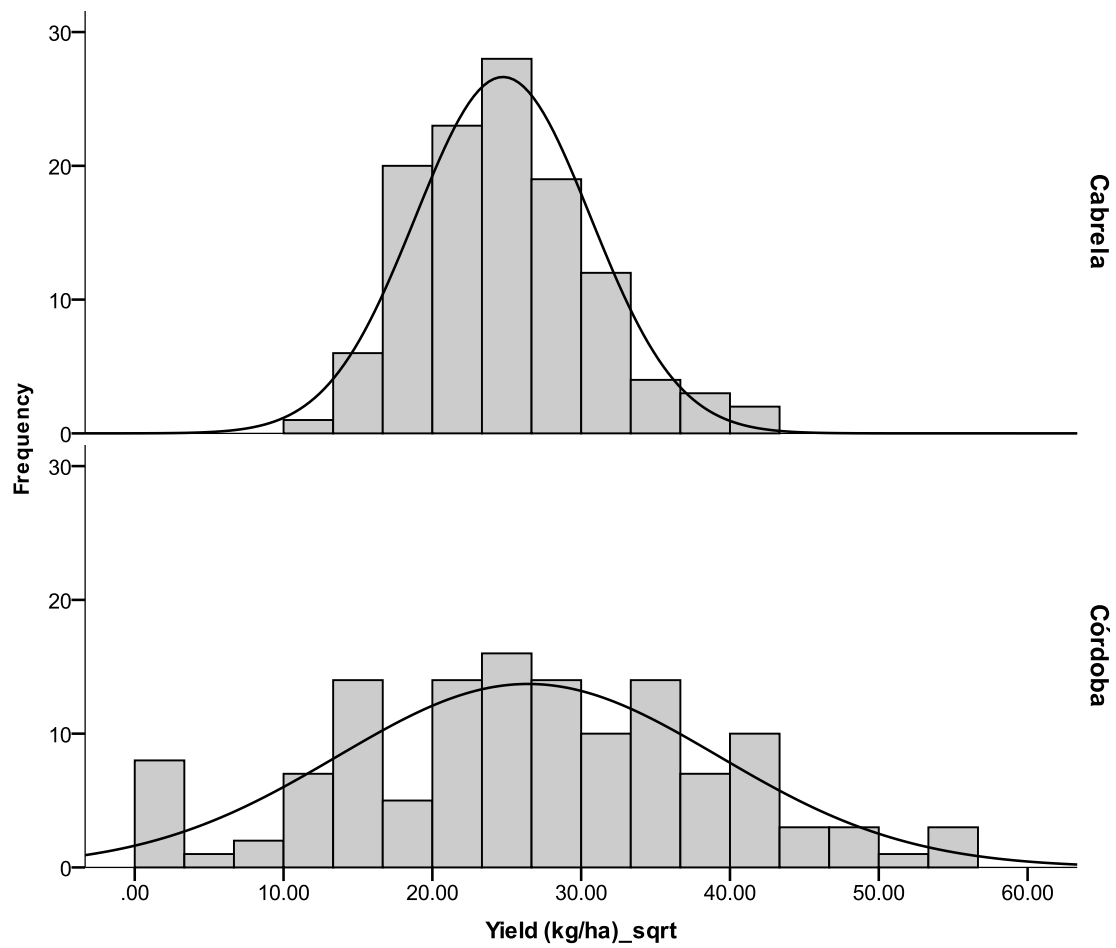


Figure S3. Frequency distribution for the average yield (kg/ha) of cropped common bean accessions in Cabrela (n=61) and Córdoba (n=66) field trials.

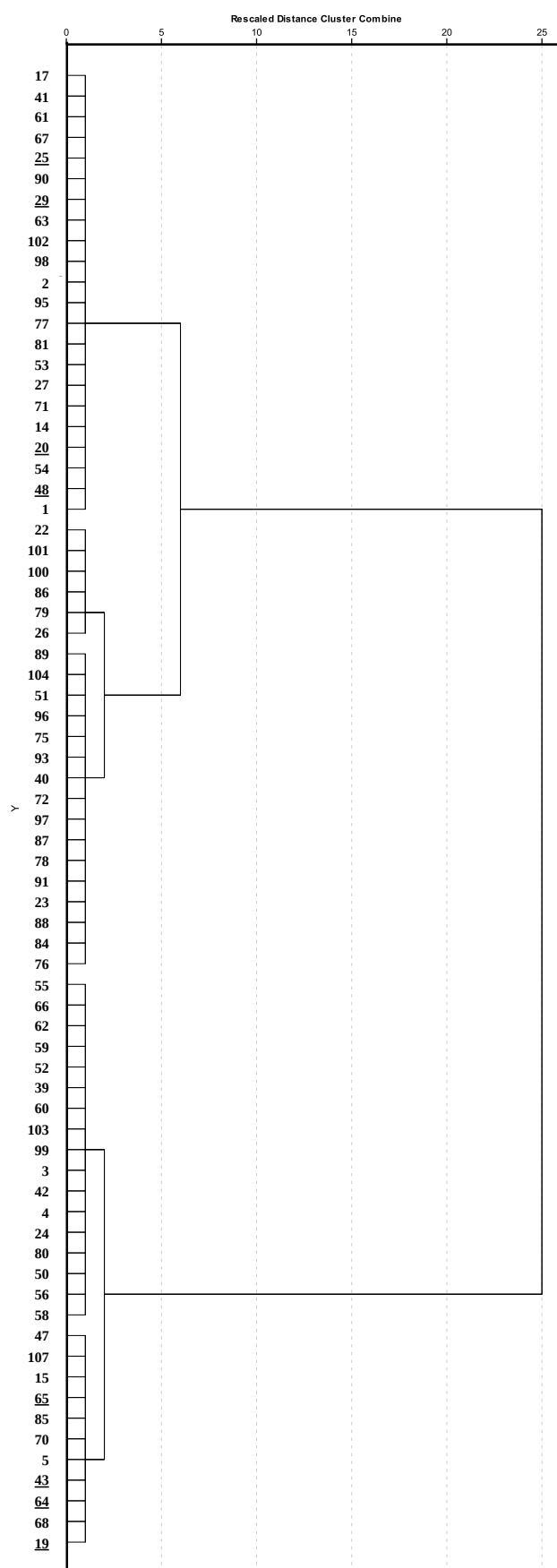
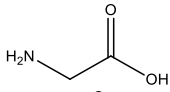
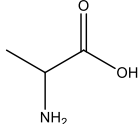
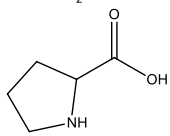
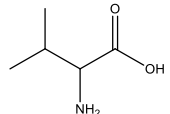
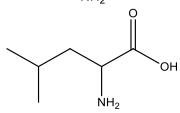
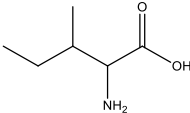
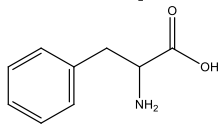
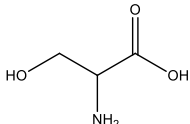
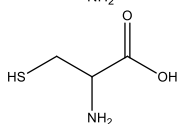
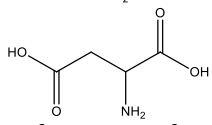
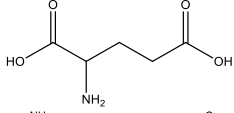
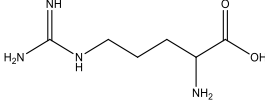


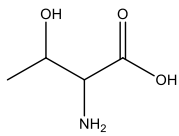
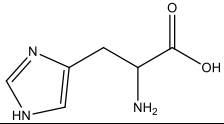
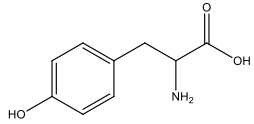
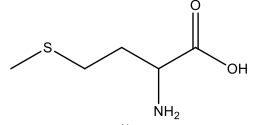
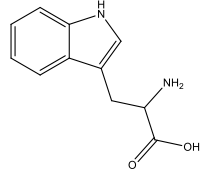
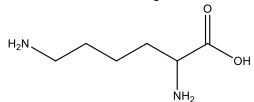
Figure S4. Dendrogram obtained by hierarchical clustering (Ward's method) for common bean accessions, based on trypsin inhibitor activity (TIA) measurements. The underlined accessions were selected for protein digestibility assays.

Table S1. Amino acids (AAs) classification and molecular structure [17].

Amino acid's classification	Abbreviation	Molecular Structure
Hydrophobic AAs		
NEAAs		
Glycine	Gly	
Alanine	Ala	
Proline	Pro	
EAAAs		
Valine	Val	
Leucine	Leu	
Isoleucine	Ile	
Phenylalanine	Phe	
Hydrophylic AAs		
NEAAs		
Serine	Ser	
Cysteine*	Cys	
Aspartic acid	Asp	
Glutamic acid	Glu	
Arginine	Arg	

NEAAs-“Non-Essential” amino acids; EAAAs-Essential amino acids; *Cys and Trp were not quantified in this study.

Table S1. Cont.

Amino acid's classification	Abbreviation	Molecular Structure
Hydrophylic AAs EAAs		
Threonine	Thr	
Histidine	His	
Amphipathic AAs NEAAs		
Tyrosine	Tyr	
EAAs		
Methionine	Met	
Tryptophan*	Trp	
Lysine	Lys	

NEAAs-“Non-Essential” amino acids; EAAs-Essential amino acids; *Cys and Trp were not quantified in this study.

Table S2. Morphology, gene pools (Mesoamerican; Andean; Mixed) and geographical origin of Portuguese common bean seeds accessions [22].

#	Accessions	Seed Color and Pattern	Seed Size ¹	Gene pool	Geographical origin in Portugal and Islands
1	579	White	Large	Mixed	Northern interior
2	583	White	Large	Mixed	Northern interior
3	584	White	Small	Mixed	Northern interior
4	587	White	Large	Andean	Northern interior
5	592	Brown	Medium	Andean	Northern interior
6	600	Yellow	Medium	Mixed	Northern interior
7	601	Pink	Large	Andean	Northern interior
8	602	White	Large	Mixed	Northern interior
9	620	White and brown background	Large	Andean	Northern interior
10	632	White	Large	Andean	Northern interior
11	635	Light Brown	Large	Andean	Northern interior
12	638	Pink background with brown stripes	Large	NE	Northern interior
13	639	White	Large	Mixed	Northern interior
14	645	Brown	Medium	Andean	Northern interior
15	654	Pink background with brown stripes	Medium	Mesoamerican	Northern interior
16	667	Pink	Medium	Andean	Northern interior
17	670	Red	Large	Andean	Northern interior
18	671	Cream background with brown stripes	Large	Andean	Northern interior
19	698	White background with brown around hilum	Large	Andean	Northern interior
20	706	Pink	Large	Andean	Central north
21	735	White	Large	Andean	Northern interior
22	737	Brown background with dark brown stripes	Large	Andean	Central north
23	1631	Cream background with red mottles	Large	Andean	Central north
24	1636	White	Large	Mesoamerican	Central north
25	1644	White	Large	Mesoamerican	Central north
26	1653	Cream background with red mottles	Large	Andean	Central north
27	1654	Purplish red	Large	Andean	Central north
28	1662	Red	Large	Andean	Central north
29	1663	Brown	Large	Andean	Central north
30	1867	Brown	Medium	Mesoamerican	Northern interior
31	1871	Cream background with yellow stripes	Large	Andean	Northern interior
32	1889	Pink background with brown stripes	Large	Andean	Northern interior
33	1926	Brown	Large	Andean	Northern interior
34	1932	White	Large	Mesoamerican	Northern interior
35	1933	Pink	Large	Andean	Northern interior
36	1938	Cream background with brown stripes	Large	Mesoamerican	Northern interior
37	1943	White	Medium	Andean	Northern interior
38	1952	White	Large	Mesoamerican	Northern interior
39	1955	Pink background with brown stripes	Medium	Mesoamerican	Northern interior
40	1966	Red	Large	Andean	Central north
41	1975	Red	Large	Andean	Central north
42	1976	Pink background with brown stripes	Large	Andean	Central north
43	1984	Pink	Large	Andean	Central north
44	2081	Pink background with brown stripes	Large	Andean	Madeira
45	2126	Pink background with purple stripes	Large	Andean	Madeira
46	2155	Pink background with purple stripes	Large	Andean	Madeira
47	2159	Cream background with purple mottles	Large	Mixed	Madeira
48	2179	Black	Small	Mesoamerican	Madeira
49	2192	Pink background with purple stripes	Large	Andean	Madeira
50	4048	Brown	Large	Andean	Central north
51	4049	Red	Large	Andean	Central north
52	4050	Brown	Large	Andean	Central north
53	4051	Pink background with purple stripes	Large	Andean	Central north
54	4070	Red	Large	Andean	Central north
55	4071	Brown background with dark brown stripes	Large	Andean	Central north
56	4072	Light Brown	Large	Andean	Central north

1. Seed size was based on 100 seed weight (small seeds, < 25g/100 seeds; medium seeds, 25 – 40g/100 seeds; large seeds, > 40g/100 seeds).

Table S2. *Cont.*

#	Accessions	Seed Color and Pattern	Seed Size ¹	Gene pool	Geographical origin in Portugal and Islands
57	4073	White	Medium	Mesoamerican	Central north
58	4081	Light Brown	Large	Mixed	Central north
59	4085	White	Medium	Mixed	Central north
60	4088	White	Medium	Andean	Central north
61	4097	Pink background with purple stripes	Medium	Andean	Central north
62	4100	Pink background with purple stripes	Large	Andean	Central north
63	4108	White background with brown speckles with marginal	Large	Andean	Central north
64	4119	Pink background with purple stripes	Medium	Andean	Central north
65	4120	Red	Large	Andean	Central north
66	4127	White	Medium	Andean	Central north
67	4133	White and brown backgrounds	Large	Andean	Central north
68	4150	Pink background with purple stripes	Medium	Andean	Central north
69	4164	Pink	Large	Andean	Central north
70	4182	Pink background with brown stripes	Large	Mesoamerican	Central north
71	4185	White background with brown speckles with marginal	Large	Andean	Central north
72	4189	White and brown backgrounds	Large	Andean	Central north
73	4195	Red	Large	NE	Central north
74	4290*	Pink background with purple stripes	Medium	Mixed	Central north
75	4295	Pink background with purple stripes	Medium	Andean	South
76	4300	Red	Large	Andean	South
77	5249	White	Medium	Mesoamerican	Central north
78	5285	Yellow	Medium	Andean	North coast
79	5286	Light Brown	Medium	Mesoamerican	North coast
80	5287	Brown	Small	Mesoamerican	North coast
81	5288	Pink background with light brown stripes	Large	Andean	Central north
82	5289	Cream background with yellow stripes	Large	NE	North coast
83	5290	Purplish red	Large	Andean	Azores
84	5291	Pink background with purple stripes	Large	Andean	South
85	5292	Cream background with dark brown stripes	Medium	Mesoamerican	South
86	5295	Cream background with purple mottles	Large	Andean	South
87	5296	Brown background with dark brown stripes	Large	Mixed	South
88	5297	Brown background with dark brown stripes	Medium	Mixed	South
89	5298	Brown	Large	Andean	Northern interior
90	5300	Brown background with dark brown stripes	Large	Andean	Northern interior
91	5302	Yellow	Medium	Mixed	North coast
92	5307	Brown	Medium	NE	Central north
93	5363	White and brown backgrounds	Large	Andean	Central south
94	5365	Brown background with dark brown stripes	Medium	Mixed	Central north
95	5366	Pink	Medium	Andean	Central north
96	5367	Cream background with purple stripes	Large	Andean	Central north
97	5368	Pink	Large	Mixed	Central north
98	5369	Purplish red	Medium	Andean	Central north
99	5370	Pink	Medium	Mesoamerican	North coast
100	5371	Pink	Large	Andean	North coast
101	5376	Brown	Large	Mixed	South
102	5377	Pink	Large	Andean	South
103	5378	White background with brown speckles with marginal	Large	Mixed	Central south
104	5379	Cream background with purple stripes	Small	Mixed	Northern interior
105	5380	Brown background with dark brown stripes	Large	Andean	North coast
106	5381	Brown background with dark brown stripes	Large	Andean	North coast
107	Tarrestre	Light Brown	Large	Mesoamerican	North coast

1. Seed size was based on 100 seed weight (small seeds, < 25g/100 seeds; medium seeds, 25 – 40g/100 seeds; large seeds, > 40g/100 seeds).

NE-Not evaluated * Not enough amount for the analysis

Table S3. Retention time, precursor ion, MRM transitions and calibration curves of the amino acids' standards used for the amino acids' quantification in common bean accessions.

Amino acid	RT (Average $\pm$ SD) min	Precursor ion m/z (ESI+)	1 st MS ² transition m/z (ESI+)	2 nd MS ² transition m/z (ESI+)	Range (μ M)	Equation	R ²
Asp	3.23 $\pm$ 0.01	134	134 $\rightarrow$ 87	134 $\rightarrow$ 74	6.6 – 22	Y = 4584 X + 9560	0.9947
Ser	3.32 $\pm$ 0.02	106	106 $\rightarrow$ 88	106 $\rightarrow$ 60	3.8 – 30	Y = 1291 X + 1508	0.9939
Gly	3.49 $\pm$ 0.02	76	76 $\rightarrow$ 30	-	3.8 – 30	Y = 198 X + 327	0.9977
Thr	3.92 $\pm$ 0.04	120	120 $\rightarrow$ 74	120 $\rightarrow$ 56	3.8 – 26	Y = 968 X + 1235	0.9976
Glu	3.97 $\pm$ 0.02	148	148 $\rightarrow$ 102	148 $\rightarrow$ 84	3.8 – 26	Y = 1205 X + 1919	0.9984
Ala	4.24 $\pm$ 0.02	90	90 $\rightarrow$ 44	-	3.8 – 26	Y = 1080 X + 1152	0.9933
Pro	5.29 $\pm$ 0.02	116	116 $\rightarrow$ 70	-	3.8 – 26	Y = 16182 X – 4018	0.9939
Val	11.01 $\pm$ 0.02	118	118 $\rightarrow$ 72	118 $\rightarrow$ 55	3.8 – 30	Y = 8552 X + 5817	0.9939
Met	11.72 $\pm$ 0.02	150	150 $\rightarrow$ 104	150 $\rightarrow$ 56	0.5 – 9.4	Y = 3063 X + 953	0.9972
His	13.35 $\pm$ 0.03	156	156 $\rightarrow$ 110	156 $\rightarrow$ 83	1 – 18	Y = 5163 X – 1871	0.9947
Lys	14.58 $\pm$ 0.02	147	147 $\rightarrow$ 84	-	6.6 – 30	Y = 1894 X – 2841	0.9961
Tyr	14.97 $\pm$ 0.02	182	182 $\rightarrow$ 136	182 $\rightarrow$ 91	1 – 15	Y = 2030 X – 540	0.9929
Ile	17.12 $\pm$ 0.02	132	132 $\rightarrow$ 86	132 $\rightarrow$ 69	3.8 – 30	Y = 9605 X – 2053	0.9959
Arg	17.94 $\pm$ 0.03	175	175 $\rightarrow$ 70	175 $\rightarrow$ 60	0.8 – 18	Y = 5045 X – 2333	0.9947
Leu	17.95 $\pm$ 0.02	132	132 $\rightarrow$ 86	132 $\rightarrow$ 30	3.8 – 30	Y = 9735 X – 4602	0.9970
Phe	20.21 $\pm$ 0.02	166	166 $\rightarrow$ 120	166 $\rightarrow$ 103	3.8 – 30	Y = 4891 X – 5607	0.9970

Table S4. Protein (P), Total Carbohydrates (CH), Fat, Fiber, Ash and Moisture in g/100g, evaluated in the Portuguese common bean accessions cropped in contrasting environments, 1–Cabrela and 2–Córdoba. Per each environment, different letters per parameter (row) indicate significant differences ($p < 0.05$) between values.

