

Table S1. Raw Seed Iron Concentrations of the Eighteen Genotypes in the Yellow Bean Panel Organized from Lightest to Darkest Seed Type.¹

Genotype (<i>Seed Type</i>)	Raw Seed Iron ($\mu\text{g/g}$)²	
	2015	2016
Blanco (<i>white</i>)	59 ^{gh}	71 ^{def}
PI527521 (<i>white</i>)	66 ^{cd}	73 ^{cde}
Ervilha (<i>Manteca</i>)	55 ^{hi}	65 ^{hij}
Cebo (<i>Manteca</i>)	60 ^{fg}	69 ^{efg}
Mantega (<i>Manteca</i>)	60 ^{fg}	62 ^j
CDC-Sol (<i>Mayocoba</i>)	58 ^{gh}	62 ^j
ACC Y012 (<i>Mayocoba</i>)	64 ^{def}	62 ^j
Y11405 (<i>Mayocoba</i>)	80 ^a	79 ^{ab}
DBY28-1 (<i>Mayocoba</i>)	54 ⁱ	63 ^{ij}
Canario (<i>Canary</i>)	68 ^{bc}	76 ^{bc}
Canario, Cela (<i>Canary</i>)	70 ^b	69 ^{fgh}
Uyole 04 (<i>lt. Amarillo</i>)	53 ⁱ	64 ^{ij}
Uyole 98 (<i>dk. Amarillo</i>)	61 ^{fg}	66 ^{ghi}
Amarelo (<i>dk. Amarillo</i>)	65 ^{cde}	73 ^{cd}
Chumbo (<i>Njano</i>)	62 ^f	65 ^{ij}
PI527538 (<i>Njano</i>)	56 ^{hi}	66 ^{ghi}
JB178 (<i>Red Mottled</i>)	79 ^a	81 ^a
PR0737-1 (<i>Red Mottled</i>)	79 ^a	80 ^a

¹Values are means of duplicate measurements from two field replicates per genotype (n = 4), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$.

²Total iron concentrations expressed as micrograms per gram of raw lyophilized/milled whole seed (dry weight).

Table S2. Iron Concentrations of Pre-Soaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹

Genotype (<i>Seed Type</i>)	Cooking Class	Iron ($\mu\text{g/g}$) ²	
		2015	2016
Blanco (<i>white</i>)	fast	57 ^{fg}	75 ^{bcd}
PI527521 (<i>white</i>)	fast	71 ^c	79 ^b
Ervilha (<i>Manteca</i>)	fast	58 ^{fg}	73 ^{cdef}
Cebo (<i>Manteca</i>)	fast	61 ^{ef}	72 ^{defg}
Mantega (<i>Manteca</i>)	fast	61 ^{fg}	69 ^{efg}
Uyole 04 (<i>lt. Amarillo</i>)	moderate	57 ^{fg}	67 ^{ghi}
Chumbo (<i>Njano</i>)	moderate	65 ^{de}	74 ^{bcd}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	60 ^{fg}	68 ^{gh}
JB178 (<i>Red Mottled</i>)	moderate	85 ^{ab}	90 ^a
ACC Y012 (<i>Mayocoba</i>)	moderate	60 ^{fg}	71 ^{defg}
Canario, Cela (<i>Canary</i>)	moderate	70 ^{cd}	74 ^{cde}
CDC-Sol (<i>Mayocoba</i>)	moderate	57 ^{fg}	63 ⁱ
DBY28-1 (<i>Mayocoba</i>)	moderate	51 ^h	64 ^{hi}
Y11405 (<i>Mayocoba</i>)	moderate	80 ^b	78 ^{bc}
Canario (<i>Canary</i>)	slow	70 ^{cd}	77 ^{bc}
PI527538 (<i>Njano</i>)	slow	55 ^{gh}	68 ^{gh}
PR0737-1 (<i>Red Mottled</i>)	slow	89 ^a	86 ^a
Amarelo (<i>dk. Amarillo</i>)	slow	65 ^{de}	76 ^{bcd}

¹Values are means of duplicate measurements from two field replicates per genotype (n= 4), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²Total iron concentration measured as micrograms per gram of cooked lyophilized/milled whole seed (dry weight).

