

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Linum usitatissimum*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	24-METHYLENE-CYCLOARTENOL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	ACETIC-ACID	Seed	3105.0	3853.0	-0.45177356521117334	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALANINE	Seed		0.254	-2.158955919799553	--
0	ALPHA-CEPHALINE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	ALPHA-LINOLENIC-ACID	Seed	108000.0	254600.0	4.689859301771256	--
15	ALPHA-LINOLENIC-ACID	Flower				--
15	ALPHA-LINOLENIC-ACID	Sprout Seedling				--
32	ALPHA-TOCOPHEROL	Oil		5.0	-0.6929583568728471	--
32	ALPHA-TOCOPHEROL	Seed Oil				--
0	AMMONIA	Seed		3000.0	-1.1097957592672159	--
0	AMMONIA(NH3)	Seed		3000.0	-0.3519642461737174	--
101	APIGENIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	ARGININE	Seed		0.554	-1.0433413024542735	--
2	ARSENIC	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ASH	Seed	26000.0	49000.0	0.03368352764748354	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Hay	62000.0	72000.0	-1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	ASPARTIC-ACID	Seed		0.557	-2.0052985487141943	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	AUXINE-ESTER	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	BARIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
53	BETA-CAROTENE	Seed	0.0	0.321	-0.4092431063494038	--
0	BETA-HYDROXY-BETA-METHYL-GLUTARIC-ACID	Seed				--
0	BETA-HYDROXY-BETA-METHYL-GLUTARIC-ACID-MONOMETHYLESTER	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Seed		19.0	-0.6236819715213897	--
3	CADMIUM	Seed	0.075	2.8	1.0827489707798146	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	CAFFEIC-ACID-ESTER	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	CALCIUM	Seed	1820.0	7400.0	0.5975460826300514	--
28	CALCIUM	Hay		7200.0		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CALLISTEPHIN	Flower				--
2	CAMPESTEROL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CARBOHYDRATES	Seed	299000.0	397000.0	-0.5023482242890303	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Hay	801000.0	817000.0	1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CAROTENES	Seed	0.321	1.07		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	CELLULOSE	Seed	93000.0	147000.0	0.3583523215580603	--
0	CEROTIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CERYL-ALCOHOL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CERYL-CEROTATE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	CHLORINE	Seed	42.0	78.0	-0.5791204881302392	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
77	CHLOROGENIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
77	CHLOROGENIC-ACID	Seed				--
1	CHOLESTEROL	Seed				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
20	CHOLINE	Seed	910.0	1180.0	-0.46342254709086045	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
24	CHROMIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CHRYSANTHEMIN	Flower				--
0	CIS-12-OXOPHYTODIENOIC-ACID	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CIS-LINOLEIC-ACID-METHYL-ESTER	Seed		4.3		--
2	COBALT	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	COLININ	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
5	CONIFERYL-ALDEHYDE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
12	COPPER	Seed	17.0	23.0	0.7424671767599702	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
7	CYANIDIN	Flower				Abstract (See species file)
0	CYANIDIN-3,5-DIGLUCOSIDE	Cotyledon				--
0	CYANIDIN-3-GLUCOSYL-RUTINOSIDE	Flower				--
0	CYANIDIN-3-O-BETA-D-GLUCOSYL-RUTINOSIDE	Flower				--
0	CYANIDIN-3-TRIGLUCOSIDE	Flower				--
0	CYANOGENIC-GLYCOSIDES	Seed	3310.0	8350.0		Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
7	CYCLOARTENOL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CYCLOLIPOPEPTIDE	Seed				--
0	CYCLOLIPOPEPTIDE-A	Seed Oil				--
0	CYCLOLIPOPEPTIDE-B	Seed		2.0		--
13	CYSTEINE	Seed		0.09	-1.10002836803819	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	D-XYLOPYRANOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	D-XYLOSE	Seed	5400.0	16200.0		--
5	DAUCOSTEROL	Seed		3.0	-0.8762395152008512	--
9	DELPHINIDIN	Flower				Abstract (See species file)
0	DELPHINIDIN-3-0-BETA-D-GLUCOSIDE	Flower				--
0	DELPHINIDIN-3-0-BETA-D-RUTINOSIDE	Flower				--
0	DELPHINIDIN-3-DIGLUCOSIDE	Flower				--
0	DELPHINIDIN-3-GLUCOSYL-RUTINOSIDE	Flower				--
1	DELPHINIDIN-3-O-BETA-D-GLUCOSIDE	Flower				--
0	DELPHINIDIN-3-O-BETA-D-RUTINOSIDE	Flower				--
0	DELPHINIDIN-3-TRIGLUCOSIDE	Flower				--
1	DELTA-5-AVENASTEROL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	DELTA-TOCOPHEROL	Seed Oil				--
0	DIASTASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	DICROTALIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	EICOSANOL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ERUCIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	FAT	Seed	40000.0	450000.0	0.9724195926436688	--
0	FAT	Hay	33000.0	61000.0	1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FATTY-ACIDS	Seed Oil				Upadhy, G. S., Narayanaswamy, G., Kartha, A. R. S. 1974. Note on the Comparative Development of Fatty Acids in Ripening Seeds of 6 Dicot Species Producing C16-C18 Acid Fats. Indian J. Agr. Sci. 44: 620.