#	Accessions	Environment	P	CH	Fat	Fiber	Ash	Moisture
1	579	1	-	-	-	-	-	-
		2	24.80 ± 0.38 ^{i-v}	56.09 ± 0.62 ^{e-s}	1.82 ± 0.01 ^{G-L}	6.55 ± 0.35 ^{f-v}	3.24 ± 0.05 ^{g-w}	14.06 ± 0.19 ^{c-l}
2	583	1	-	-	-	-	-	-
		2	24.64 ± 1.26 ^{e-u}	56.49 ± 1.43 ^{f-v}	1.84 ± 0.06 ^{H-M}	6.88 ± 0.38 ^{g-z}	3.40 ± 0.06 ^{v-E}	13.64 ± 0.16 ^{a-d}
3	584	1	23.60 ± 0.01 ^{u-x}	58.47 ± 0.04 ^{a-g}	1.73 ± 0.01 ^{r-y}	5.86 ± 0.03 ^{e-n}	3.35 ± 0.00 ^u	12.85 ± 0.05 ^{a-e}
		2	24.35 ± 0.02 ^{c-t}	56.08 ± 0.08 ^{e-s}	1.87 ± 0.05 ^{I-N}	6.73 ± 0.08 ^{g-w}	3.24 ± 0.02 ^{g-w}	14.45 ± 0.03 ^{f-w}
4	587	1	20.55 ± 0.11 ^{a-q}	61.92 ± 0.17 ^{k-v}	1.76 ± 0.04 ^{u-y}	4.80 ± 0.06 ^a	3.13 ± 0.01 ^{b-q}	12.64 ± 0.02 ^{ab}
		2	26.59 ± 0.31 ^{s-y}	54.11 ± 0.37 ^{a-i}	1.92 ± 0.04 ^{K-N}	7.66 ± 0.09 ^{w-A}	3.43 ± 0.03 ^{x-E}	13.96 ± 0.01 ^{b-i}
5	592	1	19.38 ± 1.31 ^{a-i}	62.35 ± 1.11 ^{o-v}	1.10 ± 0.03 ^{a-d}	5.03 ± 0.34 ^{a-d}	3.01 ± 0.08 ^{a-c}	14.17 ± 0.29 ^{i-o}
		2	23.69 ± 0.32 ^{b-r}	56.83 ± 0.32 ^{g-x}	1.58 ± 0.06 ^{w-E}	7.37 ± 0.23 ^{o-z}	3.23 ± 0.04 ^{f-w}	14.66 ± 0.05 ^{i-y}
6	600	1	19.44 ± 0.43 ^{a-j}	62.86 ± 0.32 ^{uv}	1.84 ± 0.06 ^{xy}	5.02 ± 0.15 ^{a-d}	3.11 ± 0.03 ^{a-n}	12.75 ± 0.13 ^{a-c}
		2	-	-	-	-	-	-
7	601	1	-	-	-	-	-	-
		2	21.94 ± 0.78 ^{a-g}	58.80 ± 0.68 ^{r-y}	1.82 ± 0.03 ^{G-M}	6.73 ± 0.10 ^{g-w}	3.01 ± 0.01 ^{a-d}	14.43 ± 0.15 ^{f-w}
8	602	1	21.75 ± 0.05 ^{j-v}	60.33 ± 0.05 ^{d-u}	1.65 ± 0.02 ^{o-y}	5.36 ± 0.05 ^{a-i}	3.29 ± 0.01 ^{r-u}	12.98 ± 0.02 ^{a-f}
		2	-	-	-	-	-	-
9	620	1	-	-	-	-	-	-
		2	24.79 ± 0.02 ^{i-v}	56.53 ± 0.05 ^{f-v}	1.43 ± 0.00 ^{o-z}	6.84 ± 0.03 ^{g-y}	3.44 ± 0.00 ^{y-E}	13.81 ± 0.07 ^{b-f}
10	632	1	-	-	-	-	-	-
		2	24.49 ± 1.98 ^{d-t}	56.34 ± 1.97 ^{f-u}	1.77 ± 0.04 ^{E-K}	6.20 ± 0.24 ^{b-n}	3.27 ± 0.07 ^{l-y}	14.13 ± 0.09 ^{c-m}
11	635	1	-	-	-	-	-	-
		2	24.64 ± 1.26 ^{e-u}	57.26 ± 1.38 ^{j-x}	1.51 ± 0.03 ^{q-C}	7.25 ± 0.31 ^{n-z}	3.47 ± 0.05 ^{C-F}	13.12 ± 0.12 ^a
12	638	1	-	-	-	-	-	-
		2	23.95 ± 0.47 ^{b-s}	56.42 ± 0.64 ^{f-v}	1.62 ± 0.04 ^{v-G}	7.09 ± 0.50 ^{l-z}	3.33 ± 0.07 ^{q-D}	14.68 ± 0.09 ^{i-y}
13	639	1	-	-	-	-	-	-
		2	25.56 ± 0.80 ^{p-x}	54.84 ± 0.86 ^{c-m}	1.67 ± 0.07 ^{B-J}	6.50 ± 0.29 ^{f-t}	3.18 ± 0.03 ^{e-t}	14.76 ± 0.06 ^{m-z}
14	645	1	21.69 ± 0.80 ^{h-v}	60.15 ± 1.21 ^{d-r}	1.46 ± 0.04 ^{f-u}	6.00 ± 0.08 ^{g-n}	3.16 ± 0.02 ^{d-s}	13.55 ± 0.44 ^{a-m}
		2	24.70 ± 0.10 ^{f-u}	55.73 ± 0.10 ^{d-q}	1.43 ± 0.00 ^{n-y}	7.24 ± 0.05 ^{n-z}	3.28 ± 0.01 ^{k-z}	14.86 ± 0.01 ^{q-z}
15	654	1	20.20 ± 0.60 ^{a-p}	61.70 ± 0.54 ^{j-v}	1.68 ± 0.05 ^{p-y}	5.89 ± 0.23 ^{e-n}	3.05 ± 0.03 ^{a-h}	13.38 ± 0.14 ^{a-k}
		2	22.97 ± 0.34 ^{a-p}	58.46 ± 0.69 ^{p-y}	1.14 ± 0.04 ^{e-j}	6.01 ± 0.38 ^{b-k}	3.18 ± 0.02 ^{e-t}	14.26 ± 0.40 ^{d-r}
16	667	1	20.05 ± 0.14 ^{a-o}	61.86 ± 0.19 ^{k-v}	1.22 ± 0.03 ^{a-i}	5.28 ± 0.08 ^{a-h}	3.11 ± 0.02 ^{a-o}	13.76 ± 0.12 ^{c-n}
		2	-	-	-	-	-	-
17	670	1	20.92 ± 1.06 ^{a-s}	61.40 ± 1.15 ^{i-v}	1.11 ± 0.02 ^{a-e}	5.46 ± 0.16 ^{a-j}	3.15 ± 0.01 ^{c-r}	13.42 ± 0.09 ^{a-l}
		2	23.74 ± 0.92 ^{b-r}	57.38 ± 1.19 ^{k-x}	1.03 ± 0.06 ^{d-f}	6.36 ± 0.30 ^{d-r}	3.23 ± 0.04 ^{a-v}	14.62 ± 0.19 ^{j-x}
18	671	1	-	-	-	-	-	-
		2	25.76 ± 0.49 ^{q-x}	55.54 ± 0.58 ^{d-p}	0.86 ± 0.07 ^{cd}	6.29 ± 0.27 ^{d-o}	3.34 ± 0.01 ^{s-D}	14.50 ± 0.12 ^{h-w}
19	698	1	21.57 ± 0.61 ^{e-v}	60.64 ± 0.53 ^{e-v}	1.29 ± 0.04 ^{a-l}	4.91 ± 0.10 ^{abc}	3.17 ± 0.04 ^{a-s}	13.34 ± 0.09 ^{a-j}
		2	25.47 ± 1.89 ^{o-x}	55.86 ± 2.02 ^{d-r}	1.12 ± 0.06 ^{e-i}	5.40 ± 0.68 ^{a-e}	3.29 ± 0.11 ^{n-B}	14.26 ± 0.14 ^{d-r}
20	706	1	23.10 ± 1.89 ^{r-x}	58.95 ± 1.90 ^{a-i}	1.53 ± 0.04 ^{i-x}	6.29 ± 0.09 ^{k-p}	3.16 ± 0.06 ^{e-s}	13.26 ± 0.05 ^{a-i}
		2	23.68 ± 0.73 ^{b-r}	57.91 ± 1.09 ^{n-y}	0.85 ± 0.08 ^{cd}	5.35 ± 0.53 ^{a-d}	3.21 ± 0.04 ^{e-u}	14.36 ± 0.26 ^{e-v}
21	735	1	-	-	-	-	-	-
		2	25.76 ± 0.49 ^{a-l}	55.54 ± 0.58 ^{t-y}	0.86 ± 0.07 ^{h-r}	6.29 ± 0.27 ^a	3.34 ± 0.01 ^{e-v}	14.50 ± 0.12 ^{b-g}
22	737	1	20.56 ± 1.04 ^{a-q}	61.88 ± 1.08 ^{k-v}	1.22 ± 0.02 ^{a-i}	5.40 ± 0.04 ^{a-i}	3.12 ± 0.02 ^{a-q}	13.22 ± 0.02 ^{a-i}
		2	25.33 ± 0.47 ^{m-w}	56.14 ± 0.75 ^{e-t}	0.72 ± 0.09 ^{bc}	5.64 ± 0.23 ^{b-f}	3.37 ± 0.02 ^{u-D}	14.43 ± 0.20 ^{f-w}
23	1631	1	19.20 ± 0.55 ^{a-d}	62.84 ± 0.60 ^{uv}	1.05 ± 0.03 ^a	5.28 ± 0.09 ^{a-h}	3.10 ± 0.02 ^{a-n}	13.81 ± 0.09 ^{d-o}
		2	23.39 ± 0.05 ^{b-r}	58.11 ± 0.04 ^{p-y}	0.74 ± 0.02 ^{bc}	6.14 ± 0.15 ^{b-m}	3.50 ± 0.01 ^{D-F}	14.26 ± 0.02 ^{d-r}
24	1636	1	20.83 ± 0.36 ^{a-r}	60.51 ± 0.25 ^{d-v}	1.70 ± 0.17 ^{q-y}	5.63 ± 0.17 ^{b-m}	3.07 ± 0.03 ^{a-k}	13.89 ± 0.58 ^{f-o}
		2	27.63 ± 0.69 ^{w-y}	53.87 ± 0.97 ^{a-g}	1.07 ± 0.11 ^{e-g}	5.83 ± 0.56 ^{b-g}	3.57 ± 0.07 ^E	13.86 ± 0.24 ^{b-h}
25	1644	1	21.46 ± 1.74 ^{c-v}	59.99 ± 1.93 ^{d-q}	1.70 ± 0.02 ^{q-y}	5.52 ± 0.21 ^{a-k}	3.15 ± 0.05 ^{a-r}	13.70 ± 0.15 ^{c-n}
		2	29.30 ± 0.50 ^y	52.12 ± 0.86 ^{a-c}	1.00 ± 0.06 ^{de}	5.18 ± 0.22 ^{a-c}	3.60 ± 0.02 ^F	13.98 ± 0.33 ^{c-j}
26	1653	1	19.25 ± 0.87 ^{a-e}	62.76 ± 0.53 ^{t-v}	1.36 ± 0.03 ^{a-p}	5.59 ± 0.06 ^{a-l}	3.07 ± 0.06 ^{a-i}	13.57 ± 0.40 ^{a-m}
		2	24.03 ± 0.27 ^{b-t}	57.88 ± 0.71 ^{n-y}	0.47 ± 0.20 ^a	5.14 ± 0.96 ^{ab}	3.42 ± 0.05 ^{x-E}	14.19 ± 0.18 ^{d-o}
27	1654	1	22.66 ± 0.99 ^{q-w}	59.46 ± 1.10 ^{b-l}	1.42 ± 0.07 ^{e-r}	5.73 ± 0.33 ^{d-m}	3.20 ± 0.07 ^{i-s}	13.26 ± 0.09 ^{a-i}
		2	24.21 ± 0.40 ^{b-t}	57.12 ± 0.63 ^{i-x}	0.62 ± 0.05 ^{ab}	4.42 ± 0.36 ^a	3.20 ± 0.05 ^{e-t}	14.86 ± 0.22 ^{q-A}
28	1662	1	23.72 ± 0.82 ^{v-x}	58.18 ± 0.86 ^{a-e}	1.45 ± 0.10 ^{f-u}	6.24 ± 0.05 ^{j-p}	3.22 ± 0.02 ^{k-t}	13.43 ± 0.07 ^{a-m}
		2	-	-	-	-	-	-

Table S4. Cont.

#	Accessions	Environment	P	CH	Fat	Fiber	Ash	Moisture
29	1663	1	20.78 ± 0.50 ^{a-r}	61.16 ± 0.63 ^{b-v}	1.73 ± 0.03 ^{r-y}	6.15 ± 0.33 ^{i-o}	3.11 ± 0.02 ^{a-o}	13.22 ± 0.11 ^{a-i}
		2	21.69 ± 0.28 ^{a-c}	59.34 ± 0.39 ^{u-y}	1.63 ± 0.03 ^{y-l}	6.68 ± 0.11 ^{f-w}	3.11 ± 0.02 ^{a-j}	14.23 ± 0.13 ^{d-r}
30	1867	1	-	-	-	-	-	-
		2	23.89 ± 0.09 ^{b-s}	57.01 ± 0.22 ^{b-x}	1.70 ± 0.05 ^{B-J}	7.57 ± 0.20 ^{t-A}	3.29 ± 0.01 ^{m-A}	14.11 ± 0.08 ^{b-m}
31	1871	1	-	-	-	-	-	-
		2	22.04 ± 0.97 ^{a-i}	59.81 ± 0.87 ^{xy}	1.54 ± 0.10 ^{s-D}	6.44 ± 0.20 ^{e-s}	3.28 ± 0.04 ^{k-z}	13.33 ± 0.08 ^{ab}
32	1889	1	-	-	-	-	-	-
		2	24.35 ± 0.15 ^{c-t}	57.63 ± 0.27 ^{l-y}	1.38 ± 0.05 ^{k-w}	6.61 ± 0.15 ^{f-w}	3.31 ± 0.01 ^{o-C}	13.33 ± 0.12 ^{ab}
33	1926	1	-	-	-	-	-	-
		2	24.28 ± 0.28 ^{c-t}	57.20 ± 0.32 ^{l-x}	1.45 ± 0.16 ^{p-A}	6.97 ± 0.32 ^{h-z}	3.29 ± 0.03 ^{n-B}	13.78 ± 0.22 ^{b-e}
34	1932	1	-	-	-	-	-	-
		2	26.05 ± 0.12 ^{t-x}	54.07 ± 0.09 ^{a-h}	1.66 ± 0.01 ^{A-J}	7.90 ± 0.09 ^{y-A}	3.46 ± 0.03 ^{B-F}	14.74 ± 0.06 ^{m-z}
35	1933	1	-	-	-	-	-	-
		2	24.98 ± 0.16 ^{k-w}	55.58 ± 0.11 ^{d-p}	1.27 ± 0.06 ^{g-p}	7.60 ± 0.25 ^{v-A}	3.25 ± 0.02 ^{i-x}	14.91 ± 0.16 ^{t-A}
36	1938	1	-	-	-	-	-	-
		2	23.69 ± 0.6 ^{b-r}	57.77 ± 0.70 ^{m-y}	1.24 ± 0.03 ^{f-o}	6.32 ± 0.36 ^{d-q}	3.15 ± 0.04 ^{a-p}	14.15 ± 0.09 ^{d-n}
37	1943	1	-	-	-	-	-	-
		2	22.14 ± 1.30 ^{a-j}	58.64 ± 1.36 ^{q-y}	1.81 ± 0.03 ^{F-L}	5.90 ± 0.29 ^{b-i}	3.19 ± 0.02 ^{e-t}	14.23 ± 0.07 ^{d-q}
38	1952	1	-	-	-	-	-	-
		2	27.54 ± 0.84 ^{y-y}	53.01 ± 0.75 ^{a-d}	1.74 ± 0.17 ^{D-K}	7.36 ± 0.58 ^{o-z}	3.44 ± 0.12 ^{y-F}	14.27 ± 0.04 ^{d-t}
39	1955	1	21.06 ± 0.36 ^{a-t}	60.95 ± 0.31 ^{f-v}	1.27 ± 0.05 ^{a-k}	5.66 ± 0.05 ^{b-m}	3.13 ± 0.02 ^{b-q}	13.59 ± 0.08 ^{a-m}
		2	23.18 ± 0.74 ^{b-q}	58.37 ± 0.73 ^{p-y}	1.35 ± 0.02 ^{j-u}	6.32 ± 0.05 ^{d-p}	3.16 ± 0.02 ^{a-q}	13.95 ± 0.02 ^{b-i}
40	1966	1	19.31 ± 0.20 ^{a-g}	62.77 ± 0.27 ^{s-v}	1.06 ± 0.03 ^{ab}	5.25 ± 0.10 ^{a-g}	3.04 ± 0.01 ^{a-g}	13.82 ± 0.13 ^{d-o}
		2	23.48 ± 0.23 ^{b-r}	57.62 ± 0.19 ^{y-y}	1.18 ± 0.02 ^{e-k}	7.07 ± 0.08 ^{k-z}	3.23 ± 0.04 ^{f-v}	14.49 ± 0.14 ^{b-w}
41	1975	1	21.91 ± 0.82 ^{k-w}	59.95 ± 0.92 ^{t-p}	1.33 ± 0.20 ^{a-o}	5.84 ± 0.07 ^{e-n}	3.14 ± 0.01 ^{c-q}	13.67 ± 0.29 ^{c-n}
		2	25.57 ± 0.39 ^{p-x}	55.49 ± 0.41 ^{d-p}	1.33 ± 0.03 ^{i-s}	7.39 ± 0.28 ^{p-z}	3.33 ± 0.09 ^{q-D}	14.27 ± 0.11 ^{d-t}
42	1976	1	19.75 ± 0.36 ^{a-m}	62.45 ± 0.35 ^{s-v}	1.41 ± 0.02 ^{d-r}	5.75 ± 0.15 ^{d-n}	3.07 ± 0.05 ^{a-k}	13.32 ± 0.09 ^{a-j}
		2	24.10 ± 1.21 ^{b-t}	56.65 ± 1.15 ^{g-w}	1.35 ± 0.06 ^{k-v}	7.01 ± 0.25 ^{j-z}	3.21 ± 0.04 ^{e-u}	14.69 ± 0.09 ^{y-y}
43	1984	1	21.53 ± 0.96 ^{b-v}	60.34 ± 0.72 ^{t-u}	1.20 ± 0.04 ^{a-h}	5.27 ± 0.11 ^{a-h}	3.11 ± 0.04 ^{a-n}	13.83 ± 0.31 ^{e-o}
		2	22.73 ± 0.56 ^{a-o}	58.06 ± 0.50 ^{p-y}	1.50 ± 0.04 ^{q-B}	6.57 ± 0.22 ^{f-v}	3.17 ± 0.05 ^{b-r}	14.55 ± 0.12 ^{i-x}
44	2081	1	23.34 ± 1.06 ^{b-x}	57.95 ± 0.96 ^{d-d}	1.17 ± 0.04 ^{a-f}	6.24 ± 0.24 ^{j-p}	3.14 ± 0.06 ^{b-q}	14.40 ± 0.22 ^{i-o}
		2	-	-	-	-	-	-
45	2126	1	24.24 ± 0.54 ^{wx}	57.36 ± 0.13 ^{a-c}	1.09 ± 0.29 ^{a-d}	5.86 ± 0.19 ^{e-n}	3.25 ± 0.09 ^{n-u}	14.06 ± 1.00 ^{b-o}
		2	-	-	-	-	-	-
46	2155	1	23.27 ± 0.46 ^{s-x}	58.26 ± 0.22 ^{a-e}	1.29 ± 0.05 ^{a-l}	6.14 ± 0.33 ^{i-o}	3.20 ± 0.06 ^{i-s}	13.98 ± 0.71 ^{f-o}
		2	-	-	-	-	-	-
47	2159	1	-	-	-	-	-	-
		2	23.11 ± 0.79 ^{b-q}	56.84 ± 1.29 ^{g-x}	1.46 ± 0.07 ^{p-A}	6.63 ± 0.26 ^{f-w}	3.09 ± 0.02 ^{a-i}	15.50 ± 0.58 ^{A-C}
48	2179	1	21.24 ± 0.28 ^{b-u}	60.15 ± 0.35 ^{f-r}	1.56 ± 0.04 ^{j-y}	5.96 ± 0.17 ^{f-n}	3.14 ± 0.02 ^{c-r}	13.91 ± 0.06 ^{f-o}
		2	25.65 ± 0.44 ^{p-x}	54.91 ± 0.42 ^{c-n}	1.54 ± 0.02 ^{t-D}	7.19 ± 0.10 ^{m-z}	3.22 ± 0.01 ^{e-u}	14.68 ± 0.06 ^{k-y}
49	2192	1	24.24 ± 0.38 ^{wx}	57.01 ± 0.81 ^{ab}	1.22 ± 0.04 ^{a-i}	6.14 ± 0.23 ^{i-o}	3.16 ± 0.05 ^{e-s}	14.38 ± 0.54 ^{k-o}
		2	-	-	-	-	-	-
50	4048	1	22.16 ± 0.24 ^{m-w}	59.81 ± 0.25 ^{c-o}	1.37 ± 0.06 ^{a-p}	6.06 ± 0.08 ^{h-n}	3.17 ± 0.02 ^{g-s}	13.49 ± 0.08 ^{a-m}
		2	23.12 ± 0.14 ^{b-q}	58.14 ± 0.09 ^{p-y}	1.32 ± 0.04 ^{b-r}	6.68 ± 0.21 ^{f-w}	3.21 ± 0.04 ^{e-u}	14.21 ± 0.10 ^{d-p}
51	4049	1	25.28 ± 0.10 ^x	56.50 ± 0.25 ^a	1.56 ± 0.09 ^{j-y}	6.93 ± 0.14 ^{op}	3.39 ± 0.03 ^u	13.26 ± 0.31 ^{a-i}
		2	28.98 ± 1.07 ^y	51.53 ± 0.86 ^a	1.39 ± 0.06 ^{l-x}	7.82 ± 0.32 ^{x-A}	3.46 ± 0.08 ^{A-F}	14.64 ± 0.24 ^{k-x}
52	4050	1	22.47 ± 0.37 ^{p-w}	59.55 ± 0.13 ^{b-m}	1.28 ± 0.03 ^{a-l}	5.72 ± 0.14 ^{d-n}	3.21 ± 0.04 ^{l-t}	13.49 ± 0.26 ^{a-m}
		2	24.61 ± 1.63 ^{e-u}	56.12 ± 1.80 ^{e-s}	1.39 ± 0.03 ^{l-x}	6.83 ± 0.24 ^{g-y}	3.24 ± 0.02 ^{g-w}	14.63 ± 0.19 ^{k-x}
53	4051	1	20.03 ± 0.88 ^{a-o}	61.88 ± 0.59 ^{k-v}	1.76 ± 0.34 ^{t-y}	5.89 ± 0.48 ^{e-n}	3.16 ± 0.10 ^{d-s}	13.18 ± 0.74 ^{a-i}
		2	22.58 ± 1.08 ^{a-m}	58.04 ± 1.44 ^{p-y}	1.72 ± 0.02 ^{C-K}	7.19 ± 0.45 ^{m-z}	3.19 ± 0.03 ^{e-t}	14.47 ± 0.36 ^{s-w}
54	4070	1	21.86 ± 0.37 ^{b-v}	60.22 ± 0.32 ^{d-t}	1.61 ± 0.04 ^{m-y}	6.37 ± 0.11 ^{l-p}	3.31 ± 0.01 ^{s-u}	12.99 ± 0.07 ^{a-f}
		2	21.75 ± 0.17 ^{a-d}	57.92 ± 0.46 ^{a-y}	1.63 ± 0.04 ^{y-H}	7.06 ± 0.51 ^{k-z}	2.99 ± 0.05 ^a	15.71 ± 0.61 ^C
55	4071	1	20.06 ± 0.18 ^{a-o}	61.85 ± 0.16 ^{k-v}	1.64 ± 0.00 ^{o-y}	5.64 ± 0.06 ^{b-m}	3.13 ± 0.02 ^{b-q}	13.32 ± 0.10 ^j
		2	24.09 ± 0.23 ^{b-t}	56.06 ± 0.39 ^{e-r}	1.63 ± 0.03 ^{y-l}	7.01 ± 0.21 ^{j-z}	3.06 ± 0.08 ^{a-f}	15.16 ± 0.34 ^{c-C}
56	4072	1	19.60 ± 0.50 ^{a-k}	62.53 ± 0.56 ^{p-v}	1.43 ± 0.14 ^{e-s}	6.28 ± 0.45 ^{k-p}	3.18 ± 0.09 ^{g-s}	13.26 ± 0.16 ^{a-i}
		2	22.92 ± 0.34 ^{a-p}	57.70 ± 0.22 ^{m-y}	1.54 ± 0.05 ^{s-D}	7.03 ± 0.29 ^{j-z}	3.13 ± 0.04 ^{a-n}	14.71 ± 0.18 ^{m-z}
57	4073	1	-	-	-	-	-	-
		2	26.77 ± 1.34 ^{t-y}	53.52 ± 1.55 ^{a-f}	1.83 ± 0.05 ^{G-M}	7.51 ± 0.46 ^{s-z}	3.45 ± 0.10 ^{z-F}	14.44 ± 0.08 ^{f-w}

Table S4. Cont.

