

PULSE FLOURS:

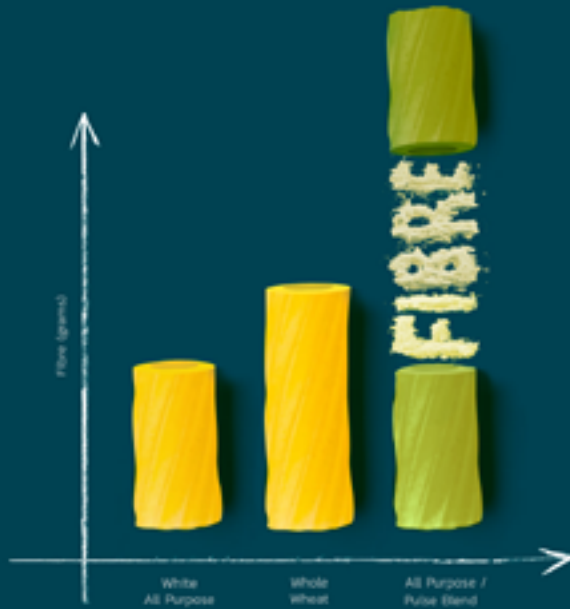
# Nutritional Powerhouses

Flours from peas, lentils and beans are increasingly being leveraged as an excellent source of sustainable plant protein, but they're also an important source of other nutrients. Incorporating pulse ingredients like pea or lentil flour into food products can improve the nutritional profile of the product and may even help it qualify for label claims.



## High Levels of Plant Protein

Typically, pulses contain twice the amount of protein found in whole grains like wheat, oats, barley and rice. Pulses have higher amounts of the essential amino acid lysine, a limiting amino acid in cereals. Blending pulses with cereals or nuts results in a better quality protein that may qualify for a source of protein claim.



## High in Fibre

Pulses are very high in fibre, and contain both soluble and insoluble fibre. Diets that are high in fibre can help with weight management. Dietary fibre aids in satiety and supports digestive health by promoting regularity.

## Micronutrient Rich

Pulses provide substantial amounts of vitamins and minerals including iron, potassium, magnesium zinc, and folate. Diets that incorporate pulses have demonstrated higher intakes of protein, fibre, folate zinc, calcium, potassium, iron, and magnesium, and decreased consumption of saturated fat.<sup>1,2</sup>

## Whole Pulse Flours

To produce a whole pulse flour, the entire seed is milled as part of a continuous process or the outer seed coat (hull) can be collected during dehulling, separately ground, then recombined with the flour at naturally occurring levels after milling.

*\*See separate word doc for 2 tables for whole pulse flours\**

## Dehulled Pulse Flours

To produce dehulled flours, the outer seed coat (or hull) is first removed and the remaining seed is then milled into flour.

*\*See separate word doc for 2 tables for dehulled pulse flours\**

## REFERENCES

1. Mitchell D. et al. 2009. Consumption of dry beans, peas and lentils could improve diet quality in the US population. Am Diet Assoc. 109(5): 909-913. Doi: <https://doi.org/10.1016/j.jada...>
2. Mudryk, A. et al. 2012. Pulse consumption in Canadian adults influences nutrient intakes. Nutr. 108:Suppl. 1:527-36. Doi: <https://doi.org/10.1017/S000714512000724>.

**Ready to get pulse flours working for you? Our team is ready to help.**

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Table 1A. Nutritional composition of whole pulse flours.