61	FERULIC-ACID	Seed				--
0	FERULIC-ACID-ESTER	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	FERULIC-ACID-ESTER	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	FIBER	Hay	365000.0	462000.0	1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Seed	48000.0	126000.0	-0.06931908335079716	--
0	FLAVONOIDS	Tissue Culture				--
0	FUCOSE	Seed	4000.0	5000.0		Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	GALACTURONIC-ACID	Seed	9000.0	48489.0		--
20	GAMMA-LINOLENIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
14	GAMMA-TOCOPHEROL	Oil		573.0	0.7575983644124141	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	GAMMA-TOCOPHEROL	Seed Oil				--
0	GENTIOBIOSE	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
11	GERANYL-GERANIOL	Seed				--
7	GLUCOSE	Seed	111000.0	146000.0	3.201211441889907	--
4	GLUCURONIC-ACID	Seed				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
8	GLUTAMIC-ACID	Seed		1.153	-1.7598687378912001	--
12	GLYCINE	Seed		0.352	-1.5834447610833413	--
9	HCN	Hull Husk		460.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	HCN	Flower		6920.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	HCN	Shoot		1280.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	HCN	Seed	0.08	600.0	-0.3812623601747087	--
9	HCN	Root		670.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	HETEROSIDE	Sprout Seedling				Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.
0	HEXADECANOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	HISTIDINE	Seed		0.108	-1.6280448288553528	--
6	IRON	Seed	29.0	549.0	1.8501912385034966	--
0	ISOFUCOSTEROL	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of <i>Perilla frutescens</i> and <i>Linum Usitatissimum</i> . <i>Takyo Gakugei Daigaku Kiyo Dai-4-Bumon</i> , 45: 27-32.
3	ISOLEUCINE	Seed		4.0	-1.3382280003117872	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ISOLEUCINE	Plant		0.237	-1.4141272939903209	--
4	ISOORIENTIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	ISOVITEXIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	L-ARABANOFURANOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	L-ARABINOSE	Seed	2700.0	7200.0	-1.0	--
0	L-GALACTOSE	Seed	2400.0	7200.0		--
0	L-RHAMNOSE	Seed	3900.0	17800.0		--
0	LEAD	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
20	LECITHIN	Seed		8800.0	-0.4991948044159543	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LEUCINE	Seed		0.316	-1.6349859893322434	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LIGNANDIGLUCOSIDE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	LIGNANS	Plant				--
10	LIGNANS	Seed	525.0	675.0	-1.0	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
13	LIGNIN	Seed	52000.0	72000.0	0.4935473881578569	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	LINAMARASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LINAMARIN	Seed	0.0	320.0		--
0	LINASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LINEIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LININ	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LINOCAFFEIN	Seed				--
0	LINOCINNAMARIN	Seed		30.0		--
27	LINOLEIC-ACID	Seed	30000.0	100000.0	-0.06102368779923489	--
27	LINOLEIC-ACID	Flower				--
27	LINOLEIC-ACID	Sprout Seedling				--
27	LINOLEIC-ACID	Seed Oil		182000.0	-0.8223368361797175	--
0	LINOLENIC-ACID	Seed	108000.0	228000.0	3.4004528622626684	--
0	LINOLENIC-ACID	Seed Oil	210000.0	553000.0	0.9417924041354631	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINUM-GALACTANS	Tissue Culture				--
0	LINUSITAMARIN	Seed		5.0		--
1	LINUSTATIN	Seed	4.8	5380.0		--
0	LIPASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
11	LITHIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LOTAUSTRALIN	Seed				--
0	LUCENIN-1	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LUCENIN-2	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
78	LUTEOLIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	LYSINE	Seed		2.5	-1.63848275248756	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	LYSINE	Plant		0.209	-1.2551253944019245	--
65	MAGNESIUM	Seed	3715.0	7002.0	1.6024579573476614	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
65	MAGNESIUM	Hay		3100.0	-1.0	--
15	MALIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	MANGANESE	Seed	50.0	70.0	0.2052706550190378	--
14	MANGANESE	Hay		8.1	-1.0000000000000002	--
0	MANNURONIC-ACID	Seed	4500.0	9000.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
15	METHIONINE	Seed		0.09	-1.1141398667164637	--
0	METHYL-LINAMARIN	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	MOLYBDENUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	MUCILAGE	Seed	20000.0	84000.0	-0.7141062298500116	--
6	MYRISTIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	NEOLINUSTATIN	Seed	19.0	4540.0		--
0	NH3	Seed		3000.0	-1.4101609728096458	--
39	NIACIN	Seed		15.0	-0.8347441211060711	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	NICKEL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	NICOTINAMIDE	Seed		38.0	1.0	--
33	NORDIHYDROGUAIARETIC-ACID	Seed				--
1	O-GLYCOFLAVONE-C-GLYCOSIDE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
18	OLEIC-ACID	Seed	16.0	120000.0	0.007370246204918166	--
18	OLEIC-ACID	Flower				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	OLEIC-ACID	Seed Oil		283000.0	-0.1995525939212177	--
0	OLEORESIN	Seed	520.0	5850.0	-1.0	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
4	ORIENTIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
25	P-COUMARIC-ACID	Seed		60.0	-0.364755663014079	--
0	P-COUMARIC-ACID-ESTER	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	P-HYDROXY-BENZOIC-ACID	Sprout Seedling				Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.