#	Accessions	Environment	P	CH	Fat	Fiber	Ash	Moisture
58	4081	1	19.14 ± 0.40 ^{a-c}	63.03 ± 0.30 ^y	1.43 ± 0.10 ^{e-s}	5.56 ± 0.09 ^{a-k}	3.12 ± 0.04 ^{a-p}	13.28 ± 0.32 ^{a-i}
		2	23.70 ± 0.08 ^{b-r}	57.10 ± 0.06 ^{i-x}	1.58 ± 0.07 ^{w-E}	7.00 ± 0.33 ^{j-z}	3.23 ± 0.03 ^{e-v}	14.40 ± 0.06 ^{e-w}
59	4085	1	20.63 ± 0.43 ^{a-q}	60.98 ± 0.32 ^{g-v}	2.28 ± 0.09 ^z	5.93 ± 0.12 ^{e-n}	3.27 ± 0.06 ^{q-u}	12.84 ± 0.26 ^{a-e}
		2	26.02 ± 0.67 ^{r-x}	54.43 ± 0.77 ^{a-k}	2.26 ± 0.00 ^O	7.41 ± 0.01 ^{r-z}	3.45 ± 0.01 ^{z-F}	13.84 ± 0.10 ^{b-g}
60	4088	1	19.99 ± 0.25 ^{a-n}	62.15 ± 0.20 ^{m-v}	1.87 ± 0.03 ^y	5.37 ± 0.26 ^{a-i}	3.18 ± 0.02 ^{g-s}	12.81 ± 0.03 ^{a-d}
		2	24.73 ± 0.73 ^{g-u}	56.10 ± 0.88 ^{e-s}	2.07 ± 0.08 ^{NO}	6.79 ± 0.18 ^{g-x}	3.29 ± 0.04 ^{n-A}	13.81 ± 0.19 ^{b-f}
61	4097	1	20.46 ± 0.18 ^{a-q}	61.21 ± 0.43 ^{g-v}	1.62 ± 0.04 ^{n-y}	5.59 ± 0.11 ^{a-m}	3.11 ± 0.06 ^{a-n}	13.59 ± 0.46 ^{a-m}
		2	21.45 ± 0.25 ^{ab}	59.41 ± 0.34 ^{v-y}	1.82 ± 0.07 ^{G-M}	6.25 ± 0.43 ^{c-m}	3.00 ± 0.03 ^{a-c}	14.31 ± 0.04 ^{e-u}
62	4100	1	18.78 ± 0.56 ^a	62.89 ± 0.92 ^{uv}	1.54 ± 0.10 ^{i-x}	5.79 ± 0.34 ^{d-n}	3.10 ± 0.01 ^{a-m}	13.69 ± 0.29 ^{c-n}
		2	20.29 ± 0.45 ^a	60.44 ± 0.31 ^y	1.82 ± 0.02 ^{G-L}	6.89 ± 0.10 ^{g-z}	3.06 ± 0.02 ^{a-e}	14.40 ± 0.18 ^{e-w}
63	4108	1	21.44 ± 0.75 ^{c-v}	60.42 ± 0.85 ^{d-v}	1.43 ± 0.02 ^{e-r}	5.04 ± 0.28 ^{a-d}	3.10 ± 0.04 ^{a-m}	13.62 ± 0.04 ^{b-n}
		2	22.61 ± 1.25 ^{a-n}	58.30 ± 1.15 ^{p-y}	1.64 ± 0.05 ^{y-l}	5.97 ± 0.15 ^{b-j}	3.00 ± 0.06 ^{ab}	14.45 ± 0.20 ^{g-w}
64	4119	1	20.35 ± 0.67 ^{a-q}	61.15 ± 0.60 ^{h-v}	1.56 ± 0.10 ^{o-y}	6.27 ± 0.62 ^{k-p}	3.23 ± 0.11 ^{m-t}	13.71 ± 0.28 ^{c-n}
		2	22.72 ± 0.28 ^{a-o}	58.06 ± 0.31 ^{p-y}	1.72 ± 0.03 ^{C-K}	6.79 ± 0.18 ^{g-x}	3.14 ± 0.01 ^{a-o}	14.37 ± 0.06 ^{e-v}
65	4120	1	21.29 ± 0.40 ^{b-u}	60.54 ± 0.52 ^{d-v}	1.75 ± 0.03 ^{s-y}	6.53 ± 0.25 ^{n-p}	3.27 ± 0.07 ^{q-u}	13.15 ± 0.06 ^{a-h}
		2	22.00 ± 0.69 ^{a-h}	59.09 ± 0.73 ^{s-y}	1.84 ± 0.06 ^{I-M}	6.41 ± 0.16 ^{d-r}	3.07 ± 0.04 ^{a-g}	14.00 ± 0.07 ^{c-k}
66	4127	1	21.61 ± 0.26 ^{e-v}	60.19 ± 0.39 ^{d-s}	1.64 ± 0.06 ^{g-y}	5.65 ± 0.11 ^{b-m}	3.25 ± 0.02 ^{n-u}	13.31 ± 0.41 ^{a-j}
		2	23.85 ± 1.41 ^{b-s}	56.54 ± 1.20 ^{g-w}	1.99 ± 0.05 ^{L-N}	6.13 ± 0.18 ^{b-m}	3.08 ± 0.04 ^{a-h}	14.54 ± 0.22 ^{i-x}
67	4133	1	20.05 ± 0.41 ^{a-o}	61.95 ± 0.38 ^{i-v}	1.27 ± 0.05 ^{s-k}	4.90 ± 0.08 ^{ab}	3.01 ± 0.03 ^{a-d}	13.72 ± 0.22 ^{c-n}
		2	22.60 ± 0.63 ^{a-n}	58.44 ± 0.56 ^{p-y}	1.50 ± 0.08 ^B	5.89 ± 0.27 ^{b-h}	3.09 ± 0.02 ^{a-i}	14.37 ± 0.20 ^{e-v}
68	4150	1	21.20 ± 0.38 ^{b-t}	60.93 ± 0.53 ^{f-v}	1.58 ± 0.09 ^{k-y}	6.39 ± 0.41 ^{m-p}	3.26 ± 0.04 ^{o-u}	13.03 ± 0.07 ^{a-g}
		2	23.09 ± 0.48 ^{b-q}	57.43 ± 0.55 ^{k-y}	1.52 ± 0.06 ^{E-C}	6.35 ± 0.21 ^{d-r}	3.12 ± 0.02 ^{a-n}	14.84 ± 0.13 ^{p-z}
69	4164	1	-	-	-	-	-	-
		2	22.95 ± 0.42 ^{a-p}	57.58 ± 0.32 ^{i-y}	1.56 ± 0.10 ^{u-D}	6.55 ± 0.13 ^{f-v}	3.11 ± 0.02 ^{a-k}	14.80 ± 0.02 ^{o-z}
70	4182	1	19.27 ± 0.44 ^{a-f}	62.52 ± 0.62 ^{p-v}	1.47 ± 0.11 ^{f-v}	5.71 ± 0.12 ^{c-m}	3.08 ± 0.02 ^{a-l}	13.66 ± 0.31 ^{a-n}
		2	25.65 ± 0.17 ^{p-x}	55.02 ± 0.30 ^{c-o}	1.40 ± 0.02 ^{m-x}	7.39 ± 0.11 ^{q-z}	3.24 ± 0.04 ^{g-w}	14.68 ± 0.14 ^{l-y}
71	4185	1	22.11 ± 0.50 ^{m-w}	59.92 ± 0.41 ^{c-p}	1.51 ± 0.03 ^{g-w}	5.17 ± 0.11 ^{a-f}	3.14 ± 0.02 ^{c-r}	13.33 ± 0.13 ^{a-j}
		2	23.85 ± 0.91 ^{b-s}	56.35 ± 0.65 ^{f-u}	1.45 ± 0.08 ^{o-z}	6.16 ± 0.12 ^{b-m}	3.00 ± 0.01 ^{a-d}	15.35 ± 0.19 ^{z-C}
72	4189	1	19.34 ± 0.21 ^{a-h}	62.60 ± 0.21 ^{q-v}	1.35 ± 0.14 ^{a-o}	5.04 ± 0.30 ^{a-d}	3.13 ± 0.07 ^{b-q}	13.58 ± 0.46 ^{a-m}
		2	24.59 ± 0.41 ^{e-t}	56.04 ± 0.66 ^{e-r}	1.37 ± 0.09 ^{k-w}	6.52 ± 0.51 ^{f-u}	3.21 ± 0.06 ^{e-u}	14.78 ± 0.15 ^{n-z}
73	4195	1	-	-	-	-	-	-
		2	23.65 ± 0.44 ^{b-r}	56.95 ± 0.41 ^{h-x}	1.33 ± 0.07 ^{j-t}	6.98 ± 0.36 ^{i-z}	3.11 ± 0.02 ^{a-l}	14.95 ± 0.14 ^{u-B}
74	4290	1	-	-	-	-	-	-
		2	-	-	-	-	-	-
75	4295	1	20.52 ± 0.56 ^{a-q}	61.57 ± 0.58 ^{j-v}	1.54 ± 0.06 ^{i-x}	5.47 ± 0.10 ^{a-j}	3.17 ± 0.03 ^{e-s}	13.21 ± 0.04 ^{a-i}
		2	21.94 ± 2.25 ^{a-f}	58.33 ± 2.37 ^{p-y}	1.62 ± 0.05 ^{y-G}	6.84 ± 0.37 ^{g-y}	3.13 ± 0.10 ^{a-n}	14.98 ± 0.09 ^{v-B}
76	4300	1	-	-	-	-	-	-
		2	24.89 ± 0.35 ^{j-w}	55.66 ± 0.38 ^{d-q}	1.33 ± 0.07 ^{i-t}	7.60 ± 0.24 ^{v-A}	3.22 ± 0.06 ^{e-u}	14.91 ± 0.07 ^{s-A}
77	5249	1	21.63 ± 0.38 ^{f-v}	60.06 ± 0.61 ^{d-q}	1.80 ± 0.16 ^{w-y}	5.37 ± 0.03 ^{a-i}	3.23 ± 0.01 ^{m-t}	13.28 ± 0.41 ^{a-i}
		2	26.02 ± 0.55 ^{r-x}	54.32 ± 0.49 ^{a-j}	2.03 ± 0.03 ^{MN}	7.18 ± 0.24 ^{m-z}	3.38 ± 0.05 ^{u-D}	14.25 ± 0.09 ^{d-r}
78	5285	1	21.65 ± 1.25 ^{g-v}	60.72 ± 1.13 ^{e-v}	1.79 ± 0.05 ^{v-y}	5.59 ± 0.30 ^{a-l}	3.25 ± 0.05 ^{n-u}	12.59 ± 0.21 ^a
		2	23.51 ± 0.73 ^{b-r}	57.37 ± 0.65 ^{k-x}	1.61 ± 0.08 ^{y-G}	6.37 ± 0.23 ^{d-r}	3.24 ± 0.05 ^{g-w}	14.26 ± 0.09 ^{d-r}
79	5286	1	21.62 ± 0.44 ^{e-v}	60.32 ± 0.48 ^{d-u}	1.43 ± 0.12 ^{e-s}	5.54 ± 0.12 ^{a-k}	3.18 ± 0.01 ^{g-s}	13.46 ± 0.17 ^{a-m}
		2	22.99 ± 0.66 ^{a-q}	57.69 ± 0.77 ^{m-y}	1.58 ± 0.01 ^{w-E}	6.90 ± 0.28 ^{g-z}	3.20 ± 0.07 ^{e-t}	14.55 ± 0.06 ^{i-x}
80	5287	1	20.48 ± 0.43 ^{a-q}	60.61 ± 0.58 ^{e-v}	1.42 ± 0.00 ^{e-r}	5.81 ± 0.07 ^{d-n}	3.07 ± 0.01 ^{a-j}	14.43 ± 0.15 ^{l-o}
		2	24.58 ± 0.44 ^{e-t}	56.52 ± 0.52 ^{f-v}	1.50 ± 0.05 ^{q-B}	7.13 ± 0.18 ^{m-z}	3.35 ± 0.01 ^{t-D}	14.05 ± 0.07 ^{c-l}
81	5288	1	22.05 ± 0.47 ^{i-w}	60.07 ± 0.75 ^{dq}	1.43 ± 0.06 ^{e-r}	5.80 ± 0.07 ^{d-n}	3.18 ± 0.02 ^{g-s}	13.27 ± 0.31 ^{a-i}
		2	23.09 ± 0.26 ^{b-q}	57.55 ± 0.28 ^{ly}	1.40 ± 0.07 ^{m-x}	7.14 ± 0.21 ^{m-z}	3.24 ± 0.02 ^{g-w}	14.72 ± 0.21 ^{m-z}
82	5289	1	-	-	-	-	-	-
		2	23.33 ± 0.23 ^{b-r}	56.97 ± 0.33 ^{hx}	1.55 ± 0.05 ^{u-D}	6.93 ± 0.14 ^{h-z}	3.17 ± 0.02 ^{b-q}	14.99 ± 0.02 ^{v-B}
83	5290	1	23.72 ± 0.18 ^{v-x}	58.30 ± 0.18 ^{ae}	1.17 ± 0.03 ^{a-f}	6.06 ± 0.00 ^{h-n}	3.27 ± 0.00 ^{p-u}	13.55 ± 0.03 ^{a-m}
		2	-	-	-	-	-	-
84	5291	1	22.67 ± 1.32 ^{q-w}	59.15 ± 1.44 ^{bj}	1.58 ± 0.15 ^{k-y}	6.36 ± 0.29 ^{j-p}	3.23 ± 0.05 ^{m-t}	13.37 ± 0.08 ^{a-k}
		2	22.46 ± 1.63 ^{a-l}	58.24 ± 1.61 ^{py}	1.69 ± 0.05 ^{B-J}	6.72 ± 0.21 ^{g-w}	3.13 ± 0.06 ^{a-n}	14.48 ± 0.04 ^{g-w}
85	5292	1	21.09 ± 0.60 ^{a-t}	60.14 ± 0.51 ^{dk}	1.52 ± 0.01 ^{i-x}	5.97 ± 0.13 ^{g-n}	3.06 ± 0.03 ^{a-i}	14.19 ± 0.14 ^{i-o}
		2	22.99 ± 0.28 ^{a-q}	57.58 ± 0.71 ^{ly}	1.60 ± 0.04 ^{x-F}	6.73 ± 0.25 ^{g-w}	3.10 ± 0.03 ^{a-j}	14.73 ± 0.68 ^{m-z}
86	5295	1	20.28 ± 0.34 ^{a-p}	61.50 ± 0.51 ^{i-v}	1.41 ± 0.20 ^{d-r}	6.23 ± 0.38 ^{j-p}	3.19 ± 0.00 ^{h-s}	13.62 ± 0.06 ^{b-n}
		2	24.09 ± 0.48 ^{b-t}	56.61 ± 0.46 ^{g-w}	1.70 ± 0.00 ^{B-J}	7.96 ± 0.04 ^{zA}	3.33 ± 0.03 ^{p-D}	14.27 ± 0.04 ^{d-s}

Table S4. Cont.

