

Oils & Phytosterols

Nearly 2% of the weight of the dried Saskatoon Berries is oil and 81% of that is mono- and poly-unsaturated fatty acids, which are healthy oils. Omega-3 and omega-6 oils contribute to 4% and 52% of the oil weight, respectively. One hundred grams of dried Saskatoon Berries carry about 117mg of phytosterols. Beta-sitosterol and beta-sitostanol are the major phytosterols of Saskatoon Berries.

As important constituents of plant cell membrane, phytosterols (i.e. sterols and stanols) play an important role in seed germination and development. The humans and animals have an analogous sterol, cholesterol, the structure of which differs from phytosterols only slightly. The phytosterol absorption in the intestine is several times lower than the cholesterol absorption. In addition, phytosterols inhibit absorption of cholesterol in the intestine. Health Canada identifies phytosterols as functional foods.

Like other phytochemicals, sterol composition of saskatoons varied seasonally. As per data for 2012 and 2013, saskatoon berries contain 106-117 mg of sterols and stanols in total in each 100 g of dried berries. Strawberries carry similar amounts (110 mg/100g) of phytosterols whilst blueberries carry significantly higher amounts (216 mg/100g) of these compounds. Beta-sitosterol is the major phytosterol of saskatoons and each 100 g of dried fruit contains 43.3 mg of the compound. Beta-sitosterol is considered as the plant sterol with the highest potential to produce steroidal drugs and cholesterol lowering products. Beta-sitostanol, campesterol and stigmasterol are the other important phytosterols of saskatoons and present in concentrations 24.9, 13.6 and 14.3 mg/100 g of dries fruit, respectively.

Did you know?

Plant Sterols help reduce the cholesterol levels in moderately to highly cholesterolemic adults

“Studies have shown that plant sterols mimic cholesterol in the small intestine and partly block cholesterol absorption. Therefore, regular consumption of a variety of foods containing plant sterols results in the lowering of LDL-cholesterol levels, while having no detrimental effect on HDL-cholesterol levels (often referred to as good cholesterol). This would benefit those who want to lower their blood cholesterol levels, i.e., especially those who have moderate to high blood cholesterol”



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Monounsaturated fatty acids	g/100g oil
16:1t-Hexadecenoic (<i>trans</i>)	0.266
16:1 Palmitoleic	0.319
17:1 Margaroleic	0.053
18:1 Oleic	22.648
20:1 Gadoleic	0.957
Total	24.243

Polyunsaturated fatty acids	g/100g oil
18:2 Linoleic (cis-cis) (<i>omega-6</i>)	52.738
18:2 Conjugated-Linoleic	0.159
18:3 a-Linolenic (cis-cis) (<i>omega-3</i>)	4.572
20:2 Eicosadienoic (cis-cis)	0.106
Total	57.575

Saturated fatty acids	g/100g oil
10:00 Capric	0.106
12:00 Lauric	0.213
14:0 Myristic	0.159
15:0 Pentadecanoic	0.106
16:0 Palmitic	11.164
17:0 Margaric	0.213
18:0 Stearic	1.914
20.0 Arachidic	1.648
22:00 Behenic	1.861
23:00 Tricosanoic	0.159
24:00 Lignoceric	0.638
Total	18.18

Plytosterols	mg/100g dried berries
Beta-sitosterol	43.30
Campesterol	13.60
Stigmasterol	14.30
Brassicasterol	<0.10
Beta-sitostanol	24.90
Delta-5-avenasterol	7.94
Delta-7-avenasterol	4.49
Delta-7, 25-stigmadienol	4.41
24-Methylene cholesterol	2.80
D7 stigmasterol	1.51
D7 campesterol	<0.10
Campestanol	<0.10
Clerosterol	<0.10

How do we know?

Tested Saskatoon Berries (2012 and 2013)
by the Brunswick Laboratories, USA
Represented all economically important
cultivars and Canadian provinces, SK, AB, MB