Parameter (db)	Units per 100g	Yellow Pea	Green Pea	Red Lentil	Green Lentil	Kabuli Chickpea	Desi Chickpea
<b>Protein</b>	g	20.8 – 26.0 <sup>abdefg</sup>	20.4 – 25.3 <sup>af</sup>	26.3 – 28.9 <sup>abf</sup>	26.3 – 28.3 <sup>ab</sup>	16.7 – 23.3 <sup>adf</sup>	22.3 – 25.2 <sup>abf</sup>
<b>Fat</b>	g	1.20 – 1.76 <sup>adf</sup>	1.30 – 1.55 <sup>af</sup>	1.3 – 1.4 <sup>af</sup>	1.29 – 1.50 <sup>a</sup>	6.55 – 7.20 <sup>adf</sup>	5.47 <sup>af</sup>
Saturated Fat	g	0.39 <sup>a</sup>	0.35 <sup>a</sup>	0.34 – 0.36 <sup>a</sup>	0.33 – 0.38 <sup>a</sup>	0.96 <sup>a</sup>	0.81 <sup>a</sup>
Trans Fat	g	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>
Monosaturated Fat	g	0.4 <sup>a</sup>	0.36 <sup>a</sup>	0.31 <sup>a</sup>	0.28 – 0.40 <sup>a</sup>	2.00 <sup>a</sup>	1.34 <sup>a</sup>
Polyunsaturated Fat	g	0.88 <sup>a</sup>	0.75 <sup>a</sup>	0.63 – 0.68 <sup>a</sup>	0.62 – 0.75 <sup>a</sup>	3.27 <sup>a</sup>	3.03 <sup>a</sup>
Omega-6 Fattyacids	g	0.74 <sup>a</sup>	0.61 <sup>a</sup>	0.51 – 0.54 <sup>a</sup>	0.48 – 0.59 <sup>a</sup>	3.12 <sup>a</sup>	2.87 <sup>a</sup>
Omega-3 Fattyacids	g	0.15 <sup>a</sup>	0.14 <sup>a</sup>	0.13 – 0.14 <sup>a</sup>	0.12 – 0.17 <sup>a</sup>	0.15 <sup>a</sup>	0.16 <sup>a</sup>
Conjugated Linoleic Acid	g	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>
<b>Carbohydrates</b>	g	75.4 <sup>a</sup>	75.6 <sup>a</sup>	68.7 – 68.8 <sup>a</sup>	68.0 – 69.8 <sup>a</sup>	68.8 <sup>a</sup>	70.7 <sup>a</sup>
Total Starch	g	42.8 – 49.6 <sup>bdefg</sup>	45.3 <sup>f</sup>	38.5 – 46.5 <sup>b<sup>fh</sup></sup>	42.8 – 44.7 <sup>h</sup>	44.5 – 47.4 <sup>df</sup>	40.4 <sup>f</sup>
Total Sugars	g	2.45 <sup>a</sup>	3.21 <sup>a</sup>	–	1.54 – 1.66 <sup>a</sup>	3.03 <sup>a</sup>	1.82 <sup>a</sup>
Total Dietary Fibre	g	14.3 – 26.4 <sup>abedg</sup>	28.3 – 28.7 <sup>a</sup>	12.1 – 29.2 <sup>ab</sup>	17.2 – 24.4 <sup>a</sup>	12.0 – 16.8 <sup>ad</sup>	21.1 – 22.1 <sup>a</sup>
Soluble Dietary Fibre	g	1.2 – 5.6 <sup>abe</sup>	5.9 <sup>a</sup>	1.5 – 7.5 <sup>ab</sup>	0.2 – 7.8 <sup>a</sup>	0.1 – 4.4 <sup>a</sup>	16.2 <sup>a</sup>
Insoluble Dietary Fibre	g	14.1 – 20.9 <sup>abe</sup>	22.4 <sup>a</sup>	10.7 – 21.8 <sup>ab</sup>	14.1 – 19.3 <sup>a</sup>	12.4 – 12.5 <sup>a</sup>	4.9 <sup>a</sup>
<b>Ash</b>	g	2.00 – 3.50 <sup>abcdfg</sup>	2.5 – 3.5 <sup>af</sup>	1.94 – 5.40 <sup>abf</sup>	2.21 – 2.84 <sup>ab</sup>	1.27 – 3.20 <sup>adf</sup>	1.56 – 3.50 <sup>abf</sup>
Sodium	mg	9.4 <sup>a</sup>	10.3 <sup>a</sup>	11.2 – 11.5 <sup>a</sup>	3.4 – 12.1 <sup>a</sup>	7.4 <sup>a</sup>	4.93 <sup>a</sup>
Potassium	mg	1072 <sup>a</sup>	1116 <sup>a</sup>	953 – 1086 <sup>a</sup>	905 – 969 <sup>a</sup>	1201 <sup>a</sup>	1179 <sup>a</sup>
Calcium	mg	70.3 <sup>a</sup>	69 <sup>a</sup>	66 – 75 <sup>a</sup>	74 – 80 <sup>a</sup>	117 <sup>a</sup>	123 <sup>a</sup>
Iron	mg	4.2 <sup>a</sup>	3.9 <sup>a</sup>	5.7 – 7.7 <sup>a</sup>	6.6 – 10.1 <sup>a</sup>	5.8 <sup>a</sup>	5.5 <sup>a</sup>
Phosphorus	mg	316 <sup>a</sup>	326 <sup>a</sup>	317 – 410 <sup>a</sup>	299 – 351 <sup>a</sup>	345 <sup>a</sup>	315 <sup>a</sup>
Magnesium	mg	134 <sup>a</sup>	128 <sup>a</sup>	103 <sup>a</sup>	104 – 112 <sup>a</sup>	170 <sup>a</sup>	165 <sup>a</sup>
Zinc	mg	2.63 <sup>a</sup>	2.6 <sup>a</sup>	2.3 <sup>a</sup>	3.0 – 3.3 <sup>a</sup>	2.6 <sup>a</sup>	2.5 <sup>a</sup>
Selenium	ppm (w/w)	0.45 <sup>a</sup>	0.44 <sup>a</sup>	0.66 – 0.99 <sup>a</sup>	0.77 – 1.21 <sup>a</sup>	2.06 <sup>a</sup>	1.7 <sup>a</sup>
Folic Acid	mcg	48 <sup>a</sup>	153 <sup>a</sup>	107 – 134 <sup>a</sup>	112 – 164 <sup>a</sup>	255 <sup>a</sup>	269 <sup>a</sup>
Vitamin A	RE	< 20 <sup>a</sup>	33 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>
Vitamin C	mg	5.5 <sup>a</sup>	5.3 <sup>a</sup>	6.3 – 6.6 <sup>a</sup>	5.6 – 9.8 <sup>a</sup>	9.0 <sup>a</sup>	8.1 <sup>a</sup>