#	Accessions	Environment	P	CH	Fat	Fiber	Ash	Moisture
87	5296	1	23.78 ± 1.54 ^{v-x}	58.35 ± 1.67 ^{a-f}	1.07 ± 0.16 ^{ab}	5.98 ± 0.37 ^{g-n}	3.23 ± 0.10 ^{l-t}	13.58 ± 0.13 ^{a-m}
		2	25.22 ± 0.01 ^{l-w}	56.75 ± 0.11 ^{g-w}	1.18 ± 0.04 ^{e-l}	6.92 ± 0.17 ^{h-z}	3.35 ± 0.00 ^{t-D}	13.50 ± 0.08 ^{a-c}
88	5297	1	-	-	-	-	-	-
		2	22.33 ± 0.78 ^{a-k}	58.29 ± 0.72 ^{p-y}	1.92 ± 0.08 ^{K-N}	7.18 ± 0.40 ^{m-z}	3.22 ± 0.06 ^{e-u}	14.25 ± 0.13 ^{d-r}
89	5298	1	20.56 ± 1.49 ^{a-q}	61.64 ± 1.62 ^{i-v}	1.33 ± 0.07 ^{a-o}	5.93 ± 0.60 ^{e-n}	3.18 ± 0.08 ^{g-s}	13.29 ± 0.04 ^{a-i}
		2	22.52 ± 1.23 ^{a-l}	57.25 ± 1.64 ^{i-x}	1.30 ± 0.08 ^{h-q}	7.56 ± 0.95 ^{t-A}	3.22 ± 0.13 ^{e-u}	15.71 ± 0.24 ^C
90	5300	1	21.10 ± 1.27 ^{a-t}	60.93 ± 1.37 ^{f-v}	1.30 ± 0.14 ^{a-m}	6.00 ± 0.13 ^{g-n}	3.17 ± 0.05 ^{f-s}	13.51 ± 0.18 ^{a-m}
		2	25.38 ± 0.87 ^{n-w}	54.67 ± 0.84 ^{b-l}	1.11 ± 0.04 ^{e-h}	7.35 ± 0.25 ^{o-z}	3.28 ± 0.07 ^{k-z}	15.56 ± 0.13 ^{BC}
91	5302	1	22.07 ± 1.00 ^{l-w}	59.64 ± 0.63 ^{c-m}	1.44 ± 0.10 ^{f-t}	5.62 ± 0.41 ^{b-m}	3.21 ± 0.07 ^{l-t}	13.64 ± 0.53 ^{b-n}
		2	22.93 ± 0.15 ^{a-p}	57.25 ± 0.08 ^{j-x}	1.40 ± 0.03 ^{m-x}	6.22 ± 0.04 ^{c-n}	3.11 ± 0.01 ^{a-m}	15.30 ± 0.05 ^{y-C}
92	5307	1	20.02 ± 0.65 ^{a-o}	61.31 ± 0.79 ^{g-v}	1.59 ± 0.06 ^{l-y}	6.03 ± 0.25 ^{g-n}	3.04 ± 0.04 ^{a-h}	14.04 ± 0.08 ^{g-o}
		2	-	-	-	-	-	-
93	5363	1	19.73 ± 0.17 ^{a-l}	61.88 ± 0.36 ^{k-v}	1.41 ± 0.04 ^{d-r}	5.14 ± 0.08 ^{a-e}	2.99 ± 0.01 ^{ab}	13.99 ± 0.14 ^{f-o}
		2	22.99 ± 1.04 ^{a-q}	57.48 ± 0.86 ^{l-y}	1.35 ± 0.10 ^{k-u}	6.05 ± 0.20 ^{b-l}	3.16 ± 0.04 ^{a-p}	15.03 ± 0.13 ^{w-B}
94	5365	1	20.73 ± 0.03 ^{a-q}	61.62 ± 0.02 ^{j-v}	1.18 ± 0.00 ^{a-g}	5.36 ± 0.06 ^{a-i}	3.17 ± 0.00 ^{d-s}	13.30 ± 0.00 ^{a-i}
		2	-	-	-	-	-	-
95	5366	1	20.85 ± 0.76 ^{a-r}	60.39 ± 0.70 ^{d-u}	1.30 ± 0.06 ^{a-n}	5.59 ± 0.10 ^{a-l}	3.02 ± 0.01 ^{a-f}	14.44 ± 0.03 ^{m-o}
		2	24.30 ± 0.45 ^{c-t}	55.89 ± 0.52 ^{d-r}	1.38 ± 0.02 ^{k-w}	7.34 ± 0.34 ^{o-z}	3.26 ± 0.07 ^{i-x}	15.17 ± 0.05 ^{x-C}
96	5367	1	23.22 ± 0.07 ^{s-x}	58.77 ± 0.01 ^{a-h}	1.04 ± 0.07 ^a	5.93 ± 0.13 ^{e-n}	3.21 ± 0.01 ^{i-t}	13.75 ± 0.00 ^{e-n}
		2	27.40 ± 0.96 ^{u-y}	53.22 ± 0.95 ^{a-e}	1.22 ± 0.07 ^{f-n}	7.19 ± 0.26 ^{m-z}	3.25 ± 0.07 ^{h-w}	14.92 ± 0.06 ^{w-B}
97	5368	1	-	-	-	-	-	-
		2	24.28 ± 0.38 ^{c-t}	55.97 ± 0.40 ^{d-r}	1.57 ± 0.02 ^{v-E}	7.06 ± 0.13 ^{k-z}	3.25 ± 0.02 ^{i-x}	14.93 ± 0.02 ^{u-B}
98	5369	1	22.65 ± 0.68 ^{q-w}	59.37 ± 0.57 ^{b-l}	1.51 ± 0.08 ^{h-w}	6.20 ± 0.22 ^{j-o}	3.22 ± 0.05 ^{j-t}	13.25 ± 0.22 ^{a-i}
		2	23.99 ± 1.64 ^{b-t}	56.49 ± 1.70 ^{f-v}	1.54 ± 0.13 ^{s-D}	6.99 ± 0.25 ^{j-z}	3.18 ± 0.10 ^{d-t}	14.81 ± 0.13 ^{q-z}
99	5370	1	19.02 ± 0.44 ^{ab}	62.28 ± 0.64 ^{n-v}	1.31 ± 0.05 ^{a-n}	5.71 ± 0.13 ^{d-m}	2.98 ± 0.01 ^a	14.41 ± 0.25 ^{l-o}
		2	28.20 ± 0.63 ^{xy}	51.82 ± 0.79 ^{ab}	1.50 ± 0.07 ^{q-B}	8.63 ± 0.67 ^A	3.46 ± 0.11 ^{B-F}	15.02 ± 0.12 ^{w-B}
100	5371	1	21.10 ± 0.24 ^{a-t}	61.21 ± 0.22 ^{g-v}	1.08 ± 0.05 ^{a-c}	5.51 ± 0.13 ^{a-k}	3.11 ± 0.02 ^{a-o}	13.48 ± 0.07 ^{a-m}
		2	22.25 ± 0.60 ^{a-k}	59.55 ± 0.80 ^{w-y}	1.21 ± 0.11 ^{e-m}	6.66 ± 0.38 ^{f-w}	3.33 ± 0.04 ^{q-D}	13.66 ± 0.05 ^{a-d}
101	5376	1	22.55 ± 0.00 ^{m-w}	59.31 ± 0.01 ^{c-m}	1.68 ± 0.03 ^{i-x}	6.31 ± 0.05 ^{g-n}	3.26 ± 0.01 ^{h-s}	13.20 ± 0.02 ^{a-m}
		2	21.91 ± 0.48 ^{a-e}	58.27 ± 0.43 ^{p-y}	1.62 ± 0.02 ^{y-G}	6.88 ± 0.19 ^{g-z}	3.17 ± 0.05 ^{c-s}	15.03 ± 0.14 ^{w-B}
102	5377	1	22.05 ± 0.33 ^{o-w}	59.56 ± 0.37 ^{b-k}	1.38 ± 0.02 ^{b-p}	5.85 ± 0.12 ^{e-n}	3.15 ± 0.03 ^{f-s}	13.85 ± 0.04 ^{d-n}
		2	24.74 ± 1.39 ^{h-u}	55.45 ± 1.34 ^{d-p}	1.64 ± 0.05 ^{z-l}	7.59 ± 0.39 ^{u-A}	3.31 ± 0.07 ^{p-C}	14.85 ± 0.17 ^{q-z}
103	5378	1	22.37 ± 0.78 ^{l-w}	59.59 ± 0.84 ^{c-o}	1.40 ± 0.04 ^{c-q}	5.62 ± 0.29 ^{a-k}	3.19 ± 0.03 ^{e-s}	13.45 ± 0.06 ^{a-m}
		2	25.16 ± 0.67 ^{l-w}	54.94 ± 0.74 ^{c-n}	1.69 ± 0.03 ^{B-J}	7.82 ± 0.25 ^{x-A}	3.34 ± 0.06 ^{r-D}	14.86 ± 0.05 ^{q-A}
104	5379	1	21.62 ± 0.11 ^{e-v}	59.96 ± 0.19 ^{c-n}	1.35 ± 0.07 ^{a-n}	5.44 ± 0.10 ^{a-m}	3.12 ± 0.02 ^{a-k}	13.95 ± 0.14 ^{j-o}
		2	23.86 ± 0.54 ^{b-s}	56.21 ± 0.71 ^{e-t}	1.64 ± 0.04 ^{z-l}	7.61 ± 0.30 ^{v-A}	3.41 ± 0.05 ^{w-E}	14.88 ± 0.16 ^{r-A}
105	5380	1	21.61 ± 1.75 ^{e-v}	59.32 ± 2.61 ^{b-k}	1.25 ± 0.08 ^{a-j}	6.13 ± 0.53 ⁱ⁻ⁿ	3.02 ± 0.04 ^{a-e}	14.81 ± 0.84 ^o
		2	-	-	-	-	-	-
106	5381	1	19.93 ± 0.81 ^{a-n}	61.96 ± 1.51 ^{l-v}	1.32 ± 0.31 ^{a-n}	5.76 ± 0.62 ^{d-n}	3.08 ± 0.03 ^{a-l}	13.72 ± 0.40 ^{c-n}
		2	-	-	-	-	-	-
107	Tarrestre	1	21.56 ± 0.82 ^{i-v}	59.00 ± 1.09 ^{a-h}	1.76 ± 0.04 ^y	6.93 ± 0.24 ^p	3.13 ± 0.01 ^{a-q}	14.55 ± 0.26 ^{no}
		2	24.70 ± 0.84 ^{e-u}	55.73 ± 1.03 ^{d-q}	1.70 ± 0.00 ^{B-J}	7.34 ± 0.20 ^{o-z}	3.29 ± 0.01 ^{l-A}	14.58 ± 0.19 ^{i-x}
Average ± SD (CV%)		1	21.26 ± 1.42 (6.7)	60.58 ± 1.50 (2.5)	1.44 ± 0.23 (16.1)	5.75 ± 0.44 (7.7)	3.15 ± 0.08 (2.6)	13.56 ± 0.45 (3.4)
		2	24.10 ± 1.66 (6.9)	56.68 ± 1.75 (3.1)	1.49 ± 0.32 (21.3)	6.77 ± 0.72 (10.7)	3.25 ± 0.13 (4.1)	14.49 ± 0.51 (3.5)

Table S5. Nested ANOVA of genotype (G), environment (E), block within environment (B(E)) and genotype $\times$ environment (G $\times$ E) interaction effects in common beans' variability.

	Source of variation								R ² (adjusted)
Nutritional Parameter	Genotype (G)		Environment (E)		Block (Environment) B(E)		Interaction (G × E)		
	F(105; 146)	Eta ² (%)	F(1; 146)	Eta ² (%)	F(2; 146)	Eta ² (%)	F(65; 146)	Eta ² (%)	
Protein	6.667***	38.0	681.471***	37.0	15.200***	1.6	4.384***	15.5	0.845
Carbohydrates	6.731***	31.2	1136.654***	50.2	15.831***	1.4	3.713***	10.7	0.877
Fat	21.816***	75.8	0.323 ^{n.s}	0.01	0.877 ^{n.s}	0.06	8.948***	19.3	0.897
Fiber	8.985***	41.4	741.947***	32.6	13.046***	1.1	6.487***	18.5	0.874
Moisture	5.115***	33.2	708.476***	43.8	1.187 ^{n.s}	0.1	3.446***	13.8	0.813
Ash	6.998***	47.3	140.997***	9.1	9.370***	1.2	7.902***	33.0	0.802

***Significant effect at 0.001 level; n.s non-significant effect, $p > 0.05$

Table S6. Content of essential amino acids, average $\pm$ SD (Standard deviation, g/16gN (100g of protein), in the different Portuguese common bean accessions cropped in Córdoba (n=72). Different letters, per column, indicate significant differences between accessions ($p < 0.05$).

#	Accessions	Thr	Val	Met	His	Lys	Ile	Leu	Phe	Total
1	579	3.71 $\pm$ 0.17 ^{b-k}	5.30 $\pm$ 0.23 ^{a-h}	0.63 $\pm$ 0.06 ^{d-l}	2.89 $\pm$ 0.14 ^{a-j}	6.75 $\pm$ 0.24 ^{c-m}	4.89 $\pm$ 0.23 ^{a-k}	8.61 $\pm$ 0.38 ^{a-j}	6.44 $\pm$ 0.35 ^{f-l}	39.24 $\pm$ 1.26 ^{c-l}
2	583	3.44 $\pm$ 0.37 ^{a-j}	4.89 $\pm$ 0.44 ^{a-h}	0.54 $\pm$ 0.07 ^{b-l}	2.77 $\pm$ 0.32 ^{a-j}	6.29 $\pm$ 0.59 ^{a-m}	4.57 $\pm$ 0.47 ^{a-h}	7.79 $\pm$ 0.78 ^{a-g}	5.87 $\pm$ 0.56 ^{a-k}	36.15 $\pm$ 3.26 ^{a-i}
3	584	3.53 $\pm$ 0.24 ^{a-k}	4.65 $\pm$ 0.04 ^{a-g}	0.58 $\pm$ 0.02 ^{b-l}	2.64 $\pm$ 0.23 ^{a-i}	5.41 $\pm$ 0.15 ^{a-e}	4.47 $\pm$ 0.50 ^{a-h}	7.62 $\pm$ 0.83 ^{a-e}	4.62 $\pm$ 0.14 ^a	33.53 $\pm$ 2.15 ^{a-f}
4	587	3.09 $\pm$ 0.47 ^{a-g}	4.81 $\pm$ 0.18 ^{a-h}	0.48 $\pm$ 0.08 ^{a-k}	2.65 $\pm$ 0.27 ^{a-i}	5.92 $\pm$ 0.50 ^{a-j}	4.28 $\pm$ 0.38 ^{a-f}	7.44 $\pm$ 0.60 ^{a-e}	5.45 $\pm$ 0.39 ^{a-h}	34.12 $\pm$ 2.86 ^{a-g}
5	592	2.58 $\pm$ 0.15 ^a	4.54 $\pm$ 0.30 ^{a-e}	0.61 $\pm$ 0.01 ^{c-l}	2.42 $\pm$ 0.14 ^{a-e}	5.65 $\pm$ 0.65 ^{a-h}	3.94 $\pm$ 0.18 ^{a-e}	7.06 $\pm$ 0.26 ^{a-e}	4.76 $\pm$ 0.26 ^{ab}	31.56 $\pm$ 1.69 ^{a-c}
14	645	3.24 $\pm$ 0.56 ^{a-h}	4.93 $\pm$ 0.24 ^{a-h}	0.47 $\pm$ 0.07 ^{a-k}	2.76 $\pm$ 0.28 ^{a-j}	6.04 $\pm$ 0.83 ^{a-l}	4.54 $\pm$ 0.61 ^{a-h}	7.80 $\pm$ 1.08 ^{a-g}	5.78 $\pm$ 0.67 ^{a-k}	35.57 $\pm$ 4.36 ^{a-h}
15	654	3.29 $\pm$ 0.18 ^{a-h}	5.41 $\pm$ 0.24 ^{a-h}	0.60 $\pm$ 0.06 ^{c-l}	3.24 $\pm$ 0.27 ^{f-l}	7.02 $\pm$ 0.62 ^{f-m}	5.07 $\pm$ 0.48 ^{b-l}	8.80 $\pm$ 0.91 ^{c-j}	6.41 $\pm$ 0.48 ^{g-l}	39.83 $\pm$ 3.09 ^{c-l}
17	670	3.51 $\pm$ 0.25 ^{a-j}	5.05 $\pm$ 0.21 ^{a-h}	0.72 $\pm$ 0.06 ^{kl}	2.97 $\pm$ 0.22 ^{a-j}	6.55 $\pm$ 0.49 ^{c-m}	4.67 $\pm$ 0.41 ^{a-h}	8.20 $\pm$ 0.73 ^{a-h}	6.23 $\pm$ 0.42 ^{b-l}	37.91 $\pm$ 2.71 ^{a-j}
19	698	3.08 $\pm$ 0.30 ^{a-g}	5.06 $\pm$ 0.36 ^{a-h}	0.49 $\pm$ 0.10 ^{a-k}	2.82 $\pm$ 0.27 ^{a-j}	5.93 $\pm$ 0.60 ^{a-h}	4.59 $\pm$ 0.47 ^{a-h}	7.75 $\pm$ 0.83 ^{a-f}	5.90 $\pm$ 0.52 ^{a-k}	35.59 $\pm$ 3.25 ^{a-g}
20	706	3.02 $\pm$ 0.36 ^{a-g}	4.86 $\pm$ 0.54 ^{a-h}	0.44 $\pm$ 0.13 ^{a-h}	2.70 $\pm$ 0.33 ^{a-j}	5.75 $\pm$ 0.61 ^{a-h}	4.33 $\pm$ 0.41 ^{a-f}	7.36 $\pm$ 0.71 ^{a-e}	5.61 $\pm$ 0.53 ^{a-i}	34.04 $\pm$ 3.32 ^{a-g}
22	737	2.79 $\pm$ 0.15 ^{a-d}	4.38 $\pm$ 0.27 ^{a-d}	0.40 $\pm$ 0.08 ^{a-f}	2.57 $\pm$ 0.18 ^{a-h}	5.40 $\pm$ 0.41 ^{a-e}	4.02 $\pm$ 0.26 ^{a-e}	6.77 $\pm$ 0.46 ^{a-d}	5.25 $\pm$ 0.37 ^{a-g}	31.58 $\pm$ 1.98 ^{a-c}
23	1631	2.98 $\pm$ 0.11 ^{a-g}	4.44 $\pm$ 0.31 ^{a-d}	0.48 $\pm$ 0.07 ^{a-k}	2.58 $\pm$ 0.03 ^{a-h}	5.54 $\pm$ 0.08 ^{a-f}	3.83 $\pm$ 0.05 ^{a-d}	6.66 $\pm$ 0.04 ^{a-c}	5.15 $\pm$ 0.03 ^{a-f}	31.60 $\pm$ 0.11 ^{a-c}
24	1636	2.62 $\pm$ 0.28 ^{ab}	4.08 $\pm$ 0.23 ^a	0.34 $\pm$ 0.01 ^{ab}	2.30 $\pm$ 0.13 ^{ab}	4.92 $\pm$ 0.27 ^a	3.67 $\pm$ 0.20 ^a	6.41 $\pm$ 0.32 ^a	4.81 $\pm$ 0.27 ^{a-c}	29.16 $\pm$ 1.61 ^a
25	1644	3.37 $\pm$ 0.28 ^{a-j}	4.76 $\pm$ 0.39 ^{a-h}	0.39 $\pm$ 0.02 ^{a-d}	2.69 $\pm$ 0.10 ^{a-j}	5.79 $\pm$ 0.16 ^{a-h}	4.31 $\pm$ 0.18 ^{a-f}	7.74 $\pm$ 0.31 ^{a-g}	5.62 $\pm$ 0.20 ^{a-i}	34.67 $\pm$ 1.47 ^{a-g}
26	1653	3.05 $\pm$ 0.13 ^{a-g}	4.15 $\pm$ 0.19 ^{ab}	0.47 $\pm$ 0.07 ^{a-j}	2.20 $\pm$ 0.15 ^a	4.96 $\pm$ 0.28 ^{ab}	3.79 $\pm$ 0.11 ^{ab}	6.45 $\pm$ 0.15 ^{ab}	4.92 $\pm$ 0.10 ^{a-e}	29.97 $\pm$ 0.38 ^{ab}
27	1654	2.66 $\pm$ 0.25 ^{a-c}	4.63 $\pm$ 0.40 ^{a-f}	0.46 $\pm$ 0.07 ^{a-j}	2.35 $\pm$ 0.09 ^{a-c}	5.31 $\pm$ 0.14 ^{a-c}	4.23 $\pm$ 0.08 ^{a-f}	7.15 $\pm$ 0.18 ^{a-e}	5.29 $\pm$ 0.17 ^{a-g}	32.11 $\pm$ 1.13 ^{a-c}
29	1663	3.22 $\pm$ 0.23 ^{a-h}	4.89 $\pm$ 0.32 ^{a-h}	0.48 $\pm$ 0.06 ^{a-k}	2.55 $\pm$ 0.21 ^{a-g}	5.84 $\pm$ 0.38 ^{a-h}	4.50 $\pm$ 0.35 ^{a-h}	7.86 $\pm$ 0.56 ^{a-g}	5.68 $\pm$ 0.24 ^{a-k}	35.00 $\pm$ 2.03 ^{a-g}
39	1955	3.22 $\pm$ 0.22 ^{a-h}	4.64 $\pm$ 0.31 ^{a-g}	0.55 $\pm$ 0.07 ^{b-l}	2.65 $\pm$ 0.18 ^{a-i}	6.17 $\pm$ 0.33 ^{a-l}	4.45 $\pm$ 0.17 ^{a-h}	7.97 $\pm$ 0.33 ^{a-g}	5.67 $\pm$ 0.34 ^{a-k}	35.34 $\pm$ 1.66 ^{a-g}
40	1966	3.75 $\pm$ 0.09 ^{d-k}	4.74 $\pm$ 0.13 ^{a-h}	0.53 $\pm$ 0.07 ^{b-l}	2.57 $\pm$ 0.17 ^{a-h}	5.91 $\pm$ 0.34 ^{a-j}	4.38 $\pm$ 0.23 ^{a-g}	7.72 $\pm$ 0.39 ^{a-g}	5.66 $\pm$ 0.19 ^{a-k}	35.25 $\pm$ 1.21 ^{a-g}
41	1975	3.21 $\pm$ 0.42 ^{a-h}	4.47 $\pm$ 0.29 ^{a-e}	0.49 $\pm$ 0.04 ^{a-k}	2.36 $\pm$ 0.18 ^{a-d}	5.38 $\pm$ 0.29 ^{a-d}	4.15 $\pm$ 0.09 ^{a-f}	7.06 $\pm$ 0.23 ^{a-e}	5.31 $\pm$ 0.21 ^{a-g}	32.44 $\pm$ 1.44 ^{a-d}
42	1976	3.67 $\pm$ 0.38 ^{a-k}	4.99 $\pm$ 0.68 ^{a-h}	0.54 $\pm$ 0.04 ^{b-l}	2.63 $\pm$ 0.22 ^{a-i}	6.01 $\pm$ 0.57 ^{a-l}	4.53 $\pm$ 0.37 ^{a-h}	8.06 $\pm$ 0.77 ^{a-h}	5.97 $\pm$ 0.67 ^{a-k}	36.38 $\pm$ 3.53 ^{a-i}
43	1984	3.34 $\pm$ 0.23 ^{a-i}	4.50 $\pm$ 0.39 ^{a-e}	0.45 $\pm$ 0.06 ^{a-i}	2.41 $\pm$ 0.18 ^{a-e}	5.67 $\pm$ 0.43 ^{a-h}	4.21 $\pm$ 0.20 ^{a-f}	7.46 $\pm$ 0.46 ^{a-e}	5.60 $\pm$ 0.46 ^{a-h}	33.66 $\pm$ 2.08 ^{a-f}
47	2159	3.79 $\pm$ 0.25 ^{d-m}	4.85 $\pm$ 0.15 ^{a-h}	0.51 $\pm$ 0.05 ^{a-k}	2.54 $\pm$ 0.18 ^{a-g}	5.96 $\pm$ 0.32 ^{a-k}	4.41 $\pm$ 0.14 ^{a-g}	7.90 $\pm$ 0.25 ^{a-g}	5.81 $\pm$ 0.22 ^{a-k}	35.74 $\pm$ 1.06 ^{a-i}
48	2179	3.29 $\pm$ 0.27 ^{a-i}	4.46 $\pm$ 0.26 ^{a-e}	0.43 $\pm$ 0.04 ^{a-h}	2.59 $\pm$ 0.07 ^{a-h}	5.79 $\pm$ 0.15 ^{a-h}	4.30 $\pm$ 0.10 ^{a-f}	7.82 $\pm$ 0.28 ^{a-g}	5.68 $\pm$ 0.15 ^{a-k}	34.34 $\pm$ 0.83 ^{a-g}
50	4048	3.61 $\pm$ 0.26 ^{a-k}	4.84 $\pm$ 0.38 ^{a-h}	0.40 $\pm$ 0.09 ^{a-f}	2.62 $\pm$ 0.29 ^{a-i}	5.74 $\pm$ 0.60 ^{a-h}	4.62 $\pm$ 0.27 ^{a-h}	7.40 $\pm$ 0.91 ^{a-e}	5.56 $\pm$ 0.74 ^{a-h}	34.90 $\pm$ 3.32 ^{a-g}
51	4049	3.53 $\pm$ 0.21 ^{a-k}	4.94 $\pm$ 0.29 ^{a-h}	0.64 $\pm$ 0.05 ^{e-l}	2.73 $\pm$ 0.12 ^{a-j}	6.04 $\pm$ 0.28 ^{a-l}	4.56 $\pm$ 0.20 ^{a-h}	8.03 $\pm$ 0.49 ^{a-h}	5.81 $\pm$ 0.16 ^{a-k}	36.23 $\pm$ 1.32 ^{a-i}
52	4050	3.39 $\pm$ 0.29 ^{a-j}	4.82 $\pm$ 0.15 ^{a-h}	0.52 $\pm$ 0.06 ^{a-k}	2.75 $\pm$ 0.19 ^{a-j}	6.13 $\pm$ 0.40 ^{a-l}	4.52 $\pm$ 0.24 ^{a-h}	8.08 $\pm$ 0.46 ^{a-h}	5.93 $\pm$ 0.34 ^{a-k}	36.15 $\pm$ 1.85 ^{a-i}
53	4051	3.50 $\pm$ 0.46 ^{a-j}	4.75 $\pm$ 0.44 ^{a-h}	0.47 $\pm$ 0.12 ^{a-j}	2.74 $\pm$ 0.28 ^{a-j}	6.11 $\pm$ 0.66 ^{a-l}	4.43 $\pm$ 0.62 ^{a-g}	8.00 $\pm$ 1.14 ^{a-g}	5.80 $\pm$ 0.69 ^{a-k}	35.75 $\pm$ 3.91 ^{a-i}
54	4070	3.59 $\pm$ 0.28 ^{a-k}	4.91 $\pm$ 0.26 ^{a-h}	0.48 $\pm$ 0.08 ^{a-k}	2.64 $\pm$ 0.28 ^{a-i}	6.01 $\pm$ 0.58 ^{a-l}	4.28 $\pm$ 0.36 ^{a-f}	7.88 $\pm$ 0.65 ^{a-g}	5.72 $\pm$ 0.52 ^{a-k}	35.53 $\pm$ 2.87 ^{a-h}
55	4071	3.74 $\pm$ 0.31 ^{c-k}	5.24 $\pm$ 0.25 ^{a-h}	0.54 $\pm$ 0.06 ^{b-l}	2.88 $\pm$ 0.18 ^{a-j}	6.31 $\pm$ 0.42 ^{a-m}	4.85 $\pm$ 0.32 ^{a-k}	8.63 $\pm$ 0.55 ^{a-j}	6.22 $\pm$ 0.38 ^{b-l}	38.44 $\pm$ 2.07 ^{b-k}
56	4072	3.94 $\pm$ 0.31 ^{f-n}	5.67 $\pm$ 0.22 ^{b-h}	0.60 $\pm$ 0.03 ^{c-l}	3.17 $\pm$ 0.10 ^{e-l}	6.97 $\pm$ 0.17 ^{e-m}	5.24 $\pm$ 0.18 ^{e-l}	9.25 $\pm$ 0.30 ^{e-k}	6.58 $\pm$ 0.17 ^{f-l}	41.39 $\pm$ 0.73 ^{d-l}
58	4081	3.82 $\pm$ 0.22 ^{d-m}	5.62 $\pm$ 0.32 ^{a-h}	0.54 $\pm$ 0.04 ^{b-l}	3.06 $\pm$ 0.12 ^{b-j}	6.74 $\pm$ 0.26 ^{c-m}	5.17 $\pm$ 0.31 ^{e-l}	9.06 $\pm$ 0.56 ^{d-k}	6.45 $\pm$ 0.24 ^{f-l}	40.41 $\pm$ 1.66 ^{c-l}
59	4085	3.91 $\pm$ 0.16 ^{e-m}	5.04 $\pm$ 0.10 ^{a-h}	0.29 $\pm$ 0.01 ^a	2.63 $\pm$ 0.02 ^{a-i}	6.30 $\pm$ 0.09 ^{a-m}	4.96 $\pm$ 0.07 ^{a-k}	9.03 $\pm$ 0.08 ^{d-k}	6.06 $\pm$ 0.24 ^{a-l}	38.33 $\pm$ 0.71 ^{a-k}
60	4088	3.93 $\pm$ 0.38 ^{f-m}	5.15 $\pm$ 0.62 ^{a-h}	0.44 $\pm$ 0.11 ^{a-h}	2.63 $\pm$ 0.32 ^{a-i}	5.99 $\pm$ 0.82 ^{a-l}	4.46 $\pm$ 0.49 ^{a-h}	8.08 $\pm$ 1.03 ^{a-h}	5.73 $\pm$ 0.78 ^{a-k}	36.37 $\pm$ 4.38 ^{a-i}
61	4097	3.27 $\pm$ 0.44 ^{a-h}	4.83 $\pm$ 0.51 ^{a-h}	0.41 $\pm$ 0.06 ^{a-g}	2.77 $\pm$ 0.21 ^{a-j}	6.18 $\pm$ 0.55 ^{a-m}	4.27 $\pm$ 0.49 ^{a-f}	7.62 $\pm$ 0.87 ^{a-e}	5.81 $\pm$ 0.58 ^{a-k}	35.17 $\pm$ 3.49 ^{a-g}

