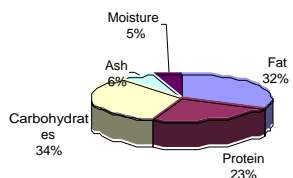


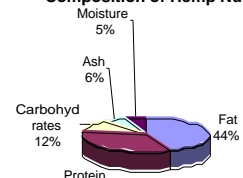
# Nutritional Composition of Hemp Seed and Oil

Composition of Whole Hemp Seed



Hemp Seed	Parameter	Hemp Seed (nut)
5 kCal/g	Energy	5.6 kCal/g
32%	Fat	44%
23%	Protein	33%
34%	Carbohydrates	12%
3%	- soluble fiber	1%
29%	- insoluble fiber	8%
2%	- sugars	3%
6%	Ash	6%
5%	Moisture	5%

Composition of Hemp Nut

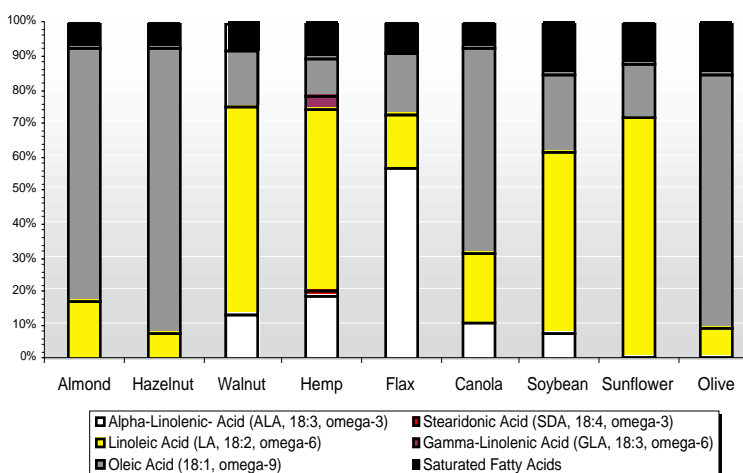


Typical Fatty Acid Composition of Hemp Seed Oil

Unsaturated Fatty Acids	
Linoleic Acid 18:2 ω-6	54-57%
α-Linolenic Acid, 18:3 ω-3	16-20%
γ-Linolenic Acid 18:3 ω-6	2-4%
Stearidonic Acid 18:4 ω-3	0.5-1.5%
Eicosaenoic Acid 20:1ω-9	0.5%
Oleic Acid 18:1 ω-9	10-13%
Saturated Fatty Acids	
Palmitic Acid 16:0	6-7%
Stearic Acid 18:0	2-3%
Arachidic Acid 20:0	0.5-0.8%
<b>Total Saturated Fatty Acids</b>	<b>9-11%</b>

Note:  
FA spectrum of hemp seed oil varies with hemp variety and growing conditions

Fatty Acid Composition of Nut and Seed Oils



Typical Content of Select Minerals and Vitamins in Whole and Hulled Hemp Seeds

	RDI (mg/day)	Whole Seeds		Hulled Seeds (Nuts)	
		mg/100 g	30 g Seeds = % RDI	mg/100 g	30 g Nuts = % RDI
Energy		5.0 kCal/g	150 kCal	5.6 kCal/g	170 kCal
Phosphorus	1000	1100	33%	1600	48%
Potassium	2000	900	14%	1100	17%
Magnesium	400	450	34%	670	50%
Calcium	1000	150	5%	80	2%
Iron	18	12	20%	11	18%
Manganese	5	10	60%	10	60%
Zinc	15	7	14%	11	22%
Copper	2	1	15%	0.5	8%
Thiamine (B1)	1.5	1.3	26%	1.3	26%
Riboflavin (B2)	1.7	1.2	21%	1.2	21%
Pyroxidine (B6)	2	0.5	8%	0.5	8%
Vitamin C	60	1.7	1%	1.7	1%
Vitamin E	30	6	6%	8	8%

Other nutritionally relevant constituents: gamma tocopherol, tocotrienols, several phytosterols

No Reference daily intake (RDI) established, approx. safe/adequate intake shown.

Sources:  
Hemp Oil Canada, Dr. Jace Callaway, Gordon Scheifele, 1999,  
Canola Council of Canada, FDA List of Reference Daily Intake (RDI)  
Bockisch, Fats and Oils Handbook, AOCS Press, 1998  
Analyses of product provided by Canadian hemp seed processors