Db = dry weight basis

<sup>a</sup>Analyses conducted by Mérieux NutriSciences, 2015. Fibre analysis by AOAC 991.43 and AOAC 2011.25.<sup>b</sup>Analyses conducted by Canadian International Grains Institute, 2014. Fibre analysis by AOAC 991.43.<sup>c</sup>Analyses conducted by Improve Institute, 2019.<sup>d</sup>Data adapted from Sopiwynek et al. (2020) *LWT – Food Science and Technology*. 121: 108971. Fibre analysis by AACC 32-05.01.<sup>e</sup>Data adapted from Maskus et al. (2016). *Cereal Foods World*. 61(2): 59-64. Fibre analysis by AOAC 991.43.<sup>f</sup>Data adapted from Stone et al. (2019) *Cereal Chemistry*. 96: 1159-1169.<sup>g</sup>Data adapted from Ma, Boye and Hu (2017) *Food Research International*. 92: 64-78. Fibre analysis by AOAC 985.29.<sup>h</sup>Data adapted from Lu et al. (2018) *International Journal of Food Science and Technology*. 53:735-746.

Table 1B. Nutritional composition of whole pulse flours.

Parameter (db)	Units per 100g	Navy Bean	Pinto Bean	Faba Bean	Black Bean	Yellow Bean	Red Bean	Kidney Bean
<b>Protein</b>	g	22.8 – 25.4 <sup>abd</sup>	21.3 – 24.5 <sup>ab</sup>	28.0 – 33.2 <sup>af</sup>	23.2 <sup>a</sup>	20.4 <sup>a</sup>	23.1 <sup>a</sup>	23.2 <sup>a</sup>
<b>Fat</b>	g	1.94 – 2.01 <sup>ad</sup>	1.81 <sup>a</sup>	1.50 – 1.78 <sup>af</sup>	2.00 <sup>a</sup>	1.83 <sup>a</sup>	1.64 <sup>a</sup>	1.78 <sup>a</sup>
Saturated Fat	g	0.55 <sup>a</sup>	0.48 <sup>a</sup>	0.42 <sup>a</sup>	0.58 <sup>a</sup>	0.48 <sup>a</sup>	0.45 <sup>a</sup>	0.49 <sup>a</sup>
Trans Fat	g	0.02 <sup>a</sup>	0.007 <sup>a</sup>	0.01 <sup>a</sup>	0.02 <sup>a</sup>	0.02 <sup>a</sup>	0.01 <sup>a</sup>	0.02 <sup>a</sup>
Monosaturated Fat	g	0.24 <sup>a</sup>	0.13 <sup>a</sup>	0.43 <sup>a</sup>	0.16 <sup>a</sup>	0.16 <sup>a</sup>	0.15 <sup>a</sup>	0.22 <sup>a</sup>
Polyunsaturated Fat	g	1.09 <sup>a</sup>	1.10 <sup>a</sup>	0.83 <sup>a</sup>	1.15 <sup>a</sup>	1.05 <sup>a</sup>	0.94 <sup>a</sup>	0.96 <sup>a</sup>
Omega-6 Fattyacids	g	0.56 <sup>a</sup>	0.46 <sup>a</sup>	0.78 <sup>a</sup>	0.65 <sup>a</sup>	0.50 <sup>a</sup>	0.38 <sup>a</sup>	0.41 <sup>a</sup>
Omega-3 Fattyacids	g	0.53 <sup>a</sup>	0.64 <sup>a</sup>	0.05 <sup>a</sup>	0.50 <sup>a</sup>	0.55 <sup>a</sup>	0.56 <sup>a</sup>	0.55 <sup>a</sup>