Table S6. *Cont.*

#	Accessions	Thr	Val	Met	His	Lys	Ile	Leu	Phe	Total
62	4100	3.37 ± 0.35 ^{a-j}	4.96 ± 0.30 ^{a-h}	0.51 ± 0.08 ^{a-k}	2.66 ± 0.28 ^{a-i}	6.21 ± 0.59 ^{a-m}	4.31 ± 0.50 ^{a-f}	7.54 ± 0.86 ^{a-e}	5.89 ± 0.58 ^{a-k}	35.49 ± 3.43 ^{a-h}
63	4108	3.59 ± 0.29 ^{a-k}	5.45 ± 0.19 ^{a-h}	0.55 ± 0.06 ^{b-l}	2.99 ± 0.19 ^{a-j}	6.67 ± 0.41 ^{c-m}	4.72 ± 0.35 ^{a-i}	8.46 ± 0.66 ^{a-j}	6.47 ± 0.42 ^{f-l}	38.88 ± 2.29 ^{b-l}
64	4119	3.65 ± 0.39 ^{a-k}	5.54 ± 0.47 ^{a-h}	0.41 ± 0.08 ^{a-g}	2.67 ± 0.34 ^{a-i}	6.16 ± 0.77 ^{a-l}	4.43 ± 0.66 ^{a-g}	8.94 ± 0.96 ^{c-j}	5.93 ± 0.93 ^{a-k}	37.71 ± 3.77 ^{a-j}
65	4120	3.13 ± 0.37 ^{a-g}	4.81 ± 0.39 ^{a-h}	0.38 ± 0.06 ^{a-c}	2.76 ± 0.24 ^{a-j}	6.16 ± 0.52 ^{a-l}	4.31 ± 0.42 ^{a-f}	7.44 ± 0.74 ^{a-e}	5.75 ± 0.45 ^{a-k}	34.81 ± 3.01 ^{a-g}
66	4127	3.61 ± 0.56 ^{a-k}	5.54 ± 0.59 ^{a-h}	0.50 ± 0.13 ^{a-k}	2.74 ± 0.45 ^{a-j}	6.21 ± 0.94 ^{a-m}	4.40 ± 0.64 ^{a-g}	9.07 ± 0.93 ^{d-k}	5.82 ± 0.95 ^{a-k}	37.87 ± 4.01 ^{a-j}
67	4133	2.91 ± 0.41 ^{a-f}	4.82 ± 0.43 ^{a-h}	0.46 ± 0.12 ^{a-j}	2.49 ± 0.37 ^{a-f}	5.64 ± 0.77 ^{a-g}	4.43 ± 0.70 ^{a-g}	8.02 ± 1.24 ^{a-h}	5.20 ± 0.81 ^{a-f}	33.93 ± 3.86 ^{a-g}
68	4150	3.05 ± 0.43 ^{a-g}	4.39 ± 0.34 ^{a-d}	0.39 ± 0.07 ^{a-d}	2.50 ± 0.27 ^{a-f}	5.67 ± 0.63 ^{a-h}	3.80 ± 0.49 ^{a-c}	6.84 ± 0.85 ^{a-d}	5.26 ± 0.56 ^{a-g}	31.96 ± 3.51 ^{a-c}
70	4182	2.83 ± 0.18 ^{a-e}	4.46 ± 0.42 ^{a-e}	0.48 ± 0.08 ^{a-k}	2.61 ± 0.13 ^{a-h}	5.76 ± 0.41 ^{a-h}	3.99 ± 0.34 ^{a-e}	7.25 ± 0.84 ^{a-e}	5.31 ± 0.47 ^{a-g}	32.70 ± 2.57 ^{a-e}
71	4185	3.33 ± 0.25 ^{a-l}	5.33 ± 0.53 ^{a-h}	0.53 ± 0.08 ^{b-l}	2.88 ± 0.17 ^{a-j}	6.59 ± 0.21 ^{c-m}	4.69 ± 0.23 ^{a-h}	8.48 ± 0.53 ^{a-j}	6.29 ± 0.38 ^{c-l}	38.15 ± 1.72 ^{a-k}
72	4189	3.39 ± 0.25 ^{a-j}	5.09 ± 0.60 ^{a-h}	0.69 ± 0.02 ^{i-l}	3.07 ± 0.11 ^{b-j}	6.87 ± 0.26 ^{c-m}	4.50 ± 0.10 ^{a-h}	8.11 ± 0.24 ^{a-h}	5.77 ± 0.15 ^{a-k}	37.46 ± 1.39 ^{a-j}
75	4295	4.29 ± 0.37 ^{h-o}	5.53 ± 0.27 ^{a-h}	0.60 ± 0.08 ^{c-l}	3.33 ± 0.10 ^{g-m}	7.75 ± 0.16 ^m	4.96 ± 0.19 ^{a-k}	8.87 ± 0.41 ^{c-j}	6.30 ± 0.28 ^{c-l}	41.64 ± 1.20 ^{e-l}
76	4300	3.37 ± 0.43 ^{a-j}	4.98 ± 0.63 ^{a-h}	0.64 ± 0.03 ^{f-l}	2.82 ± 0.33 ^{a-j}	6.55 ± 0.82 ^{c-m}	4.42 ± 0.78 ^{a-g}	7.85 ± 1.35 ^{a-g}	5.73 ± 0.65 ^{a-k}	36.31 ± 4.82 ^{a-i}
77	5249	3.92 ± 0.09 ^{e-m}	5.75 ± 0.61 ^{c-h}	0.48 ± 0.01 ^{a-k}	3.08 ± 0.14 ^{b-j}	7.20 ± 0.40 ^{g-m}	5.10 ± 0.54 ^{c-l}	8.89 ± 1.03 ^{c-j}	6.17 ± 0.42 ^{b-l}	40.61 ± 2.79 ^{c-l}
78	5285	3.40 ± 0.28 ^{a-j}	5.75 ± 0.57 ^{c-h}	0.61 ± 0.05 ^{c-l}	3.16 ± 0.11 ^{d-l}	7.45 ± 0.36 ^{j-m}	5.08 ± 0.31 ^{b-l}	8.73 ± 0.61 ^{b-j}	6.24 ± 0.20 ^{b-l}	40.38 ± 1.58 ^{c-l}
79	5286	3.77 ± 0.39 ^{d-l}	5.67 ± 0.62 ^{b-h}	0.43 ± 0.02 ^{a-h}	3.02 ± 0.12 ^{b-j}	7.21 ± 0.45 ^{g-m}	5.11 ± 0.38 ^{d-l}	8.86 ± 0.62 ^{c-j}	6.24 ± 0.11 ^{b-l}	40.38 ± 2.26 ^{c-l}
80	5287	4.05 ± 0.18 ^{g-o}	5.81 ± 0.68 ^{c-h}	0.60 ± 0.02 ^{c-l}	3.08 ± 0.10 ^{b-j}	7.22 ± 0.29 ^{h-m}	5.07 ± 0.14 ^{b-l}	9.04 ± 0.30 ^{d-k}	6.32 ± 0.14 ^{c-l}	41.22 ± 1.11 ^{d-l}
81	5288	3.68 ± 0.38 ^{b-k}	4.52 ± 0.70 ^{a-e}	0.58 ± 0.09 ^{b-l}	3.08 ± 0.24 ^{b-j}	6.93 ± 0.57 ^{d-m}	4.79 ± 0.35 ^{a-i}	8.23 ± 0.55 ^{a-h}	6.05 ± 0.42 ^{a-l}	37.84 ± 3.05 ^{a-j}
84	5291	4.24 ± 0.28 ^{h-o}	5.90 ± 0.50 ^{d-h}	0.54 ± 0.06 ^{b-l}	3.06 ± 0.30 ^{b-j}	7.42 ± 0.29 ^{i-m}	5.17 ± 0.19 ^{e-l}	9.05 ± 0.23 ^{d-k}	6.55 ± 0.21 ^{f-l}	41.92 ± 1.50 ^{f-l}
85	5292	3.51 ± 0.44 ^{a-j}	5.78 ± 0.83 ^{c-h}	0.58 ± 0.06 ^{b-l}	3.19 ± 0.18 ^{e-l}	7.56 ± 0.37 ^{lm}	5.36 ± 0.19 ^{f-l}	9.37 ± 0.20 ^{e-k}	6.53 ± 0.35 ^{f-l}	41.86 ± 2.31 ^{f-l}
86	5295	4.44 ± 0.35 ^{j-o}	5.46 ± 0.44 ^{a-h}	0.59 ± 0.01 ^{c-l}	3.37 ± 0.19 ^{h-m}	7.12 ± 0.13 ^{g-m}	5.11 ± 0.10 ^{d-l}	8.75 ± 0.00 ^{b-j}	6.36 ± 0.10 ^{d-l}	41.17 ± 1.12 ^{d-l}
87	5296	3.95 ± 0.26 ^{f-n}	5.34 ± 0.06 ^{a-h}	0.60 ± 0.05 ^{c-l}	3.01 ± 0.20 ^{b-j}	6.66 ± 0.59 ^{c-m}	4.80 ± 0.38 ^{a-j}	8.34 ± 0.83 ^{a-i}	5.97 ± 0.60 ^{a-k}	38.67 ± 2.88 ^{b-l}
88	5297	3.60 ± 0.32 ^{a-k}	5.24 ± 0.58 ^{a-h}	0.55 ± 0.07 ^{b-l}	3.18 ± 0.29 ^{e-l}	7.06 ± 0.40 ^{f-m}	4.81 ± 0.28 ^{a-j}	8.58 ± 0.46 ^{a-j}	6.11 ± 0.18 ^{a-l}	39.11 ± 2.07 ^{c-l}
89	5298	4.03 ± 0.69 ^{g-o}	5.02 ± 0.41 ^{a-h}	0.49 ± 0.04 ^{a-k}	3.06 ± 0.12 ^{b-j}	6.80 ± 0.21 ^{c-m}	4.62 ± 0.11 ^{a-h}	8.17 ± 0.10 ^{a-h}	5.86 ± 0.11 ^{a-k}	38.07 ± 1.38 ^{a-k}
90	5300	4.38 ± 0.13 ^{i-o}	5.82 ± 0.29 ^{c-h}	0.67 ± 0.04 ^{h-l}	3.34 ± 0.21 ^{g-m}	7.49 ± 0.19 ^{k-m}	5.34 ± 0.18 ^{f-l}	9.26 ± 0.41 ^{e-k}	6.60 ± 0.34 ^{f-l}	42.83 ± 1.08 ^{g-l}
91	5302	3.77 ± 0.15 ^{d-l}	5.04 ± 0.35 ^{a-h}	0.45 ± 0.11 ^{a-i}	2.94 ± 0.19 ^{a-j}	6.29 ± 0.64 ^{a-m}	4.31 ± 0.57 ^{a-f}	7.62 ± 1.04 ^{a-e}	5.47 ± 0.75 ^{a-h}	35.98 ± 3.69 ^{a-i}
93	5363	4.04 ± 0.45 ^{g-o}	5.99 ± 0.25 ^{e-h}	0.57 ± 0.04 ^{b-l}	3.43 ± 0.25 ^{i-m}	7.52 ± 0.54 ^{k-m}	5.42 ± 0.44 ^{f-l}	9.19 ± 0.76 ^{e-k}	6.39 ± 0.65 ^{e-l}	42.54 ± 2.86 ^{f-l}
95	5366	3.82 ± 0.36 ^{d-m}	5.31 ± 0.59 ^{a-h}	0.49 ± 0.08 ^{a-k}	2.98 ± 0.29 ^{a-j}	6.88 ± 0.43 ^{c-m}	5.00 ± 0.26 ^{b-k}	8.44 ± 0.40 ^{a-j}	5.99 ± 0.25 ^{a-k}	38.89 ± 2.35 ^{b-l}
96	5367	4.00 ± 0.30 ^{f-o}	4.73 ± 0.34 ^{a-h}	0.57 ± 0.03 ^{b-l}	2.97 ± 0.22 ^{a-j}	6.64 ± 0.51 ^{c-m}	5.11 ± 0.24 ^{d-l}	8.93 ± 0.42 ^{c-j}	6.76 ± 0.37 ^{g-l}	39.71 ± 2.27 ^{c-l}
97	5368	3.64 ± 0.20 ^{a-k}	5.36 ± 0.44 ^{a-h}	0.39 ± 0.00 ^{a-e}	2.87 ± 0.05 ^{a-j}	6.36 ± 0.00 ^{a-m}	5.32 ± 0.24 ^{f-l}	9.04 ± 0.32 ^{d-k}	6.10 ± 0.06 ^{a-l}	39.14 ± 0.74 ^{b-l}
98	5369	4.87 ± 0.29 ^{m-o}	6.25 ± 0.81 ^h	0.60 ± 0.15 ^{c-l}	3.30 ± 0.36 ^{f-m}	7.06 ± 0.99 ^{f-m}	5.67 ± 1.05 ^{g-l}	9.99 ± 1.85 ^{g-k}	6.92 ± 1.06 ^{h-l}	44.73 ± 6.28 ^{j-l}
99	5370	5.06 ± 0.53 ^o	6.19 ± 0.69 ^{gh}	0.66 ± 0.04 ^{h-l}	3.12 ± 0.26 ^{c-k}	7.05 ± 0.21 ^{f-m}	5.75 ± 0.14 ^{h-l}	9.96 ± 0.30 ^{f-k}	6.66 ± 0.21 ^{f-l}	44.44 ± 1.05 ^{h-l}
100	5371	5.03 ± 0.01 ^{no}	6.15 ± 0.30 ^{f-h}	0.65 ± 0.03 ^{g-l}	4.06 ± 0.14 ^m	7.53 ± 0.28 ^{k-m}	6.33 ± 0.33 ^l	10.68 ± 0.49 ^{jk}	7.17 ± 0.12 ^{kl}	47.58 ± 0.86 ^l
101	5376	4.62 ± 0.26 ^{k-o}	6.16 ± 0.86 ^{f-h}	0.60 ± 0.12 ^{c-l}	3.96 ± 0.43 ^{lm}	7.53 ± 0.41 ^{k-m}	6.00 ± 0.68 ^{h-l}	10.31 ± 1.02 ^{h-k}	7.12 ± 0.58 ^{i-l}	46.33 ± 3.92 ^{j-l}
102	5377	3.47 ± 0.50 ^{a-j}	4.38 ± 0.82 ^{a-d}	0.59 ± 0.16 ^{c-l}	3.15 ± 0.50 ^{c-k}	5.85 ± 0.57 ^{a-i}	4.77 ± 0.54 ^{a-i}	8.04 ± 0.92 ^{a-h}	5.65 ± 0.57 ^{a-j}	35.84 ± 4.09 ^{a-i}
103	5378	4.05 ± 0.16 ^{g-o}	4.28 ± 0.34 ^{a-c}	0.63 ± 0.02 ^{d-l}	2.78 ± 0.18 ^{a-j}	6.51 ± 0.15 ^{b-m}	4.21 ± 0.24 ^{a-f}	8.10 ± 0.12 ^{a-h}	4.85 ± 0.05 ^{a-d}	35.46 ± 0.72 ^{a-h}

Table S6. *Cont.*

#	Accessions	Thr	Val	Met	His	Lys	Ile	Leu	Phe	Total
104	5379	4.85 ± 0.70 ^{l-o}	5.27 ± 1.09 ^{a-h}	0.76 ± 0.14 ^l	3.92 ± 0.56 ^{k-m}	7.51 ± 0.71 ^{k-m}	6.11 ± 0.84 ^{l-l}	10.61 ± 1.37 ^{i-k}	7.14 ± 0.71 ^{j-l}	46.18 ± 5.09 ^{j-l}
107	Tarrestre	4.26 ± 0.42 ^{h-o}	6.21 ± 0.90 ^h	0.70 ± 0.16 ^{j-l}	3.48 ± 0.52 ^{j-m}	7.46 ± 0.53 ^{j-m}	6.14 ± 0.57 ^{kl}	11.24 ± 1.10 ^k	7.56 ± 0.61 ^l	46.98 ± 4.48 ^{kl}
Average ± SD (CV%)		3.62 ± 0.54 (15.0)	5.10 ± 0.54 (10.6)	0.53 ± 0.09 (17.9)	2.88 ± 0.37 (12.8)	6.40 ± 0.70 (10.9)	4.71 ± 0.57 (12.0)	8.29 ± 0.98 (11.8)	5.94 ± 0.59 (9.9)	37.48 ± 4.04 (10.8)
Average, % of the total measured protein (n=72)		3.8	5.4	0.6	3.0	6.8	5.0	8.8	6.3	39.6

Table S7. Protein efficiency ratio (PER) calculated for the different Portuguese common bean accessions cropped in Córdoba (n=72).

