
Health Benefits of Sprout Consumption

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Introduction

Sprouting of soybeans and mung beans was developed by the Chinese centuries ago. Sprouts are a traditional component of the oriental diet. Health benefits of sprout consumption were observed as early as 1782 when anti-scurvy properties of germinating seeds were seen.

Sprouts are fresh, low-cost vegetables. They can be grown indoors in any season, and may contribute important nutrients to the human diet.

Nutritional Value of Sprouts

Raw Sprouts	Calories (1cup)	Protein (g)	Fiber (%RDA)	Vitamin C (%RDA)	Iron (%RDA)	Folate (%RDA)
Alfalfa	10	1.3	3	5	2	3
Mung Bean	26	2.5	4	23	4	9
Radish	16	1.4	n/a	18	2	9
Soybean	86	9.0	3	17	8	30
Wheat	214	8.0	4	5	11	10

(Source: FDA Consumers)

Good Sources of Vitamin C and Folate

Phytoestrogen Content of Raw Sprouts (mg/100g wet weight)

	Coum	Form	Bioc	Dein	Gein	Glyc
Alfalfa	4.68	0.69	0.85	-	-	-
Clover	28.06	2.28	0.44	-	0.35	-
Mung Bean	-	0.61	-	0.01	0.18	-
Soy Bean	38.55	-	-	4.66	7.38	1.10

Health Benefits of Sprout Phytoestrogens:

There are increased risks of coronary heart disease and osteoporosis as a result of reduced estrogen levels after menopause. Phytoestrogens may be natural alternatives to hormone (estrogen) replacement therapy. Sprouts contain the most potent phytoestrogen -- coumesterol.

Phytoestrogens have been shown to exert beneficial effects on cholesterol in animal and human studies: decrease LDL cholesterol, increase HDL cholesterol and decrease total cholesterol.

Phytoestrogens prevent bone loss in cell, animal and human studies: inhibit bone breakdown, increase bone formation and increase bone mineral density. Phytoestrogens are anticarcinogenic in cell, animal and human studies: inhibit protein tyrosine kinases, inhibit DNA topoisomerases, suppress angiogenesis, antioxidant effects and antiestrogenic effects.

Saponin Content in Raw Sprouts

	(mg / g dry weight)	
Alfalfa	87 - 95	
Soy Bean	~ 56	
Lentil	~ 40	
Pea Bean	25 - 36	
Clover	+++	(no figures available, but known to contain saponin)
Mung Bean	+++	“ “ “ “

Health Benefits of Sprout Saponins

Saponins exert beneficial effects on cholesterol in animal and human studies: increase fecal cholesterol excretion, increase fecal bile acid and neutral steroid excretion and decrease plasma total cholesterol. Saponins are anticarcinogenic in cell and animal studies: direct cytotoxic and growth inhibitory effects against cancer cells, prevent carcinogen formation in gut and enhance immune functions. Saponins stimulate the Immune system in cell and animal studies: increase activity of natural killer cells, increase activity of cytotoxic T lymphocytes and increase interferon production

Effects of Germination on Phytoestrogens and Saponins (mg/g dry weight)

		Seeds	Sprouts Increase
Alfalfa	Saponins	~ 20	~ 90 4.5X
Soybean	Coumesterol	~ 0.0005	~ 7.71 15,420X

Future Direction of Sprout Health Benefit Research

- Determine the phytoestrogen and saponin profile and content in a wide variety of sprouts
- Characterize human absorption of sprout phytoestrogens and saponins
- Perform controlled human feeding studies to examine sprout health benefits
- Increase the content of beneficial phytoestrogens and saponins in sprouts, through technological innovations.

Good News About Sprouts Will Keep Sprouting!