Conjugated Linoleic Acid	g	0.01 <sup>a</sup>	0.003 <sup>a</sup>	0.008 <sup>a</sup>	0.005 <sup>a</sup>	0.005 <sup>a</sup>	0.004 <sup>a</sup>	0.004 <sup>a</sup>
<b>Carbohydrates</b>	g	70.7 <sup>a</sup>	72.8 <sup>a</sup>	66.7 <sup>a</sup>	70.1 <sup>a</sup>	73.5 <sup>a</sup>	71.0 <sup>a</sup>	71.0 <sup>a</sup>
Total Starch	g	35.8 <sup>d</sup>	-	38.1 <sup>f</sup>	-	-	-	-
Total Sugars	g	2.5 <sup>a</sup>	2.81 <sup>a</sup>	2.09 <sup>a</sup>	3.45 <sup>a</sup>	3.72 <sup>a</sup>	2.98 <sup>a</sup>	3.92 <sup>a</sup>
Total Dietary Fibre	g	19.9 <sup>a</sup>	22.9 <sup>a</sup>	20.0 – 21.4 <sup>af</sup>	23.3 <sup>a</sup>	21.0 <sup>a</sup>	25.0 <sup>a</sup>	23.6 <sup>a</sup>
Soluble Dietary Fibre	g	-	-	-	-	-	-	-
Insoluble Dietary Fibre	g	-	-	-	-	-	-	-
<b>Ash</b>	g	4.13 – 4.66 <sup>abd</sup>	3.93 – 4.38 <sup>ab</sup>	3.5 – 3.7 <sup>af</sup>	4.68 <sup>a</sup>	4.34 <sup>a</sup>	4.31 <sup>a</sup>	3.98 <sup>a</sup>
Sodium	mg	5.2 <sup>a</sup>	5.9 <sup>a</sup>	18.6 <sup>a</sup>	5.29 <sup>a</sup>	7.2 <sup>a</sup>	7.2 <sup>a</sup>	3.7 <sup>a</sup>
Potassium	mg	1591 <sup>a</sup>	1851 <sup>a</sup>	1252 <sup>a</sup>	1867 <sup>a</sup>	1840 <sup>a</sup>	1840 <sup>a</sup>	1658 <sup>a</sup>
Calcium	mg	151 <sup>a</sup>	129 <sup>a</sup>	106 <sup>a</sup>	121 <sup>a</sup>	120 <sup>a</sup>	120 <sup>a</sup>	111 <sup>a</sup>
Iron	mg	7.5 <sup>a</sup>	7.3 <sup>a</sup>	5.9 <sup>a</sup>	6.8 <sup>a</sup>	6.8 <sup>a</sup>	6.5 <sup>a</sup>	7.4 <sup>a</sup>
Phosphorus	mg	483 <sup>a</sup>	439 <sup>a</sup>	423 <sup>a</sup>	530 <sup>a</sup>	530 <sup>a</sup>	445 <sup>a</sup>	500 <sup>a</sup>
Magnesium	mg	191 <sup>a</sup>	183 <sup>a</sup>	148 <sup>a</sup>	187 <sup>a</sup>	187 <sup>a</sup>	187 <sup>a</sup>	158 <sup>a</sup>
Zinc	mg	3.2 <sup>a</sup>	3.0 <sup>a</sup>	5.2 <sup>a</sup>	3.1 <sup>a</sup>	3.1 <sup>a</sup>	3.1 <sup>a</sup>	3.5 <sup>a</sup>
Selenium	ppm (w/w)	0.02 <sup>a</sup>	< 0.01 <sup>a</sup>	0.02 <sup>a</sup>	0.01 <sup>a</sup>	0.01 <sup>a</sup>	0.01 <sup>a</sup>	< 0.01 <sup>a</sup>
Folic Acid	mcg	86 <sup>a</sup>	117 <sup>a</sup>	92 <sup>a</sup>	165 <sup>a</sup>	165 <sup>a</sup>	117 <sup>a</sup>	128 <sup>a</sup>
Vitamin A	RE	< 20 <sup>a</sup>	< 20 <sup>a</sup>	7.7 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>
Vitamin C	mg	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>	< 1.0 <sup>a</sup>