#	Accessions	PER1	PER2	PER3
1	579	3.06 ± 0.17	3.08 ± 0.17	2.49 ± 0.24
2	583	2.70 ± 0.34	2.71 ± 0.32	1.86 ± 0.40
3	584	2.62 ± 0.37	2.65 ± 0.35	1.86 ± 0.44
4	587	2.55 ± 0.26	2.59 ± 0.25	1.82 ± 0.31
5	592	2.37 ± 0.12	2.42 ± 0.10	1.65 ± 0.16
14	645	2.71 ± 0.47	2.74 ± 0.45	2.01 ± 0.58
15	654	3.14 ± 0.41	3.11 ± 0.39	2.29 ± 0.54
17	670	2.87 ± 0.33	2.87 ± 0.31	2.07 ± 0.46
19	698	2.67 ± 0.37	2.70 ± 0.34	1.80 ± 0.45
20	706	2.50 ± 0.30	2.54 ± 0.28	1.69 ± 0.24
22	737	2.25 ± 0.20	2.29 ± 0.19	1.34 ± 0.20
23	1631	2.19 ± 0.02	2.24 ± 0.02	1.23 ± 0.01
24	1636	2.10 ± 0.14	2.15 ± 0.13	1.16 ± 0.13
25	1644	2.67 ± 0.14	2.71 ± 0.13	1.91 ± 0.15
26	1653	2.11 ± 0.06	2.19 ± 0.05	1.44 ± 0.07
27	1654	2.41 ± 0.08	2.49 ± 0.09	1.90 ± 0.22
29	1663	2.72 ± 0.24	2.78 ± 0.24	2.18 ± 0.33
39	1955	2.77 ± 0.15	2.81 ± 0.13	2.15 ± 0.14
40	1966	2.66 ± 0.16	2.72 ± 0.15	2.09 ± 0.11
41	1975	2.37 ± 0.10	2.45 ± 0.09	1.78 ± 0.11
42	1976	2.81 ± 0.34	2.86 ± 0.32	2.26 ± 0.36
43	1984	2.54 ± 0.20	2.60 ± 0.19	1.83 ± 0.25
47	2159	2.73 ± 0.11	2.79 ± 0.10	2.11 ± 0.11
48	2179	2.71 ± 0.13	2.74 ± 0.12	1.90 ± 0.12
50	4048	2.51 ± 0.41	2.57 ± 0.37	1.81 ± 0.42
51	4049	2.80 ± 0.22	2.84 ± 0.21	2.24 ± 0.33
52	4050	2.82 ± 0.20	2.86 ± 0.19	2.22 ± 0.24
53	4051	2.78 ± 0.51	2.82 ± 0.48	2.14 ± 0.61
54	4070	2.72 ± 0.29	2.77 ± 0.26	2.07 ± 0.28
55	4071	3.07 ± 0.24	3.09 ± 0.23	2.55 ± 0.24
56	4072	3.34 ± 0.13	3.34 ± 0.13	2.84 ± 0.17
58	4081	3.26 ± 0.25	3.27 ± 0.24	2.78 ± 0.36
59	4085	3.25 ± 0.03	3.27 ± 0.03	2.66 ± 0.10
60	4088	2.81 ± 0.47	2.86 ± 0.42	2.13 ± 0.48
61	4097	2.61 ± 0.38	2.64 ± 0.37	1.74 ± 0.47
62	4100	2.58 ± 0.37	2.60 ± 0.36	1.67 ± 0.43
63	4108	2.98 ± 0.29	2.98 ± 0.28	2.10 ± 0.38
64	4119	3.20 ± 0.42	3.24 ± 0.42	2.76 ± 0.73
65	4120	2.54 ± 0.33	2.55 ± 0.31	1.51 ± 0.37
66	4127	3.25 ± 0.41	3.29 ± 0.41	2.79 ± 0.70
67	4133	2.81 ± 0.55	2.86 ± 0.55	2.34 ± 0.92
68	4150	2.28 ± 0.37	2.32 ± 0.35	1.41 ± 0.38
70	4182	2.46 ± 0.37	2.49 ± 0.35	1.59 ± 0.42
71	4185	2.99 ± 0.24	3.02 ± 0.22	2.38 ± 0.25
72	4189	2.82 ± 0.10	2.83 ± 0.10	2.01 ± 0.14
75	4295	3.14 ± 0.18	3.13 ± 0.17	2.20 ± 0.21
76	4300	2.71 ± 0.59	2.76 ± 0.63	2.16 ± 1.32
77	5249	3.17 ± 0.46	3.17 ± 0.45	2.40 ± 0.62
78	5285	3.10 ± 0.27	3.09 ± 0.25	2.29 ± 0.24
79	5286	3.16 ± 0.27	3.14 ± 0.26	2.24 ± 0.34
80	5287	3.24 ± 0.13	3.25 ± 0.13	2.64 ± 0.17
81	5288	2.87 ± 0.24	2.88 ± 0.22	2.02 ± 0.19
84	5291	3.23 ± 0.09	3.23 ± 0.08	2.46 ± 0.15
85	5292	3.38 ± 0.09	3.35 ± 0.06	2.51 ± 0.07
86	5295	3.09 ± 0.01	3.08 ± 0.02	2.16 ± 0.12
87	5296	2.94 ± 0.36	2.94 ± 0.35	2.19 ± 0.42

Table S7. Cont.

#	Accessions	PER1	PER2	PER3
88	5297	3.03 ± 0.21	3.02 ± 0.19	2.15 ± 0.27
89	5298	2.84 ± 0.05	2.85 ± 0.05	1.92 ± 0.21
90	5300	3.33 ± 0.19	3.31 ± 0.18	2.54 ± 0.24
91	5302	2.60 ± 0.46	2.64 ± 0.44	1.83 ± 0.58
93	5363	3.30 ± 0.34	3.29 ± 0.32	2.58 ± 0.37
95	5366	2.97 ± 0.17	2.97 ± 0.16	2.08 ± 0.14
96	5367	3.22 ± 0.18	3.22 ± 0.17	2.73 ± 0.17
97	5368	3.26 ± 0.15	3.28 ± 0.15	2.82 ± 0.27
98	5369	3.65 ± 0.82	3.62 ± 0.78	2.89 ± 1.01
99	5370	3.63 ± 0.14	3.61 ± 0.15	2.94 ± 0.29
100	5371	3.95 ± 0.22	3.89 ± 0.20	3.24 ± 0.18
101	5376	3.79 ± 0.44	3.75 ± 0.41	3.17 ± 0.40
102	5377	2.79 ± 0.40	2.83 ± 0.38	2.19 ± 0.44
103	5378	2.85 ± 0.06	2.90 ± 0.05	2.62 ± 0.16
104	5379	3.93 ± 0.61	3.89 ± 0.57	3.49 ± 0.74
107	Tarrestre	4.22 ± 0.48	4.16 ± 0.45	3.64 ± 0.57
Average ± SD (CV%)		2.91 ± 0.43 (14.7)	2.93 ± 0.40 (13.7)	2.20 ± 0.50 (22.7)

Table S8. Amino acid score of individual amino acids for the different common bean accessions cropped in Córdoba (n=72) by comparison with the scoring pattern recommended for children from 2 to 5 years old [33].

2 – 5 years old									
#	AA (Req.) Accessions	Val (35)	Thr (34)	Ile (28)	Leu (66)	Met (25)*	His (19)	Phe+Tyr (63)	Lys (58)
1	579	151.47 ± 6.53	109.09 ± 5.07	174.80 ± 8.11	130.52 ± 5.81	25.16 ± 2.35	152.32 ± 7.29	157.65 ± 6.99	116.41 ± 4.10
2	583	139.65 ± 12.46	101.30 ± 10.83	163.07 ± 16.65	117.99 ± 11.85	21.55 ± 2.75	145.54 ± 16.63	147.32 ± 14.17	108.39 ± 10.10
3	584	132.82 ± 1.19	103.90 ± 6.97	159.68 ± 17.92	115.52 ± 12.58	23.14 ± 0.77	139.09 ± 12.34	125.11 ± 6.65	93.35 ± 2.53
4	587	137.35 ± 5.01	90.95 ± 13.94	152.88 ± 13.44	112.80 ± 9.14	19.31 ± 3.09	139.35 ± 14.24	135.90 ± 10.30	101.98 ± 8.63
5	592	129.66 ± 8.59	75.84 ± 4.27	140.79 ± 6.29	106.96 ± 3.98	24.30 ± 0.58	127.40 ± 7.31	122.91 ± 7.90	97.43 ± 11.29
14	645	140.91 ± 6.99	95.21 ± 16.61	162.27 ± 21.95	118.21 ± 16.38	18.99 ± 2.85	145.08 ± 14.70	143.03 ± 16.61	104.10 ± 14.37
15	654	154.65 ± 6.84	96.63 ± 5.21	180.98 ± 17.18	133.33 ± 13.84	23.95 ± 2.30	170.35 ± 14.40	164.00 ± 11.78	121.07 ± 10.61
17	670	144.39 ± 5.98	103.22 ± 7.29	166.70 ± 14.72	124.26 ± 11.13	28.70 ± 2.55	156.58 ± 11.49	157.00 ± 9.79	112.99 ± 8.46
19	698	144.48 ± 10.41	90.47 ± 8.84	163.80 ± 16.90	117.36 ± 12.59	15.56 ± 9.35	148.33 ± 14.08	146.78 ± 13.29	102.24 ± 10.31
20	706	138.86 ± 15.35	88.80 ± 10.59	154.59 ± 14.60	111.48 ± 10.75	17.56 ± 5.13	142.08 ± 17.30	139.15 ± 14.54	99.21 ± 10.57
22	737	125.07 ± 7.62	82.04 ± 4.52	143.45 ± 9.19	102.52 ± 6.95	16.02 ± 3.06	135.03 ± 9.38	131.20 ± 8.74	93.16 ± 7.06
23	1631	126.73 ± 8.74	87.69 ± 3.09	136.66 ± 1.76	100.95 ± 0.62	19.15 ± 2.68	136.04 ± 1.49	130.13 ± 0.13	95.51 ± 1.46
24	1636	116.45 ± 6.67	77.13 ± 8.15	130.99 ± 7.27	97.16 ± 4.88	13.78 ± 0.58	121.16 ± 6.63	121.29 ± 7.44	84.76 ± 4.73
25	1644	135.86 ± 11.10	99.00 ± 8.21	153.99 ± 6.58	117.21 ± 4.68	15.54 ± 0.61	141.48 ± 5.19	140.46 ± 5.19	99.91 ± 2.81
26	1653	118.57 ± 5.43	89.70 ± 3.80	135.32 ± 4.00	97.77 ± 2.26	18.61 ± 2.75	115.54 ± 7.73	119.02 ± 4.52	85.59 ± 4.84
27	1654	132.18 ± 11.51	78.13 ± 7.29	151.07 ± 2.80	108.34 ± 2.69	18.51 ± 2.95	123.62 ± 4.61	127.20 ± 2.35	91.50 ± 2.39
29	1663	139.63 ± 9.16	94.77 ± 6.64	160.79 ± 12.53	119.08 ± 8.42	19.25 ± 2.59	134.46 ± 11.30	138.40 ± 6.83	100.74 ± 6.60
39	1955	132.65 ± 8.86	94.65 ± 6.53	158.95 ± 5.90	120.70 ± 5.04	21.86 ± 2.73	139.45 ± 9.34	141.39 ± 8.19	106.41 ± 5.60
40	1966	135.34 ± 3.84	110.35 ± 2.52	156.60 ± 8.38	117.01 ± 5.85	21.39 ± 2.84	135.45 ± 8.98	138.33 ± 6.91	101.86 ± 5.91
41	1975	127.57 ± 8.42	94.50 ± 12.43	148.14 ± 3.27	107.02 ± 3.55	19.74 ± 1.75	123.98 ± 9.26	128.44 ± 5.72	92.77 ± 5.05
42	1976	142.54 ± 19.49	107.96 ± 11.21	161.74 ± 13.16	122.19 ± 11.66	21.54 ± 1.46	138.23 ± 11.57	145.12 ± 15.65	103.68 ± 9.77
43	1984	128.50 ± 11.11	98.22 ± 6.82	150.42 ± 7.26	112.98 ± 7.01	18.08 ± 2.47	126.84 ± 9.55	137.33 ± 10.32	97.78 ± 7.33
47	2159	138.54 ± 4.31	111.56 ± 7.44	157.57 ± 4.95	119.66 ± 3.77	20.26 ± 1.87	133.59 ± 9.47	142.40 ± 5.86	102.79 ± 5.59
48	2179	127.49 ± 7.47	96.89 ± 7.87	153.39 ± 3.66	118.50 ± 4.17	17.12 ± 1.62	136.45 ± 3.73	142.37 ± 3.93	99.78 ± 2.57
50	4048	138.36 ± 10.92	106.30 ± 7.59	164.85 ± 9.55	112.19 ± 13.86	16.07 ± 3.57	138.05 ± 15.17	137.27 ± 18.53	98.99 ± 10.32
51	4049	141.17 ± 8.34	103.80 ± 6.04	163.02 ± 7.00	121.70 ± 7.35	25.44 ± 2.06	143.94 ± 6.22	143.36 ± 4.10	104.12 ± 4.78
52	4050	137.74 ± 4.20	99.73 ± 8.55	161.60 ± 8.52	122.37 ± 7.00	20.63 ± 2.26	144.90 ± 9.84	145.72 ± 7.98	105.65 ± 6.91
53	4051	135.67 ± 12.65	102.90 ± 13.45	158.06 ± 22.24	121.15 ± 17.35	18.65 ± 4.96	144.38 ± 14.97	143.23 ± 16.97	105.30 ± 11.31
54	4070	140.24 ± 7.56	105.51 ± 8.11	152.84 ± 12.95	119.46 ± 9.78	19.19 ± 3.20	138.87 ± 14.90	141.92 ± 13.06	103.56 ± 9.93
55	4071	149.84 ± 7.20	109.88 ± 9.19	173.19 ± 11.44	130.73 ± 8.28	21.73 ± 2.25	151.78 ± 9.33	152.85 ± 9.38	108.74 ± 7.29
56	4072	162.02 ± 6.39	116.00 ± 9.23	187.08 ± 6.27	140.11 ± 4.55	23.84 ± 1.39	166.92 ± 5.48	162.85 ± 4.55	120.22 ± 3.00
58	4081	160.45 ± 9.01	112.46 ± 6.38	184.51 ± 11.10	137.27 ± 8.52	21.77 ± 1.49	161.23 ± 6.40	158.36 ± 6.21	116.15 ± 4.49
59	4085	144.01 ± 2.94	114.87 ± 4.82	177.16 ± 2.62	136.84 ± 1.22	11.40 ± 0.28	138.39 ± 0.93	151.73 ± 4.27	108.63 ± 1.52
60	4088	147.27 ± 17.85	115.66 ± 11.12	159.37 ± 17.59	122.39 ± 15.54	17.55 ± 4.33	138.22 ± 16.90	142.78 ± 19.07	103.21 ± 14.18
61	4097	138.11 ± 14.69	96.19 ± 13.06	152.54 ± 17.34	115.44 ± 13.16	16.50 ± 2.39	145.67 ± 10.94	145.24 ± 13.20	106.59 ± 9.49
62	4100	141.78 ± 8.64	99.01 ± 10.21	154.10 ± 18.00	114.30 ± 13.03	20.34 ± 3.18	139.81 ± 14.63	147.26 ± 14.54	107.09 ± 10.11
63	4108	155.81 ± 5.46	105.55 ± 8.53	168.55 ± 12.58	128.22 ± 9.96	21.86 ± 2.41	157.57 ± 9.75	162.28 ± 9.25	115.08 ± 7.06
64	4119	158.27 ± 13.44	107.28 ± 11.46	158.25 ± 23.66	135.41 ± 14.56	16.45 ± 3.38	140.42 ± 18.08	146.77 ± 22.26	106.23 ± 13.20
65	4120	137.55 ± 11.25	92.10 ± 10.88	153.84 ± 14.92	112.76 ± 11.27	15.37 ± 2.45	145.51 ± 12.63	145.98 ± 11.61	106.15 ± 8.90
66	4127	158.28 ± 16.77	106.27 ± 16.58	157.12 ± 22.99	137.39 ± 14.13	20.11 ± 5.19	144.00 ± 23.61	147.03 ± 23.27	107.06 ± 16.24
67	4133	137.60 ± 12.16	85.58 ± 11.96	158.09 ± 25.11	121.55 ± 18.72	18.40 ± 4.88	131.16 ± 19.69	129.86 ± 19.94	97.24 ± 13.35
68	4150	125.54 ± 9.68	89.80 ± 12.54	135.81 ± 17.37	103.65 ± 12.83	15.60 ± 2.68	131.52 ± 14.14	131.15 ± 14.62	97.72 ± 10.88
70	4182	127.48 ± 11.91	83.23 ± 5.15	142.47 ± 12.00	109.84 ± 12.72	19.02 ± 3.34	137.42 ± 7.04	134.94 ± 11.91	99.23 ± 7.05
71	4185	152.28 ± 15.22	97.85 ± 7.39	167.55 ± 8.25	128.49 ± 8.03	21.32 ± 3.07	151.41 ± 8.89	154.93 ± 9.43	113.55 ± 3.59
72	4189	145.51 ± 17.01	99.65 ± 7.23	160.79 ± 3.64	122.82 ± 3.57	27.57 ± 0.97	161.60 ± 6.02	149.41 ± 4.26	118.38 ± 4.45
75	4295	158.04 ± 7.58	126.16 ± 10.77	177.26 ± 6.95	134.39 ± 6.20	23.88 ± 3.01	175.48 ± 5.46	165.04 ± 6.04	133.59 ± 2.77
76	4300	142.35 ± 17.95	99.22 ± 12.71	157.79 ± 27.86	118.96 ± 20.42	25.54 ± 1.03	148.28 ± 17.57	141.41 ± 12.73	112.85 ± 14.21
77	5249	164.18 ± 17.30	115.17 ± 2.69	182.07 ± 19.17	134.67 ± 15.66	19.16 ± 0.20	162.01 ± 7.11	158.32 ± 10.15	124.21 ± 6.96
78	5285	164.26 ± 16.14	99.94 ± 8.34	181.42 ± 11.18	132.25 ± 9.29	24.50 ± 1.90	166.30 ± 5.96	159.77 ± 7.27	128.48 ± 6.20
79	5286	162.03 ± 17.80	111.03 ± 11.62	182.58 ± 13.47	134.29 ± 9.32	17.19 ± 0.84	159.20 ± 6.29	161.31 ± 4.82	124.33 ± 7.70
80	5287	166.07 ± 19.51	119.16 ± 5.39	181.02 ± 5.08	137.03 ± 4.47	24.10 ± 0.89	162.32 ± 5.46	159.39 ± 3.03	124.52 ± 4.93
81	5288	129.26 ± 19.94	108.24 ± 11.08	170.96 ± 12.59	124.73 ± 8.36	23.15 ± 3.69	162.35 ± 12.76	154.52 ± 11.56	119.46 ± 9.89

Table S8. Cont.