Table S3. Iron Concentrations of Unsoaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹

Genotype (<i>Seed Type</i>)	Cooking Class	Iron ($\mu\text{g/g}$) ²	
		2015	2016
Blanco (<i>white</i>)	fast	60 ^{efg}	70 ^{bc}
PI527521 (<i>white</i>)	fast	69 ^{bc}	70 ^{bc}
Ervilha (<i>Manteca</i>)	fast	59 ^{fg}	67 ^{cdef}
Cebo (<i>Manteca</i>)	fast	56 ^{ghi}	65 ^{defg}
Mantega (<i>Manteca</i>)	fast	59 ^{fgh}	65 ^{defg}
Uyole 04 (<i>lt. Amarillo</i>)	moderate	54 ^{hi}	68 ^{bcde}
Chumbo (<i>Njano</i>)	moderate	65 ^{cde}	64 ^{efg}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	63 ^{def}	66 ^{cdef}
JB178 (<i>Red Mottled</i>)	moderate	82 ^a	82 ^a
Canario, Cela (<i>Canary</i>)	moderate	73 ^b	67 ^{cde}
Y11405 (<i>Mayocoba</i>)	moderate	81 ^a	79 ^a
DBY28-1 (<i>Mayocoba</i>)	moderate	53 ⁱ	62 ^{fgh}
PI527538 (<i>Njano</i>)	moderate	56 ^{ghi}	64 ^{efg}
Canario (<i>Canary</i>)	slow	68 ^{bc}	73 ^b
ACC Y012 (<i>Mayocoba</i>)	slow	62 ^{def}	61 ^{gh}
CDC-Sol (<i>Mayocoba</i>)	slow	59 ^{fgh}	59 ^h
PR0737-1 (<i>Red Mottled</i>)	slow	82 ^a	81 ^a
Amarelo (<i>dk. Amarillo</i>)	slow	66 ^{cd}	70 ^{bcd}

¹Values are means of duplicate measurements from two field replicates per genotype (n = 4), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²Total iron concentration measured as micrograms per gram of cooked lyophilized/milled whole seed (dry weight).

Table S4. Iron Contents and Retention Values of Pre-Soaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹

Genotype (<i>Seed Type</i>)	Cooking Class	Iron (mg/100 seed) ²			2016		
		2015	Raw	Cooked	Retention (%) ³	Raw	Cooked
Blanco (<i>white</i>)	fast	2.97 ^c	2.55 ^c	86 ^{abc}	3.88 ^a	3.27 ^a	84 ^{cdef}
PI527521 (<i>white</i>)	fast	2.61 ^{de}	2.20 ^{defg}	84 ^{bcd}	3.19 ^b	2.71 ^{bcd}	85 ^{cdef}
Ervilha (<i>Manteca</i>)	fast	2.69 ^d	2.34 ^{cde}	87 ^{abc}	3.36 ^b	2.92 ^b	87 ^{abc}
Cebo (<i>Manteca</i>)	fast	2.13 ^h	1.82 ^h	85 ^{abc}	2.23 ^g	1.98 ^{ij}	89 ^{abc}
Mantega (<i>Manteca</i>)	fast	2.58 ^{de}	2.15 ^{efg}	83 ^{bcde}	2.67 ^{def}	2.43 ^{efg}	91 ^a
Uyole 04 (<i>lt. Amarillo</i>)	moderate	2.29 ^{fgh}	2.00 ^{fgh}	87 ^{ab}	2.76 ^{cde}	2.39 ^{efg}	86 ^{abcd}
Chumbo (<i>Njano</i>)	moderate	2.37 ^{fg}	1.98 ^{fgh}	84 ^{bcd}	2.88 ^{cd}	2.52 ^{cdef}	87 ^{abc}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	2.47 ^{ef}	2.01 ^{fgh}	81 ^{def}	2.76 ^{cde}	2.28 ^{fgh}	83 ^{defg}
JB178 (<i>Red Mottled</i>)	moderate	3.77 ^b	3.31 ^a	88 ^a	3.67 ^a	3.31 ^a	90 ^{ab}
ACC Y012 (<i>Mayocoba</i>)	moderate	2.74 ^d	2.24 ^{def}	82 ^{def}	2.92 ^c	2.49 ^{def}	85 ^{bcde}
Canario, Cela (<i>Canary</i>)	moderate	3.08 ^c	2.51 ^c	82 ^{cdef}	2.90 ^{cd}	2.44 ^{efg}	84 ^{cdef}
CDC-Sol (<i>Mayocoba</i>)	moderate	2.97 ^c	2.44 ^{cd}	82 ^{cdef}	2.78 ^{cde}	2.29 ^{fgh}	82 ^{defg}
DBY28-1 (<i>Mayocoba</i>)	moderate	2.20 ^{gh}	1.78 ^h	81 ^{defg}	2.47 ^{fg}	2.01 ^{ij}	81 ^{efg}
Y11405 (<i>Mayocoba</i>)	moderate	4.12 ^a	3.31 ^a	80 ^{efg}	3.25 ^b	2.64 ^{cde}	81 ^{efg}
Canario (<i>Canary</i>)	slow	2.69 ^d	2.13 ^{efg}	79 ^{fg}	2.56 ^{ef}	2.08 ^{hi}	81 ^{efg}
PI527538 (<i>Njano</i>)	slow	2.48 ^{ef}	1.97 ^{gh}	79 ^{fg}	2.76 ^{cde}	2.22 ^{ghi}	80 ^{fg}
PR0737-1 (<i>Red Mottled</i>)	slow	3.65 ^b	3.03 ^b	83 ^{cde}	3.26 ^b	2.76 ^{bc}	85 ^{cdef}
Amarelo (<i>dk. Amarillo</i>)	slow	1.84 ⁱ	1.41 ⁱ	77 ^g	2.23 ^g	1.75 ^j	79 ^g

¹Values are means of duplicate measurements from two field replicates per genotype (n = 4), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²Iron seed content calculated as the total milligrams in 100 intact lyophilized raw or cooked whole seed (dry weight). ³Retention values calculated by comparing content differences between 100 lyophilized raw and cooked whole seed.

Table S5. Iron Contents and Retention Values of **Unsoaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹**

