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Supplemental Table A Nutrient composition of 20 cooked lentils (dwb)

Variety	market class	Calories	Ash	Fat	Protein	CHO	Moisture	TDF
CDC		KJ/100g	g/100g	g/100g	g/100g	g/100g	g/100g	g/100g
Asterix	ex sm green	1647	2.6	0.8	27.0	69.9	69.1	22.3
Eston	sm green	1651	2.7	1.1	27.2	69.0	66.8	22.0
Invincible	sm green	1651	2.5	1.2	28.0	68.2	67.9	21.2
Milestone	sm green	1666	2.2	1.4	23.9	72.5	68.0	22.8
Imigreen	med green	1650	2.7	1.1	26.5	69.5	66.6	22.2
Greenland	lg green	1641	2.9	1.1	26.5	69.3	69.4	26.8
Impower	lg green	1659	2.6	1.3	26.0	70.3	66.0	22.4
Improve	lg green	1651	2.7	1.2	27.2	68.8	70.2	28.2
Plato	lg green	1649	3.0	1.2	20.8	75.0	70.4	27.0
Sovereign	lg green	1653	2.9	1.2	28.3	67.9	69.2	30.2
Imperial	ex sm red	1656	2.5	1.2	30.0	66.3	68.0	26.9
Redbow	ex sm red	1643	2.9	0.7	27.7	68.8	68.9	29.6
Rosetown	ex sm red	1648	2.9	1.0	27.6	68.6	68.5	37.8
Blaze	sm red	1644	3.1	1.1	33.0	62.8	67.7	22.9
Dazil	sm red	1670	2.8	1.9	28.6	67.0	67.6	24.7
Impact	sm red	1663	2.6	1.6	29.1	66.7	68.8	25.6
Maxim	sm red	1660	2.8	1.5	27.5	68.5	67.6	26.9
Redberry	sm red	1668	2.5	1.5	28.4	67.7	68.4	28.2
Redcliff	sm red	1658	2.9	1.4	26.4	69.6	68.7	27.2
Rouleau	sm red	1654	2.4	1.0	25.9	70.8	66.8	23.5

dwb, dry weight basis; CDC, Crop Development Centre (Department of Plant Sciences, University of Saskatchewan); CHO, total carbohydrate; TDF, total dietary fibre; lg, large; med, medium; sm, small; ex sm, extra small.

Proximate and dietary fiber analysis measured commercially (Maxxam Analytics International Corporation, Mississauga, ON, Canada) ($n=1$) using the following methods: energy, by calculation; ash, AOAC 923.03; fat, AOAC 922.06 & 933.05; protein, AOAC 992.15; CHO by difference; moisture, AOAC; TDF, AOAC 991.43.

Supplemental Table B Starch content of cooked, freeze-dried and ground (<250 µm) lentils