2 – 5 years old									
#	AA (Req.) Accessions	Val (35)	Thr (34)	Ile (28)	Leu (66)	Met (25)*	His (19)	Phe+Tyr (63)	Lys (58)
84	5291	168.49 ± 14.14	124.65 ± 8.21	184.55 ± 6.64	137.16 ± 3.46	21.41 ± 2.26	160.82 ± 15.89	165.65 ± 3.20	127.94 ± 5.06
85	5292	165.16 ± 23.59	103.18 ± 12.92	191.37 ± 6.68	141.92 ± 3.07	23.10 ± 2.33	167.94 ± 9.48	169.31 ± 9.19	130.30 ± 6.30
86	5295	155.87 ± 12.45	130.73 ± 10.40	182.50 ± 3.48	132.53 ± 0.07	23.70 ± 0.55	177.14 ± 10.16	165.02 ± 1.14	122.71 ± 2.23
87	5296	152.47 ± 1.83	116.18 ± 7.69	171.56 ± 13.71	126.40 ± 12.60	23.80 ± 1.99	158.57 ± 10.68	151.88 ± 13.65	114.91 ± 10.24
88	5297	149.69 ± 16.43	105.79 ± 9.31	171.91 ± 10.03	129.95 ± 7.03	21.85 ± 2.94	167.57 ± 15.39	157.91 ± 6.55	121.64 ± 6.87
89	5298	143.33 ± 11.75	118.44 ± 20.34	165.08 ± 4.05	123.75 ± 1.48	19.72 ± 1.41	160.88 ± 6.34	152.08 ± 4.68	117.18 ± 3.70
90	5300	166.41 ± 8.30	128.90 ± 3.94	190.66 ± 6.59	140.23 ± 6.21	26.78 ± 1.52	175.61 ± 10.82	169.03 ± 7.17	129.22 ± 3.19
91	5302	143.89 ± 9.90	110.74 ± 4.29	154.06 ± 20.27	115.43 ± 15.71	18.02 ± 4.22	154.89 ± 9.78	139.81 ± 16.51	108.48 ± 11.09
93	5363	171.26 ± 7.07	118.79 ± 13.16	193.50 ± 15.71	139.29 ± 11.53	22.88 ± 1.76	180.35 ± 12.95	164.27 ± 14.76	129.67 ± 9.34
95	5366	151.62 ± 16.76	112.47 ± 10.50	178.61 ± 9.40	127.86 ± 6.11	19.46 ± 3.01	156.99 ± 15.40	154.18 ± 7.69	118.64 ± 7.41
96	5367	135.18 ± 9.70	117.65 ± 8.85	182.63 ± 8.66	135.31 ± 6.40	22.90 ± 1.35	156.31 ± 11.77	162.55 ± 9.52	114.55 ± 8.75
97	5368	153.20 ± 12.53	107.01 ± 5.84	190.11 ± 8.69	136.95 ± 4.82	15.78 ± 0.16	151.17 ± 2.51	150.86 ± 0.17	109.61 ± 0.00
98	5369	178.53 ± 23.01	143.27 ± 8.54	202.64 ± 37.43	151.43 ± 28.04	23.94 ± 5.83	173.66 ± 18.72	178.36 ± 25.77	121.80 ± 17.07
99	5370	176.74 ± 19.60	148.80 ± 15.50	205.46 ± 4.87	150.95 ± 4.52	26.39 ± 1.62	164.38 ± 13.47	172.36 ± 5.57	121.48 ± 3.57
100	5371	175.63 ± 8.62	148.01 ± 0.40	225.95 ± 11.91	161.74 ± 7.44	26.10 ± 1.37	213.56 ± 7.39	188.01 ± 1.88	129.83 ± 4.82
101	5376	176.01 ± 24.57	135.75 ± 7.65	214.24 ± 24.29	156.29 ± 15.40	23.90 ± 4.81	208.24 ± 22.71	183.04 ± 15.98	129.77 ± 7.02
102	5377	125.09 ± 23.33	101.95 ± 14.72	170.22 ± 19.46	121.79 ± 14.01	23.59 ± 6.42	165.58 ± 26.50	142.83 ± 16.49	100.94 ± 9.87
103	5378	122.28 ± 9.82	119.06 ± 4.79	150.19 ± 8.49	122.79 ± 1.84	25.16 ± 0.85	146.22 ± 9.46	123.49 ± 2.13	112.24 ± 2.51
104	5379	150.63 ± 31.17	142.75 ± 20.65	218.06 ± 30.08	160.70 ± 20.77	30.50 ± 5.71	206.49 ± 29.43	182.76 ± 19.10	129.51 ± 12.19
107	Tarrestre	177.46 ± 25.73	125.38 ± 12.35	219.35 ± 20.22	170.38 ± 16.63	28.03 ± 6.46	183.13 ± 27.48	192.62 ± 17.81	128.56 ± 9.11
Average ± SD (CV%)		145.85 ± 15.43 (10.6)	106.47 ± 15.93 (15.0)	168.13 ± 20.22 (12.0)	125.59 ± 14.80 (11.8)	21.01 ± 3.82 (18.2)	151.75 ± 19.36 (12.8)	149.48 ± 15.96 (10.7)	110.40 ± 12.06 (10.9)

Table S9. Content of non-essential amino acids, average $\pm$ SD (Standard deviation), g/16gN (100g of protein), in the different Portuguese common bean accessions cropped in Córdoba (n=72). Different letters, per column, indicate significant differences between accessions ($p < 0.05$).

#	Accessions	Asp	Ser	Gly	Glu	Ala	Pro	Tyr	Arg	Total
1	579	11.06 $\pm$ 0.29 ^{f-n}	5.97 $\pm$ 0.17 ^{k-t}	4.50 $\pm$ 0.17 ^{a-n}	23.28 $\pm$ 0.92 ^{f-k}	4.58 $\pm$ 0.18 ^{a-k}	3.91 $\pm$ 0.09 ^{a-k}	3.49 $\pm$ 0.13 ^{a-n}	4.73 $\pm$ 0.28 ^{b-l}	61.52 $\pm$ 1.75 ^{c-i}
2	583	9.62 $\pm$ 1.16 ^{a-k}	5.16 $\pm$ 0.43 ^{b-n}	4.16 $\pm$ 0.51 ^{a-j}	20.43 $\pm$ 1.92 ^{b-i}	4.29 $\pm$ 0.49 ^{a-h}	3.64 $\pm$ 0.34 ^{a-g}	3.41 $\pm$ 0.33 ^{a-l}	4.39 $\pm$ 0.36 ^{a-k}	55.10 $\pm$ 5.38 ^{a-f}
3	584	9.43 $\pm$ 0.87 ^{a-j}	5.11 $\pm$ 0.35 ^{b-n}	4.64 $\pm$ 0.14 ^{b-n}	19.23 $\pm$ 1.41 ^{a-h}	4.18 $\pm$ 0.22 ^{a-g}	3.57 $\pm$ 0.25 ^{a-g}	3.26 $\pm$ 0.28 ^{a-k}	4.65 $\pm$ 0.08 ^{b-l}	54.08 $\pm$ 3.34 ^{a-f}
4	587	9.72 $\pm$ 1.15 ^{a-k}	4.80 $\pm$ 0.55 ^{b-m}	4.14 $\pm$ 0.42 ^{a-j}	18.95 $\pm$ 2.17 ^{a-h}	4.12 $\pm$ 0.42 ^{a-g}	3.37 $\pm$ 0.33 ^{a-c}	3.11 $\pm$ 0.26 ^{a-h}	5.11 $\pm$ 0.40 ^{e-n}	53.32 $\pm$ 5.70 ^{a-f}
5	592	7.82 $\pm$ 0.80 ^a	4.85 $\pm$ 0.10 ^{b-m}	5.07 $\pm$ 0.41 ^{f-n}	14.00 $\pm$ 1.07 ^a	3.67 $\pm$ 0.18 ^a	3.47 $\pm$ 0.19 ^{a-e}	2.98 $\pm$ 0.24 ^{a-f}	4.56 $\pm$ 0.33 ^{b-l}	46.43 $\pm$ 2.92 ^{ab}
14	645	9.93 $\pm$ 1.21 ^{a-k}	4.26 $\pm$ 0.58 ^{a-e}	4.15 $\pm$ 0.35 ^{a-j}	19.42 $\pm$ 2.44 ^{b-i}	4.33 $\pm$ 0.40 ^{a-g}	3.55 $\pm$ 0.41 ^{a-f}	3.23 $\pm$ 0.37 ^{a-j}	4.27 $\pm$ 0.54 ^{a-k}	53.14 $\pm$ 6.31 ^{a-f}
15	654	10.74 $\pm$ 0.92 ^{d-n}	4.61 $\pm$ 0.43 ^{a-k}	4.83 $\pm$ 0.44 ^{c-n}	22.20 $\pm$ 1.23 ^{e-k}	4.56 $\pm$ 0.24 ^{a-k}	4.04 $\pm$ 0.22 ^{a-k}	3.93 $\pm$ 0.26 ^{f-p}	5.23 $\pm$ 0.33 ^{g-n}	60.12 $\pm$ 3.81 ^{c-i}
17	670	10.69 $\pm$ 0.88 ^{d-n}	5.47 $\pm$ 0.47 ^{e-q}	4.77 $\pm$ 0.38 ^{c-n}	21.85 $\pm$ 1.32 ^{c-k}	4.57 $\pm$ 0.29 ^{a-k}	3.93 $\pm$ 0.21 ^{a-k}	3.66 $\pm$ 0.20 ^{b-o}	4.64 $\pm$ 0.25 ^{b-l}	59.58 $\pm$ 3.53 ^{b-h}
19	698	9.93 $\pm$ 1.03 ^{a-k}	4.33 $\pm$ 0.48 ^{a-f}	4.26 $\pm$ 0.44 ^{a-l}	19.50 $\pm$ 1.67 ^{b-i}	4.32 $\pm$ 0.36 ^{a-h}	3.69 $\pm$ 0.28 ^{a-g}	3.35 $\pm$ 0.33 ^{a-k}	4.26 $\pm$ 0.37 ^{a-i}	53.65 $\pm$ 4.69 ^{a-f}
20	706	9.31 $\pm$ 1.16 ^{a-j}	3.96 $\pm$ 0.58 ^{a-c}	4.22 $\pm$ 0.51 ^{a-l}	19.86 $\pm$ 1.77 ^{b-i}	4.22 $\pm$ 0.48 ^{a-g}	3.55 $\pm$ 0.44 ^{a-f}	3.16 $\pm$ 0.40 ^{a-i}	4.26 $\pm$ 0.52 ^{a-j}	52.52 $\pm$ 5.42 ^{a-e}
22	737	8.74 $\pm$ 0.80 ^{a-h}	3.81 $\pm$ 0.50 ^{ab}	3.94 $\pm$ 0.28 ^{a-g}	18.16 $\pm$ 1.15 ^{a-f}	3.86 $\pm$ 0.22 ^{a-c}	3.29 $\pm$ 0.26 ^{a-c}	3.02 $\pm$ 0.18 ^{a-g}	3.95 $\pm$ 0.35 ^{a-h}	48.76 $\pm$ 3.67 ^{a-c}
23	1631	8.97 $\pm$ 0.20 ^{a-i}	4.43 $\pm$ 0.15 ^{a-i}	3.85 $\pm$ 0.08 ^{a-e}	18.95 $\pm$ 0.01 ^{a-h}	4.14 $\pm$ 0.01 ^{a-g}	3.47 $\pm$ 0.02 ^{a-e}	3.05 $\pm$ 0.04 ^{a-g}	4.11 $\pm$ 0.03 ^{a-i}	50.97 $\pm$ 0.20 ^{a-e}
24	1636	7.86 $\pm$ 0.60 ^{ab}	3.24 $\pm$ 0.29 ^a	3.41 $\pm$ 0.35 ^a	15.51 $\pm$ 1.41 ^{ab}	3.67 $\pm$ 0.23 ^a	3.09 $\pm$ 0.19 ^a	2.83 $\pm$ 0.20 ^{a-d}	3.68 $\pm$ 0.23 ^{a-c}	43.29 $\pm$ 3.43 ^a
25	1644	9.49 $\pm$ 0.53 ^{a-j}	4.40 $\pm$ 0.18 ^{a-h}	3.99 $\pm$ 0.32 ^{a-i}	17.89 $\pm$ 0.94 ^{a-e}	4.15 $\pm$ 0.21 ^{a-g}	3.60 $\pm$ 0.10 ^{a-g}	3.23 $\pm$ 0.13 ^{a-j}	4.86 $\pm$ 0.21 ^{c-m}	51.62 $\pm$ 2.38 ^{a-e}
26	1653	9.07 $\pm$ 0.21 ^{a-i}	5.27 $\pm$ 0.13 ^{c-o}	4.12 $\pm$ 0.25 ^{a-j}	18.49 $\pm$ 0.06 ^{a-g}	3.89 $\pm$ 0.02 ^{a-c}	3.19 $\pm$ 0.10 ^{ab}	2.58 $\pm$ 0.18 ^a	3.22 $\pm$ 0.18 ^a	49.82 $\pm$ 0.10 ^{a-d}
27	1654	9.46 $\pm$ 0.79 ^{a-j}	5.07 $\pm$ 0.45 ^{b-n}	4.17 $\pm$ 0.53 ^{a-k}	18.67 $\pm$ 1.17 ^{a-g}	4.09 $\pm$ 0.12 ^{a-f}	3.54 $\pm$ 0.06 ^{a-f}	2.73 $\pm$ 0.08 ^{ab}	3.46 $\pm$ 0.12 ^{ab}	51.19 $\pm$ 2.91 ^{a-e}
29	1663	10.52 $\pm$ 0.46 ^{b-m}	5.55 $\pm$ 0.35 ^{e-r}	4.54 $\pm$ 0.25 ^{a-n}	21.06 $\pm$ 0.97 ^{c-i}	4.59 $\pm$ 0.24 ^{a-k}	3.88 $\pm$ 0.29 ^{a-j}	3.04 $\pm$ 0.19 ^{a-g}	3.90 $\pm$ 0.20 ^{a-f}	57.07 $\pm$ 2.38 ^{b-g}
39	1955	10.32 $\pm$ 0.61 ^{a-m}	5.68 $\pm$ 0.52 ^{f-r}	4.47 $\pm$ 0.25 ^{a-n}	20.64 $\pm$ 1.19 ^{b-i}	4.39 $\pm$ 0.17 ^{a-h}	3.81 $\pm$ 0.12 ^{a-h}	3.23 $\pm$ 0.20 ^{a-j}	4.47 $\pm$ 0.34 ^{a-k}	57.02 $\pm$ 2.69 ^{b-g}
40	1966	10.61 $\pm$ 0.14 ^{d-n}	6.27 $\pm$ 0.17 ^{a-t}	4.64 $\pm$ 0.18 ^{b-n}	20.38 $\pm$ 0.95 ^{b-i}	4.40 $\pm$ 0.12 ^{a-i}	3.80 $\pm$ 0.24 ^{a-h}	3.05 $\pm$ 0.25 ^{a-g}	4.11 $\pm$ 0.33 ^{a-i}	57.27 $\pm$ 2.10 ^{b-g}
41	1975	9.73 $\pm$ 0.60 ^{a-k}	5.68 $\pm$ 0.19 ^{f-r}	4.21 $\pm$ 0.16 ^{a-l}	19.26 $\pm$ 1.32 ^{b-h}	4.08 $\pm$ 0.14 ^{a-e}	3.47 $\pm$ 0.10 ^{a-e}	2.78 $\pm$ 0.16 ^{a-c}	4.14 $\pm$ 0.39 ^{a-i}	53.36 $\pm$ 2.73 ^{a-f}
42	1976	10.28 $\pm$ 0.99 ^{a-m}	5.88 $\pm$ 0.65 ^{j-t}	4.75 $\pm$ 0.46 ^{b-n}	20.85 $\pm$ 1.96 ^{c-i}	4.40 $\pm$ 0.29 ^{a-i}	3.82 $\pm$ 0.24 ^{a-h}	3.17 $\pm$ 0.33 ^{a-i}	4.24 $\pm$ 0.38 ^{a-j}	57.40 $\pm$ 4.96 ^{b-g}
43	1984	9.70 $\pm$ 0.87 ^{a-k}	5.75 $\pm$ 0.40 ^{g-s}	4.69 $\pm$ 0.34 ^{b-n}	18.53 $\pm$ 0.96 ^{a-g}	4.26 $\pm$ 0.22 ^{a-h}	3.69 $\pm$ 0.18 ^{a-g}	3.05 $\pm$ 0.21 ^{a-g}	3.67 $\pm$ 0.32 ^{a-c}	53.34 $\pm$ 2.62 ^{a-f}
47	2159	10.45 $\pm$ 0.12 ^{a-m}	5.87 $\pm$ 0.21 ^{j-t}	4.78 $\pm$ 0.10 ^{c-n}	19.19 $\pm$ 1.67 ^{a-h}	4.52 $\pm$ 0.13 ^{a-k}	3.89 $\pm$ 0.16 ^{a-k}	3.16 $\pm$ 0.19 ^{a-i}	3.93 $\pm$ 0.32 ^{a-g}	55.80 $\pm$ 2.43 ^{a-f}
48	2179	9.38 $\pm$ 0.26 ^{a-j}	5.53 $\pm$ 0.16 ^{e-r}	4.11 $\pm$ 0.13 ^{a-j}	18.12 $\pm$ 0.32 ^{a-f}	4.05 $\pm$ 0.20 ^{a-e}	3.58 $\pm$ 0.12 ^{a-g}	3.29 $\pm$ 0.09 ^{a-k}	4.10 $\pm$ 0.20 ^{a-i}	52.16 $\pm$ 0.99 ^{a-e}
50	4048	10.20 $\pm$ 0.82 ^{a-l}	5.49 $\pm$ 0.44 ^{e-r}	4.67 $\pm$ 0.39 ^{b-n}	18.99 $\pm$ 2.14 ^{a-h}	4.49 $\pm$ 0.33 ^{a-j}	3.85 $\pm$ 0.28 ^{a-j}	3.09 $\pm$ 0.43 ^{a-h}	3.76 $\pm$ 0.57 ^{a-d}	54.55 $\pm$ 4.91 ^{a-f}
51	4049	10.30 $\pm$ 0.19 ^{a-m}	5.26 $\pm$ 0.11 ^{c-o}	4.17 $\pm$ 0.12 ^{a-k}	19.77 $\pm$ 0.80 ^{b-i}	4.23 $\pm$ 0.09 ^{a-g}	3.72 $\pm$ 0.07 ^{a-h}	3.22 $\pm$ 0.10 ^{a-j}	4.83 $\pm$ 0.56 ^{c-m}	55.49 $\pm$ 0.86 ^{a-f}
52	4050	10.28 $\pm$ 0.54 ^{a-m}	5.49 $\pm$ 0.35 ^{e-r}	4.65 $\pm$ 0.51 ^{b-n}	18.23 $\pm$ 1.23 ^{a-f}	4.09 $\pm$ 0.27 ^{a-f}	3.76 $\pm$ 0.24 ^{a-h}	3.25 $\pm$ 0.17 ^{a-k}	4.12 $\pm$ 0.37 ^{a-i}	53.87 $\pm$ 3.28 ^{a-f}
53	4051	9.68 $\pm$ 0.98 ^{a-k}	5.79 $\pm$ 0.52 ^{j-t}	4.59 $\pm$ 0.36 ^{a-n}	18.74 $\pm$ 1.92 ^{a-g}	4.42 $\pm$ 0.39 ^{a-i}	3.78 $\pm$ 0.39 ^{a-h}	3.23 $\pm$ 0.38 ^{a-j}	3.91 $\pm$ 0.50 ^{a-f}	54.14 $\pm$ 5.24 ^{a-f}
54	4070	9.64 $\pm$ 1.25 ^{a-k}	6.17 $\pm$ 0.40 ^{m-t}	4.85 $\pm$ 0.41 ^{d-n}	20.33 $\pm$ 1.89 ^{b-i}	4.60 $\pm$ 0.41 ^{a-k}	3.98 $\pm$ 0.34 ^{a-k}	3.22 $\pm$ 0.30 ^{a-j}	3.68 $\pm$ 0.45 ^{a-c}	56.46 $\pm$ 4.82 ^{a-g}
55	4071	10.57 $\pm$ 0.63 ^{c-m}	5.89 $\pm$ 0.35 ^{j-t}	4.85 $\pm$ 0.33 ^{d-n}	20.14 $\pm$ 1.74 ^{b-i}	4.56 $\pm$ 0.34 ^{a-k}	3.88 $\pm$ 0.24 ^{a-k}	3.41 $\pm$ 0.23 ^{a-m}	4.14 $\pm$ 0.36 ^{a-i}	57.45 $\pm$ 3.81 ^{b-g}
56	4072	11.34 $\pm$ 0.30 ^{g-n}	5.97 $\pm$ 0.24 ^{k-t}	5.37 $\pm$ 0.29 ^{k-n}	21.13 $\pm$ 1.66 ^{c-i}	4.91 $\pm$ 0.20 ^{c-m}	4.20 $\pm$ 0.15 ^{c-l}	3.68 $\pm$ 0.12 ^{b-o}	4.70 $\pm$ 0.20 ^{b-l}	61.30 $\pm$ 2.89 ^{c-i}
58	4081	11.41 $\pm$ 0.41 ^{h-n}	5.86 $\pm$ 0.27 ^{j-t}	5.26 $\pm$ 0.12 ^{j-n}	20.72 $\pm$ 1.36 ^{b-i}	4.86 $\pm$ 0.15 ^{b-m}	4.09 $\pm$ 0.20 ^{b-l}	3.52 $\pm$ 0.17 ^{a-n}	4.67 $\pm$ 0.35 ^{b-l}	60.39 $\pm$ 2.25 ^{c-i}
59	4085	9.52 $\pm$ 0.20 ^{a-k}	5.10 $\pm$ 0.10 ^{b-n}	4.62 $\pm$ 0.01 ^{a-n}	17.50 $\pm$ 0.50 ^{a-e}	4.56 $\pm$ 0.05 ^{a-k}	3.95 $\pm$ 0.12 ^{a-k}	3.50 $\pm$ 0.03 ^{a-n}	4.24 $\pm$ 0.19 ^{a-j}	52.98 $\pm$ 1.20 ^{a-e}
60	4088	10.64 $\pm$ 0.93 ^{d-n}	5.82 $\pm$ 0.49 ^{j-t}	4.95 $\pm$ 0.56 ^{d-n}	16.84 $\pm$ 2.46 ^{a-d}	4.63 $\pm$ 0.33 ^{a-l}	4.05 $\pm$ 0.30 ^{a-k}	3.26 $\pm$ 0.42 ^{a-k}	3.92 $\pm$ 0.73 ^{a-f}	54.11 $\pm$ 5.84 ^{a-f}
61	4097	9.91 $\pm$ 0.98 ^{a-k}	5.62 $\pm$ 0.51 ^{e-r}	4.39 $\pm$ 0.49 ^{d-m}	19.81 $\pm$ 1.93 ^{b-i}	4.27 $\pm$ 0.40 ^{a-h}	3.74 $\pm$ 0.37 ^{a-h}	3.35 $\pm$ 0.27 ^{a-k}	3.87 $\pm$ 0.40 ^{a-e}	54.96 $\pm$ 5.24 ^{a-f}

Table S9. Cont.