Db = dry weight basis

<sup>a</sup>Analyses conducted by Mérieux NutriSciences, 2015. Fibre analysis by AOAC 991.43 and AOAC 2011.25.<sup>b</sup>Analyses conducted by Canadian International Grains Institute, 2014. Fibre analysis by AOAC 991.43.<sup>c</sup>Analyses conducted by Improve Institute, 2019.<sup>d</sup>Data adapted from Sopiwynek et al. (2020) *LWT – Food Science, and Technology*. 121: 108971. Fibre analysis by AACC 32-05.01.<sup>e</sup>Data adapted from Maskus et al. (2016). *Cereal Foods World*. 61(2): 59-64. Fibre analysis by AOAC 991.43.<sup>f</sup>Data adapted from Stone et al. (2019) *Cereal Chemistry*. 96: 1159-1169.<sup>g</sup>Data adapted from Ma, Boye and Hu (2017) *Food Research International*. 92: 64-78. Fibre analysis by AOAC 985.29.<sup>h</sup>Data adapted from Lu et al. (2018) *International Journal of Food Science and Technology*. 53:735-746.

Table 2. Nutritional composition of dehulled pulse flours.

Parameter (db)	Units per 100g	Yellow Pea	Green Pea	Red Lentil	Green Lentil	Desi Chickpea	Navy Bean	Pinto Bean
<b>Protein</b>	g	21.1 – 27.9 <sup>abcdg</sup>	21.7 <sup>a</sup>	25.5 – 30.0 <sup>abd</sup>	25.0 – 30.0 <sup>abc</sup>	24.6 – 28.6 <sup>b</sup>	27.4 <sup>b</sup>	26.0 <sup>b</sup>
<b>Fat</b>	g	1.32 – 1.80 <sup>ad</sup>	1.73 <sup>a</sup>	0.9 – 1.3 <sup>ad</sup>	1.53 <sup>a</sup>	-	-	-
Saturated Fat	g	0.4 <sup>a</sup>	0.37 <sup>a</sup>	0.34 <sup>a</sup>	0.34 <sup>a</sup>	-	-	-
Trans Fat	g	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	-	-	-
Monosaturated Fat	g	0.39 <sup>a</sup>	0.42 <sup>a</sup>	0.26 <sup>a</sup>	0.39 <sup>a</sup>	-	-	-
Polyunsaturated Fat	g	0.92 <sup>a</sup>	0.85 <sup>a</sup>	0.59 <sup>a</sup>	0.73 <sup>a</sup>	-	-	-
Omega-6 Fattyacids	g	0.74 <sup>a</sup>	0.70 <sup>a</sup>	0.47 <sup>a</sup>	0.58 <sup>a</sup>	-	-	-
Omega-3 Fattyacids	g	0.17 <sup>a</sup>	0.15 <sup>a</sup>	0.12 <sup>a</sup>	0.14 <sup>a</sup>	-	-	-
Conjugated Linoleic Acid	g	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	< 0.01 <sup>a</sup>	-	-	-
<b>Carbohydrates</b>	g	73.5 <sup>a</sup>	73.9 <sup>a</sup>	66.1 <sup>a</sup>	66.3 <sup>a</sup>	-	-	-
Total Starch	g	46.5 – 60.9 <sup>bcdfg</sup>	-	44.8 – 58.7 <sup>bd</sup>	52 – 55 <sup>bc</sup>	-	-	-
Total Sugars	g	2.89 <sup>a</sup>	3.54 <sup>a</sup>	-	1.54 <sup>a</sup>	-	-	-