Variety CDC	Market class	Moisture (%, dwb)	TS (%, dsw)	RDS (%, dsw)	SDS (%, dsw)	RS (%, dsw)
Asterix	ex sm green	4.5±0.1	43.7±0.2 ^{fghi}	76.6±0.6 ^{fghi}	4.5±0.3 ^a	19.0±0.3 ^d
Eston	sm green	4.9±0.2	43.1±0.8 ^{cdefg}	75.1±2.0 ^{efghi}	14.8±0.5 ^{bcd}	10.1±1.4 ^{abc}
Invincible	sm green	5.6±0.1	44.8±0.1 ^{gh}	73.6±1.4 ^{defg}	12.0±1.0 ^{bcd}	14.4±0.4 ^{cd}
Milestone	sm green	4.7±0.0	46.4±0.5 ^j	72.0±2.4 ^{cdef}	17.9±2.0 ^{defg}	10.1±0.3 ^{abc}
Imigreen	med green	4.3±0.1	44.8±0.4 ^{gh}	68.8±1.1 ^{abcd}	18.4±0.7 ^{efg}	12.9±0.5 ^{bc}
Greenland	lg green	2.4±0.1	42.5±0.6 ^{bcd}	75.4±1.1 ^{efgh}	13.9±0.9 ^{cdef}	10.7±0.7 ^{abc}
Impower	lg green	4.9±0.1	44.3±0.0 ^{fghi}	71.8±0.2 ^{cdef}	16.2±0.2 ^{cdef}	12.0±0.0 ^{abc}
Improve	lg green	2.5±0.1	44.9±0.2 ^h	67.2±0.5 ^{abc}	22.7±0.3 ^{gh}	10.2±0.2 ^{abc}
Plato	lg green	1.8±0.2	47.8±0.4 ^j	73.1±0.1 ^{defg}	15.7±0.5 ^{cdef}	11.2±0.5 ^{ab}
Sovereign	lg green	1.7±0.0	43.6±0.1 ^{defghi}	70.8±1.1 ^{bcd}	20.3±0.9 ^{efg}	8.9±0.2 ^{ab}
Imperial	ex sm red	2.3±0.0	42.7±0.2 ^{cde}	72.7±3.2 ^{defg}	16.1±0.9 ^{cdef}	11.2±2.3 ^{abc}
Redbow	ex sm red	2.2±0.1	41.2±0.0 ^{ab}	78.6±0.1 ^{hi}	11.7±2.6 ^{bc}	9.7±2.5 ^{abc}
Rosetown	ex sm red	2.1±0.1	43.5±0.4 ^{defgh}	73.1±0.7 ^{defg}	14.4±1.4 ^{bcd}	12.5±0.7 ^{abc}
Blaze	sm red	5.4±0.1	40.8±0.3 ^a	77.6±0.5 ^{ghi}	4.1±1.8 ^a	18.4±1.3 ^d
Dazil	sm red	7.1±0.0	42.3±0.3 ^{bcd}	77.5±0.5 ^{ghi}	12.1±1.1 ^{bcd}	10.4±0.6 ^{abc}
Impact	sm red	4.6±0.0	43.1±0.4 ^{defg}	65.5±1.7 ^a	20.3±3.2 ^{efg}	14.2±1.6 ^{cd}
Maxim	sm red	3.7±0.1	43.2±0.1 ^{defg}	66.7±0.4 ^{ab}	21.6±0.3 ^{fg}	11.8±0.2 ^{abc}
Redberry	sm red	5.8±0.2	41.7±0.4 ^{abc}	63.9±1.1 ^a	28.4±2.8 ^h	7.7±1.6 ^a
Redcliff	sm red	2.3±0.1	44.4±0.5 ^{fgh}	79.6±0.1 ⁱ	8.7±0.1 ^{ab}	11.6±0.0 ^{ab}
Rouleau	sm red	9.4±0.0	44.1±0.5 ^{fgh}	71.6±0.4 ^{bcd}	17.6±0.1 ^{cdefg}	10.8±0.3 ^{abc}

Mean ± standard deviation ($n=2$) shown; TS determined using AACC 76-13 with 2mL 90% DMSO pre-treatment. RDS, SDS, RS determined using *in vitro* starch digestion method³² with modifications²⁴.

dwb, dry weight basis; TS, total starch; RDS, rapidly digestible starch; SDS, slowly digestible starch; RS, resistant starch; dsw; dry starch weight basis. Means with different letter superscripts differ significantly ($p<0.05$, Tukey's test).

Supplemental Table C: Inclusion / Exclusion Criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
Age 18 – 75 yr inclusive	Known history of AIDS, hepatitis, diabetes, a heart condition, or gastrointestinal disease
Body mass index < 30 kg/m ²	Regular consumption of supplements which have an effect on blood glucose response.
Fasting serum glucose <7.0 mmol/L (corresponding to capillary whole blood glucose <6.3 mmol/L)	Tobacco use
Willingness to maintain habitual diet, physical activity pattern, and body weight throughout the trial	Shift workers
Understanding of the study procedures	Major trauma or surgical event within 3 months of screening
Willingness to provide informed consent to participate in the study	Sensitivity or allergy to any ingredients in the study products
	Use of medications or any condition which might, in the opinion of the principal investigator, make participation dangerous to the individual or affect the study results
	Non-compliance with experimental procedures and laboratory safety guidelines