13	PALMITIC-ACID	Seed Oil		90000.0	-0.6107337786717688	--
13	PALMITIC-ACID	Seed	19005.0	22515.0	-0.23504354469855987	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
11	PANTOTHENIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
24	PECTIN	Seed	53900.0	100000.0	2.5314122594852875	--
0	PELARGONIDIN-3-O-BETA-D-GLUCOSYL-RUTINOSIDE	Flower				--
0	PELARGONIDIN-3-O-BETA-D-RUTINOSIDE	Flower				--
0	PENTOSANS	Seed	79000.0	99000.0	0.42471142796963834	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	PENTOSES	Seed	4010.0	4977.0	-1.4142135623730951	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PEROXIDASE	Cotyledon				--
0	PEROXIDASE	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PEROXIDASE	Hypocotyl				--
0	PHENOLIC-ACID-ESTERS	Seed	739.0	5420.0		--
0	PHENOLIC-ACIDS	Seed	810.0	103400.0		--
7	PHENYLALANINE	Seed		0.239	-1.3781037282174438	--
0	PHOSPHATIDES	Seed		7000.0	-0.09878698384821892	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
2	PHOSPHATIDYL-CHOLINE	Seed	160.0	2025.0	1.0	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	PHOSPHATIDYL-SERINE	Seed	160.0	2025.0		Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
0	PHOSPHOLIPIDS	Seed	360.0	4050.0	-0.5954216753452876	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
4	PHOSPHORUS	Seed	3961.0	20335.0	3.9590351958118073	--
4	PHOSPHORUS	Hay		1110.0		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
9	PHYTIC-ACID	Seed	18000.0	33000.0	1.1694904127352321	--
0	PHYTIN	Seed	24000.0	64000.0	1.6398847943395507	--
1	PHYTOL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	POLYSACCHARIDES	Seed				--
14	POTASSIUM	Seed	7964.0	15009.0	0.21448936936526888	--
14	POTASSIUM	Hay		17400.0		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROLINE	Seed		0.191	-2.226996902840283	--
0	PROTEIN	Seed	160000.0	341000.0	0.9536344979354476	--
0	PROTEIN	Hay	76000.0	78000.0	-1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	RAFFINOSE	Seed				--
0	RHAMNOGALACTURONAN	Seed				Abstract (See species file)
15	RIBOFLAVIN	Seed		1.7	-0.6991387592002618	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	SECOISOLARICIRESINOL	Plant				Stitt, Paul. Why George should eat broccoli.
3	SECOISOLARICIRESINOL	Seed				--
1	SERINE	Seed		0.248	-2.0265239206958663	--
0	SILICA	Seed	322.0	608.0	-1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	SILVER	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	SINAPIC-ACID	Seed				--
0	SINAPIC-ACID-ESTER	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SINAPIC-ACID-GLUCOSE-ESTER	Seed				--
1	SODIUM	Seed	400.0	1014.0	0.8939255700301022	--
10	SQUALENE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	SQUALENE	Seed Oil				--
5	STARCH	Seed	2000.0	39000.0	-1.0980435455891777	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.
8	STEARIC-ACID	Seed Oil		81000.0	-0.2772564234419937	--
8	STEARIC-ACID	Seed	13595.0	16545.0	-0.20641972214709475	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	STIGMASTEROL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	STRONTIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	SUCROSE	Seed		388.0	-0.6923667566162774	--
14	SULFUR	Seed	608.0	4200.0	0.9418680963960322	--
31	THIAMIN	Seed		1.8	-1.141416879500738	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	THREONINE	Seed		0.195	-1.8202596354546852	--
4	TIN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	TITANIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
93	TOCOPHEROL	Seed		47.0	-0.4002735595606585	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	TRANS-CAFFEIC-ACID	Seed		55.0		--
2	TRANS-FERULIC-ACID	Seed		375.0	-0.47614826602151417	--
0	TRANS-LINOLEIC-ACID-METHYL-ESTER	Seed		4.3		--
0	TRANS-SINAPIC-ACID	Seed		290.0		--
29	TRYPTOPHAN	Seed		0.089	-1.1339383282290112	--
8	TYROSINE	Seed		0.133	-1.7932335597859743	--
3	VALINE	Seed		0.284	-1.4793036444616081	--
16	VANADIUM	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	VICENIN-1	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	VICENIN-2	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
18	VITEXIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
77	ZINC	Seed	85.0	155.0	3.1191728559254055	Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.