Total Dietary Fibre	g	6.1 – 15.2 <sup>abe</sup>	14.2 – 17.8 <sup>a</sup>	4.8 – 22.5 <sup>ab</sup>	10.7 – 18.4 <sup>a</sup>	-	-	-
Soluble Dietary Fibre	g	0.4 – 4.9 <sup>abe</sup>	6.3 <sup>a</sup>	0.4 – 7.1 <sup>ab</sup>	7.8 <sup>a</sup>	-	-	-
Insoluble Dietary Fibre	g	5.0 – 13.3 <sup>abe</sup>	11.5 <sup>a</sup>	4.4 – 15.4 <sup>ab</sup>	10.6 <sup>a</sup>	-	-	-
<b>Ash</b>	g	2.15 – 2.91 <sup>abdg</sup>	2.6 <sup>a</sup>	2.55 – 2.66 <sup>abd</sup>	2.08 – 2.86 <sup>abc</sup>	3.13 – 3.35 <sup>b</sup>	4.24 <sup>b</sup>	4.12 <sup>b</sup>
Sodium	mg	8.2 <sup>a</sup>	16.9 <sup>a</sup>	6.3 <sup>a</sup>	8.69 <sup>a</sup>	-	-	-
Potassium	mg	1199 <sup>a</sup>	1084 <sup>a</sup>	1109 <sup>a</sup>	1026 <sup>a</sup>	-	-	-
Calcium	mg	37.2 <sup>a</sup>	40 <sup>a</sup>	28 <sup>a</sup>	34 <sup>a</sup>	-	-	-
Iron	mg	4.4 <sup>a</sup>	3.7 <sup>a</sup>	6.8 <sup>a</sup>	6.2 <sup>a</sup>	-	-	-
Phosphorus	mg	366 <sup>a</sup>	341 <sup>a</sup>	412 <sup>a</sup>	353 <sup>a</sup>	-	-	-
Magnesium	mg	109 <sup>a</sup>	103 <sup>a</sup>	93 <sup>a</sup>	98 <sup>a</sup>	-	-	-
Zinc	mg	2.87 <sup>a</sup>	2.8 <sup>a</sup>	3.5 <sup>a</sup>	3.1 <sup>a</sup>	-	-	-
Selenium	ppm (w/w)	0.44 <sup>a</sup>	0.44 <sup>a</sup>	0.99 <sup>a</sup>	0.77 <sup>a</sup>	-	-	-
Folic Acid	mcg	74 <sup>a</sup>	143 <sup>a</sup>	119 <sup>a</sup>	107 <sup>a</sup>	-	-	-
Vitamin A	RF	< 20 <sup>a</sup>	34 <sup>a</sup>	< 20 <sup>a</sup>	< 20 <sup>a</sup>	-	-	-
Vitamin C	mg	5.1 <sup>a</sup>	5.8 <sup>a</sup>	6.4 <sup>a</sup>	5.7 <sup>a</sup>	-	-	-

Db = dry weight basis

<sup>a</sup>Analyses conducted by Mérieux NutriSciences, 2015. Fibre analysis by AOAC 991.43 and AOAC 2011.25.<sup>b</sup>Analyses conducted by Canadian International Grains Institute, 2014. Fibre analysis by AOAC 991.43.<sup>c</sup>Analyses conducted by Improve Institute, 2019.<sup>d</sup>Data adapted from Sopiwynek et al. (2020) *LWT – Food Science and Technology*. 121: 108971. Fibre analysis by AACC 32-05.01.<sup>e</sup>Data adapted from Maskus et al. (2016). *Cereal Foods World*. 61(2): 59-64. Fibre analysis by AOAC 991.43.<sup>f</sup>Data adapted from Stone et al. (2019) *Cereal Chemistry*. 96: 1159-1169.<sup>g</sup>Data adapted from Ma, Boye and Hu (2017) *Food Research International*. 92: 64-78. Fibre analysis by AOAC 985.29.<sup>h</sup>Data adapted from Lu et al. (2018) *International Journal of Food Science and Technology*. 53:735-746.