#	Accessions	Asp	Ser	Gly	Glu	Ala	Pro	Tyr	Arg	Total
62	4100	9.71 ± 0.85 ^{a-k}	5.77 ± 0.49 ^{h-t}	4.45 ± 0.45 ^{a-n}	19.69 ± 1.57 ^{b-i}	4.42 ± 0.56 ^{a-i}	3.84 ± 0.53 ^{a-i}	3.38 ± 0.34 ^{a-l}	3.91 ± 0.44 ^{a-f}	55.19 ± 5.16 ^{a-f}
63	4108	10.99 ± 0.53 ^{e-n}	5.92 ± 0.25 ^{j-t}	4.60 ± 0.39 ^{a-n}	20.45 ± 1.15 ^{b-i}	4.76 ± 0.36 ^{a-m}	4.14 ± 0.34 ^{b-l}	3.75 ± 0.17 ^{d-p}	4.39 ± 0.32 ^{a-k}	59.00 ± 3.30 ^{b-h}
64	4119	10.93 ± 0.85 ^{e-n}	5.58 ± 0.42 ^{e-r}	4.91 ± 0.38 ^{d-n}	19.38 ± 2.13 ^{b-h}	4.94 ± 0.44 ^{c-m}	4.08 ± 0.43 ^{b-l}	3.32 ± 0.48 ^{a-k}	3.95 ± 0.57 ^{a-h}	57.09 ± 4.93 ^{b-g}
65	4120	9.65 ± 0.78 ^{e-n}	5.11 ± 0.27 ^{b-n}	4.54 ± 0.36 ^{a-n}	19.58 ± 1.59 ^{b-i}	4.24 ± 0.38 ^{a-g}	3.64 ± 0.32 ^{a-g}	3.44 ± 0.29 ^{a-m}	3.87 ± 0.41 ^{a-e}	54.06 ± 4.30 ^{a-f}
66	4127	11.04 ± 0.89 ^{f-n}	5.75 ± 0.56 ^{g-s}	5.17 ± 0.48 ⁱ⁻ⁿ	18.79 ± 1.99 ^{a-g}	4.77 ± 0.39 ^{a-m}	4.17 ± 0.39 ^{c-l}	3.44 ± 0.52 ^{a-m}	4.09 ± 0.69 ^{a-i}	57.22 ± 5.19 ^{b-g}
67	4133	8.45 ± 1.24 ^{a-f}	4.69 ± 0.62 ^{b-l}	4.82 ± 0.59 ^{c-n}	17.26 ± 2.05 ^{a-e}	3.86 ± 0.50 ^{a-c}	3.40 ± 0.45 ^{a-d}	2.98 ± 0.45 ^{a-f}	3.71 ± 0.64 ^{a-d}	49.16 ± 6.44 ^{a-c}
68	4150	8.54 ± 0.94 ^{a-f}	4.75 ± 0.53 ^{b-l}	3.63 ± 0.47 ^{a-c}	18.12 ± 2.03 ^{a-f}	3.75 ± 0.56 ^{ab}	3.36 ± 0.42 ^{a-c}	3.00 ± 0.36 ^{a-f}	3.68 ± 0.46 ^{a-c}	48.82 ± 5.71 ^{a-c}
70	4182	9.25 ± 0.70 ^{a-j}	4.76 ± 0.48 ^{b-l}	4.00 ± 0.16 ^{a-i}	16.62 ± 0.83 ^{a-c}	4.01 ± 0.27 ^{a-e}	3.46 ± 0.21 ^{a-e}	3.19 ± 0.28 ^{a-j}	4.62 ± 0.40 ^{b-l}	49.91 ± 3.19 ^{a-d}
71	4185	10.52 ± 0.60 ^{b-m}	5.49 ± 0.26 ^{e-r}	4.73 ± 0.22 ^{b-n}	19.53 ± 0.78 ^{b-i}	4.65 ± 0.13 ^{a-l}	4.05 ± 0.11 ^{a-k}	3.47 ± 0.24 ^{a-n}	4.32 ± 0.28 ^{a-k}	56.74 ± 1.80 ^{a-g}
72	4189	10.22 ± 0.38 ^{a-l}	5.89 ± 0.27 ^{j-t}	4.42 ± 0.33 ^{a-m}	20.27 ± 0.56 ^{b-i}	4.81 ± 0.44 ^{a-m}	4.10 ± 0.16 ^{b-l}	3.64 ± 0.12 ^{b-o}	4.48 ± 0.15 ^{a-k}	57.82 ± 1.95 ^{b-g}
75	4295	11.77 ± 0.76 ^{j-n}	7.11 ± 0.22 st	5.26 ± 0.24 ^{j-n}	23.73 ± 1.53 ^{g-k}	5.41 ± 0.22 ^{h-m}	4.66 ± 0.14 ^{h-l}	4.10 ± 0.13 ^{i-p}	4.56 ± 0.31 ^{b-l}	66.59 ± 2.96 ^{f-i}
76	4300	10.32 ± 0.79 ^{a-m}	5.89 ± 0.41 ^{j-t}	4.45 ± 0.46 ^{a-n}	20.54 ± 1.66 ^{b-i}	4.56 ± 0.53 ^{a-k}	3.90 ± 0.46 ^{a-k}	3.18 ± 0.56 ^{a-j}	4.46 ± 0.68 ^{a-k}	57.30 ± 4.93 ^{b-g}
77	5249	11.06 ± 0.51 ^{f-n}	5.61 ± 0.24 ^{e-r}	4.88 ± 0.20 ^{d-n}	20.44 ± 0.94 ^{b-i}	5.25 ± 0.27 ^{g-m}	4.23 ± 0.25 ^{c-l}	3.80 ± 0.23 ^{e-p}	4.99 ± 0.33 ^{d-n}	60.28 ± 2.54 ^{c-l}
78	5285	11.37 ± 0.44 ^{g-n}	5.41 ± 0.22 ^{d-p}	5.13 ± 0.09 ^{g-n}	22.28 ± 0.41 ^{e-k}	5.25 ± 0.20 ^{f-m}	4.26 ± 0.17 ^{c-l}	3.83 ± 0.27 ^{e-p}	4.46 ± 0.17 ^{a-k}	61.99 ± 1.11 ^{c-l}
79	5286	11.05 ± 0.65 ^{f-n}	5.74 ± 0.36 ^{g-s}	4.77 ± 0.31 ^{c-n}	19.20 ± 2.08 ^{a-h}	5.05 ± 0.32 ^{d-m}	4.23 ± 0.28 ^{c-l}	3.92 ± 0.20 ^{f-p}	4.64 ± 0.18 ^{b-l}	58.61 ± 4.13 ^{b-h}
80	5287	11.53 ± 0.78 ⁱ⁻ⁿ	5.79 ± 0.22 ^{i-t}	5.03 ± 0.40 ^{e-n}	22.00 ± 1.38 ^{d-k}	5.25 ± 0.28 ^{f-m}	4.35 ± 0.15 ^{d-l}	3.72 ± 0.09 ^{c-p}	5.18 ± 0.27 ^{f-n}	62.84 ± 2.66 ^{d-l}
81	5288	11.13 ± 1.09 ^{f-n}	6.04 ± 0.48 ^{l-t}	4.88 ± 0.32 ^{d-n}	20.42 ± 2.30 ^{b-i}	4.95 ± 0.37 ^{c-m}	4.15 ± 0.26 ^{b-l}	3.69 ± 0.34 ^{b-o}	4.29 ± 0.33 ^{a-k}	59.54 ± 5.33 ^{b-h}
84	5291	11.59 ± 0.59 ^{j-n}	6.68 ± 0.35 ^{p-t}	5.17 ± 0.24 ^{b-n}	22.37 ± 1.10 ^{e-k}	5.16 ± 0.22 ^{e-m}	4.45 ± 0.34 ^{f-l}	3.89 ± 0.29 ^{e-p}	4.80 ± 0.24 ^{c-l}	64.11 ± 2.59 ^{e-i}
85	5292	11.57 ± 0.85 ⁱ⁻ⁿ	6.84 ± 0.43 ^{q-t}	5.00 ± 0.29 ^{d-n}	21.05 ± 2.90 ^{c-i}	5.15 ± 0.30 ^{e-m}	4.40 ± 0.19 ^{e-l}	4.13 ± 0.26 ^{i-p}	5.07 ± 0.13 ^{e-n}	63.23 ± 5.14 ^{d-i}
86	5295	9.97 ± 0.31 ^{a-k}	5.68 ± 0.13 ^{f-r}	4.14 ± 0.21 ^{a-j}	24.08 ± 1.62 ^{h-k}	4.87 ± 0.16 ^{b-m}	4.51 ± 0.17 ^{g-l}	4.04 ± 0.17 ^{h-p}	4.81 ± 0.08 ^{c-m}	62.10 ± 1.56 ^{c-i}
87	5296	8.31 ± 1.15 ^{a-e}	4.79 ± 0.70 ^{b-m}	3.63 ± 0.53 ^{a-c}	21.86 ± 1.51 ^{c-k}	3.99 ± 0.41 ^{a-d}	3.84 ± 0.35 ^{a-i}	3.60 ± 0.26 ^{b-n}	4.64 ± 0.46 ^{b-l}	54.66 ± 5.37 ^{a-f}
88	5297	9.24 ± 0.35 ^{a-j}	5.64 ± 0.16 ^{e-r}	4.13 ± 0.26 ^{a-j}	21.23 ± 0.80 ^{c-j}	4.67 ± 0.38 ^{a-l}	4.20 ± 0.27 ^{c-l}	3.84 ± 0.24 ^{e-p}	4.60 ± 0.33 ^{b-l}	57.56 ± 2.35 ^{b-g}
89	5298	9.22 ± 0.69 ^{a-j}	5.22 ± 0.39 ^{c-o}	3.88 ± 0.31 ^{a-f}	21.13 ± 2.34 ^{c-i}	4.61 ± 0.43 ^{a-l}	4.16 ± 0.31 ^{c-l}	3.72 ± 0.20 ^{c-p}	4.66 ± 0.27 ^{b-l}	56.61 ± 4.70 ^{a-g}
90	5300	9.70 ± 0.74 ^{a-k}	5.27 ± 0.29 ^{c-o}	4.11 ± 0.38 ^{a-j}	24.13 ± 0.47 ^{h-k}	4.80 ± 0.35 ^{a-m}	4.37 ± 0.21 ^{e-l}	4.05 ± 0.17 ^{h-p}	5.56 ± 0.31 ^{k-n}	62.00 ± 2.53 ^{c-i}
91	5302	8.69 ± 1.16 ^{a-g}	4.38 ± 0.50 ^{a-g}	4.00 ± 0.47 ^{a-i}	22.08 ± 0.87 ^{d-k}	4.47 ± 0.28 ^{a-j}	3.97 ± 0.31 ^{a-k}	3.34 ± 0.29 ^{a-k}	4.04 ± 0.47 ^{a-i}	54.96 ± 4.36 ^{a-f}
93	5363	9.73 ± 0.93 ^{a-k}	4.95 ± 0.46 ^{b-n}	4.22 ± 0.53 ^{a-l}	22.29 ± 1.53 ^{e-k}	4.85 ± 0.34 ^{b-m}	4.45 ± 0.23 ^{f-l}	3.96 ± 0.28 ^{g-p}	5.06 ± 0.43 ^{e-n}	59.51 ± 4.41 ^{b-h}
95	5366	9.01 ± 0.51 ^{a-i}	4.57 ± 0.23 ^{a-j}	3.98 ± 0.34 ^{a-i}	19.68 ± 1.87 ^{b-i}	4.44 ± 0.33 ^{a-j}	4.10 ± 0.31 ^{b-l}	3.72 ± 0.25 ^{c-p}	4.51 ± 0.28 ^{a-k}	54.00 ± 3.67 ^{a-f}
96	5367	9.97 ± 0.79 ^{a-k}	4.63 ± 0.44 ^{a-k}	3.97 ± 0.41 ^{a-h}	22.46 ± 1.85 ^{e-k}	4.01 ± 0.57 ^{a-e}	3.67 ± 0.42 ^{a-g}	3.48 ± 0.24 ^{a-n}	5.30 ± 0.49 ^{j-n}	57.49 ± 4.45 ^{b-h}
97	5368	8.15 ± 0.70 ^{a-d}	4.06 ± 0.30 ^{a-d}	3.55 ± 0.34 ^{ab}	19.45 ± 1.01 ^{b-i}	4.04 ± 0.15 ^{a-e}	3.71 ± 0.05 ^{a-h}	3.41 ± 0.07 ^{a-l}	5.10 ± 0.04 ^{e-n}	51.46 ± 2.65 ^{a-e}
98	5369	12.81 ± 1.22 ^{l-n}	6.86 ± 0.55 ^{r-t}	5.64 ± 0.47 ⁿ	26.52 ± 2.60 ^k	5.84 ± 0.62 ^m	4.79 ± 0.53 ^k	4.31 ± 0.57 ^{l-p}	5.24 ± 0.88 ^{h-n}	72.00 ± 7.21 ^{hi}
99	5370	12.19 ± 0.89 ^{k-n}	6.32 ± 0.34 ^{n-t}	5.40 ± 0.37 ^{l-n}	24.64 ± 1.95 ^{j-k}	5.59 ± 0.46 ^{j-m}	4.85 ± 0.17 ^{kl}	4.20 ± 0.14 ^{k-p}	6.21 ± 0.31 ⁿ	69.39 ± 4.20 ^{g-i}
100	5371	13.30 ± 0.63 ⁿ	6.56 ± 0.25 ^{o-t}	5.59 ± 0.04 ^{mn}	26.45 ± 0.32 ^{jk}	5.79 ± 0.38 ^{lm}	5.03 ± 0.19 ^l	4.67 ± 0.24 ^p	5.82 ± 0.11 ^{l-n}	73.21 ± 2.07 ⁱ
101	5376	12.71 ± 1.41 ^{lmn}	6.80 ± 0.86 ^{q-t}	5.48 ± 0.41 ^{mn}	26.52 ± 1.74 ^k	5.78 ± 0.63 ^{lm}	4.82 ± 0.53 ^{j-l}	4.41 ± 0.47 ^{n-p}	5.53 ± 0.43 ^{j-n}	72.05 ± 6.24 ^{hi}
102	5377	9.15 ± 1.24 ^{a-j}	5.10 ± 0.58 ^{b-n}	4.08 ± 0.41 ^{a-j}	20.45 ± 2.57 ^{b-i}	4.42 ± 0.43 ^{a-i}	4.08 ± 0.48 ^{b-l}	3.35 ± 0.50 ^{a-k}	3.90 ± 0.54 ^{a-f}	54.53 ± 6.37 ^{a-f}
103	5378	7.89 ± 0.21 ^{a-c}	4.65 ± 0.21 ^{b-k}	3.80 ± 0.29 ^{a-d}	20.80 ± 0.80 ^{c-i}	4.12 ± 0.05 ^{a-g}	3.36 ± 0.20 ^{a-c}	2.93 ± 0.09 ^{a-e}	4.63 ± 0.08 ^{b-l}	52.19 ± 0.66 ^{a-e}

Table S9. Cont.

#	Accessions	Asp	Ser	Gly	Glu	Ala	Pro	Tyr	Arg	Total
104	5379	12.96 ± 1.73 ^{mn}	5.79 ± 0.99 ^t	5.48 ± 0.64 ^{mn}	26.39 ± 2.33 ^{lk}	5.67 ± 0.72 ^{k-m}	4.81 ± 0.53 ^{j-l}	4.37 ± 0.54 ^{m-p}	6.11 ± 0.77 ^{mn}	71.59 ± 7.60 ^{hi}
107	Tarrestre	12.96 ± 1.66 ^{mn}	7.14 ± 0.87 ^t	5.53 ± 0.61 ^{mn}	23.30 ± 2.60 ^{l-k}	5.56 ± 0.69 ^{i-m}	4.85 ± 0.54 ^{kl}	4.57 ± 0.56 ^{op}	5.85 ± 0.59 ^{l-n}	69.76 ± 7.79 ^{g-i}
Average ± SD (CV%)		10.18 ± 1.24 (12.2)	5.43 ± 0.78 (14.5)	4.55 ± 0.53 (11.7)	20.44 ± 2.44 (11.9)	4.57 ± 0.52 (11.5)	3.95 ± 0.43 (10.9)	3.48 ± 0.45 (12.9)	4.48 ± 0.62 (13.9)	57.07 ± 6.05 (10.6)
Average, % of the total measured protein (n=72)		10.8	5.8	4.8	21.6	4.8	4.2	3.7	4.7	60.4

Table S10. Trypsin inhibitor activity (TIA), mg/g, measured in the different Portuguese common bean accessions cropped in Córdoba (n=72). Different letters indicate significant differences between accessions ($p < 0.05$).

#	Accessions	TIA
1	579	$8.53 \pm 0.40^{i-p}$
2	583	$10.20 \pm 1.45^{p-x}$
3	584	$7.22 \pm 0.00^{d-l}$
4	587	$7.35 \pm 0.19^{f-l}$
5	592	$5.95 \pm 0.18^{a-g}$
14	645	$8.02 \pm 0.24^{b-o}$
15	654	$5.50 \pm 0.14^{a-f}$
17	670	$9.64 \pm 0.28^{m-u}$
19	698	4.16 ± 0.34^a
20	706	$8.80 \pm 0.31^{k-q}$
22	737	$13.61 \pm 0.75^{B-E}$
23	1631	$11.87 \pm 0.12^{x-C}$
24	1636	$6.80 \pm 0.77^{c-j}$
25	1644	$9.41 \pm 0.27^{m-t}$
26	1653	14.82 ± 0.01^E
27	1654	$7.85 \pm 0.32^{g-m}$
29	1663	$9.31 \pm 0.46^{m-s}$
39	1955	$6.43 \pm 0.36^{b-h}$
40	1966	$10.82 \pm 0.62^{r-y}$
41	1975	$9.64 \pm 0.45^{m-u}$
42	1976	$7.27 \pm 0.23^{e-l}$
43	1984	4.74 ± 0.07^{ab}
47	2159	$5.33 \pm 0.34^{a-e}$
48	2179	$8.91 \pm 0.89^{l-r}$
50	4048	$7.00 \pm 0.44^{d-l}$
51	4049	$11.03 \pm 0.55^{s-z}$
52	4050	$6.58 \pm 0.45^{b-h}$
53	4051	$9.99 \pm 0.56^{p-x}$
54	4070	$8.73 \pm 0.30^{j-q}$
55	4071	$6.62 \pm 0.54^{b-i}$
56	4072	$7.04 \pm 0.10^{d-l}$
58	4081	$6.95 \pm 0.21^{d-l}$
59	4085	$6.66 \pm 0.08^{b-i}$
60	4088	$6.41 \pm 0.22^{b-h}$
61	4097	$9.71 \pm 0.27^{m-v}$
62	4100	$6.61 \pm 0.39^{b-i}$
63	4108	$10.37 \pm 0.75^{p-y}$
64	4119	4.78 ± 0.47^{ab}
65	4120	$5.54 \pm 0.16^{a-f}$
66	4127	$6.63 \pm 0.52^{b-i}$
67	4133	$9.54 \pm 0.63^{m-t}$
68	4150	$4.94 \pm 0.15^{a-c}$
70	4182	$5.68 \pm 0.35^{a-f}$
71	4185	$7.92 \pm 0.65^{h-n}$
72	4189	$11.65 \pm 0.79^{v-A}$
75	4295	$10.91 \pm 0.78^{s-y}$
76	4300	$12.23 \pm 1.35^{y-D}$
77	5249	$9.83 \pm 0.99^{n-w}$
78	5285	$11.50 \pm 0.58^{u-z}$
79	5286	$12.90 \pm 1.10^{z-E}$
80	5287	$6.85 \pm 0.32^{c-j}$
81	5288	$9.87 \pm 0.47^{o-w}$
84	5291	$11.82 \pm 0.43^{x-C}$
85	5292	$5.42 \pm 0.20^{a-f}$
86	5295	13.95 ± 0.61^{DE}
87	5296	$11.72 \pm 0.80^{w-B}$

Table S10. *Cont.*

#	Accessions	TIA
88	5297	$11.90 \pm 0.90^{\text{x-C}}$
89	5298	$11.29 \pm 0.97^{\text{t-z}}$
90	5300	$9.42 \pm 1.19^{\text{m-t}}$
91	5302	$11.59 \pm 1.45^{\text{v-A}}$
93	5363	$10.96 \pm 0.44^{\text{s-z}}$
95	5366	$10.14 \pm 0.55^{\text{p-x}}$
96	5367	$11.10 \pm 0.87^{\text{s-z}}$
97	5368	$11.67 \pm 0.35^{\text{w-B}}$
98	5369	$10.65 \pm 0.62^{\text{q-y}}$
99	5370	$6.34 \pm 0.64^{\text{b-h}}$
100	5371	$13.71 \pm 0.65^{\text{C-E}}$
101	5376	$13.52 \pm 0.42^{\text{A-E}}$
102	5377	$10.51 \pm 0.82^{\text{q-y}}$
103	5378	$6.38 \pm 0.31^{\text{b-h}}$
104	5379	$11.26 \pm 0.52^{\text{t-z}}$
107	Tarrestre	$5.32 \pm 0.45^{\text{a-d}}$
Average $\pm$ SD (CV%)		8.96 ± 2.66 (29.6)