Genotype (<i>Seed Type</i>)	Cooking Class	Iron (mg/100 seed)²					
		2015			2016		
		Raw	Cooked	Retention (%) ³	Raw	Cooked	Retention (%)
Blanco (<i>white</i>)	fast	3.33 ^{bc}	2.72 ^{bc}	82 ^{abc}	3.64 ^a	2.91 ^a	80 ^{abc}
PI527521 (<i>white</i>)	fast	2.87 ^{fgh}	2.31 ^{def}	81 ^{abc}	3.02 ^{cd}	2.55 ^{bc}	80 ^{abc}
Ervilha (<i>Manteca</i>)	fast	3.06 ^{def}	2.59 ^{bc}	84 ^{ab}	3.19 ^{bc}	2.64 ^{bc}	83 ^{ab}
Cebo (<i>Manteca</i>)	fast	2.27 ^k	1.82 ^h	80 ^{abc}	2.65 ^{fghi}	2.13 ^{ef}	80 ^{abc}
Mantega (<i>Manteca</i>)	fast	2.60 ^{ij}	2.14 ^{fg}	82 ^{abc}	2.59 ^{hi}	2.19 ^{de}	84 ^a
Uyole 04 (<i>lt. Amarillo</i>)	moderate	2.45 ^{jk}	1.99 ^{gh}	81 ^{abc}	2.63 ^{ghi}	2.21 ^{de}	84 ^a
Chumbo (<i>Njano</i>)	moderate	2.45 ^{jk}	2.00 ^{gh}	82 ^{abc}	2.43 ⁱ	1.97 ^f	81 ^{abc}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	2.70 ^{hi}	2.16 ^{fg}	80 ^{bcd}	2.85 ^{defg}	2.25 ^{de}	79 ^{bcd}
JB178 (<i>Red Mottled</i>)	moderate	3.25 ^{bcd}	2.77 ^b	85 ^a	3.33 ^b	2.73 ^{ab}	82 ^{abc}
Canario, Cela (<i>Canary</i>)	moderate	3.42 ^b	2.69 ^{bc}	79 ^{cd}	2.88 ^{def}	2.22 ^{de}	77 ^{def}
Y11405 (<i>Mayocoba</i>)	moderate	4.12 ^a	3.18 ^a	77 ^{cd}	3.40 ^{ab}	2.67 ^{ab}	78 ^{cde}
DBY28-1 (<i>Mayocoba</i>)	moderate	2.26 ^k	1.76 ^h	78 ^{cd}	2.64 ^{fghi}	2.04 ^{ef}	77 ^{def}
PI527538 (<i>Njano</i>)	moderate	2.85 ^{gh}	2.20 ^{fg}	77 ^{cd}	2.78 ^{efgh}	2.06 ^{ef}	74 ^{ef}
Canario (<i>Canary</i>)	slow	2.94 ^{efg}	2.22 ^{efg}	75 ^{de}	2.94 ^{de}	2.15 ^{de}	73 ^{ef}
ACC Y012 (<i>Mayocoba</i>)	slow	2.79 ^{ghi}	2.19 ^{fg}	78 ^{cd}	2.62 ^{ghi}	2.09 ^{ef}	80 ^{abc}
CDC-Sol (<i>Mayocoba</i>)	slow	3.11 ^{de}	2.47 ^{cde}	79 ^{bcd}	2.73 ^{efgh}	2.13 ^{ef}	79 ^{bcd}
PR0737-1 (<i>Red Mottled</i>)	slow	3.21 ^{cd}	2.50 ^{cd}	76 ^{cd}	3.29 ^b	2.55 ^{bc}	77 ^{cde}
Amarelo (<i>dk. Amarillo</i>)	slow	1.80 ^l	1.29 ⁱ	71 ^e	2.16 ^j	1.56 ^g	72 ^f

¹Values are means of duplicate measurements from two field replicates per genotype (n = 4), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²Iron seed content calculated as the total milligrams in 100 intact lyophilized raw or cooked whole seed (dry weight). ³Retention values calculated by comparing content differences between 100 lyophilized raw and cooked whole seed.

Table S6. Iron Bioavailability Scores of Pre-Soaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹

Genotype (<i>Seed Type</i>)	Cooking Class	Iron Bioavailability (% control) ²	
		2015	2016
Blanco (<i>white</i>)	fast	101 ^{ab}	97 ^{bc}
PI527521 (<i>white</i>)	fast	107 ^a	100 ^{bc}
Ervilha (<i>Manteca</i>)	fast	100 ^{ab}	105 ^b
Cebo (<i>Manteca</i>)	fast	101 ^{ab}	136 ^a
Mantega (<i>Manteca</i>)	fast	107 ^a	104 ^{bc}
Uyole 04 (<i>lt. Amarillo</i>)	moderate	74 ^{cd}	87 ^{bcd}
Chumbo (<i>Njano</i>)	moderate	63 ^{de}	58 ^{efg}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	61 ^{def}	50 ^{fg}
JB178 (<i>Red Mottled</i>)	moderate	43 ^{fg}	45 ^{fgh}
ACC Y012 (<i>Mayocoba</i>)	moderate	66 ^{de}	60 ^{ef}
Canario, Cela (<i>Canary</i>)	moderate	60 ^{def}	43 ^{fgh}
CDC-Sol (<i>Mayocoba</i>)	moderate	57 ^{def}	47 ^{fgh}
DBY28-1 (<i>Mayocoba</i>)	moderate	67 ^{cde}	71 ^{de}
Y11405 (<i>Mayocoba</i>)	moderate	84 ^{bc}	86 ^{cd}
Canario (<i>Canary</i>)	slow	55 ^{ef}	41 ^{gh}
PI527538 (<i>Njano</i>)	slow	34 ^{gh}	44 ^{fgh}
PR0737-1 (<i>Red Mottled</i>)	slow	34 ^{gh}	29 ^{hi}
Amarelo (<i>dk. Amarillo</i>)	slow	19 ^h	22 ⁱ

¹Values are means of triplicate measurements from two field replicates per genotype (n = 6), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²*In vitro* iron bioavailability is expressed as a percentage score of Caco-2 cell ferritin formation (ng ferritin / mg total cell protein) that is relative to a white navy bean (cv. Merlin) control, following *in vitro* digestion of lyophilized cooked whole seed.

Table S7. Iron Bioavailability Scores of **Unsoaked and Cooked Genotypes in the Yellow Bean Panel Organized by Cooking Class.¹**

Genotype (<i>Seed Type</i>)	Cooking Class	Iron Bioavailability (% control)²	
		2015	2016
Blanco (<i>white</i>)	fast	103 ^{cd}	97 ^{bcd}
PI527521 (<i>white</i>)	fast	125 ^b	104 ^b
Ervilha (<i>Manteca</i>)	fast	124 ^b	125 ^a
Cebo (<i>Manteca</i>)	fast	109 ^{bc}	111 ^{ab}
Mantega (<i>Manteca</i>)	fast	159 ^a	100 ^{bc}
Uyole 04 (<i>lt. Amarillo</i>)	moderate	86 ^{de}	79 ^{def}
Chumbo (<i>Njano</i>)	moderate	64 ^{fg}	69 ^{efg}
Uyole 98 (<i>dk. Amarillo</i>)	moderate	63 ^{fg}	50 ^{hi}
JB178 (<i>Red Mottled</i>)	moderate	33 ^h	50 ^{hi}
Canario, Cela (<i>Canary</i>)	moderate	66 ^{fg}	50 ^{hi}
Y11405 (<i>Mayocoba</i>)	moderate	80 ^{ef}	76 ^{ef}
DBY28-1 (<i>Mayocoba</i>)	moderate	87 ^{de}	84 ^{cde}
PI527538 (<i>Njano</i>)	moderate	34 ^h	62 ^{fgh}
Canario (<i>Canary</i>)	slow	55 ^g	51 ^{ghi}
ACC Y012 (<i>Mayocoba</i>)	slow	79 ^{ef}	47 ^{hi}
CDC-Sol (<i>Mayocoba</i>)	slow	69 ^f	57 ^{ghi}
PR0737-1 (<i>Red Mottled</i>)	slow	24 ^h	41 ^{ij}
Amarelo (<i>dk. Amarillo</i>)	slow	20 ^h	24 ^j

¹Values are means of triplicate measurement from two field replicates per genotype (n = 6), measured for field seasons 2015 and 2016. Means sharing the same letter in each column are not significantly different at $P \leq 0.05$. Genotypes are categorized top to bottom from the fastest to slowest cooking entry. ²*In vitro* iron bioavailability is expressed as a percentage score of Caco-2 cell ferritin formation (ng ferritin / mg total cell protein) that is relative to a white navy bean (cv. Merlin) control, following *in vitro* digestion of lyophilized cooked whole seed.