

Soybean: A New Generation Bean

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ABSTRACT

Soybean and its food products have been extensively used as dietary items throughout the world. Soybean is well known for its nutritional value because of its high protein profile. The nutritional benefits of soybean are mainly due to the presence of essential amino acids, fibers, polyunsaturated fatty acids, vitamins, isoflavone content and minerals. In addition to nutritional benefits, soybean supplementation also reduces the risk of developing various disorders such as cancer (including breast, prostate, endometrial and colon cancers), cardiovascular diseases (including hyperlipidemia, atherosclerosis), osteoporosis, cognitive dysfunction (including dementia and Alzheimer's disease) and diabetes mellitus. Moreover, soybean plays an important role in reducing renal disease, viral infections and also acts as an immuno-modulator. Several mechanisms have been proposed for these beneficial effects such as modulation of estrogen receptors, lowering of cholesterol, antioxidant activity, protein tyrosine kinase inhibition and prevention of proliferation of cells. This review article mainly covers the nutritional and pharmacological profile of soybean.

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Key words :

Soy, Golden bean,
Isoflavones,
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Soybean is known as the 'Golden bean' or 'the superlegume' of the twentieth century. It represents an excellent source of high quality proteins, fibers and unsaturated fatty acids. Soybean contains very small amounts of saturated fatty acids and do not contain any trans-fatty acids. Furthermore, soybean contains both omega-6 and omega-3-fatty acids such as linoleic acid (56% of total fat) and alpha-linolenic acid (7-8% of total fat). Cooked soybeans are rich in iron and phosphorus and a good source of magnesium, vitamin B2 (riboflavin) and folate. Soybean is one of the best vegetarian sources of total proteins containing all essential amino acids required in the human diet. Common food preparations of soybean include edamame (whole soybean), soy flour, soy milk, tofu (soybean curd), temphe (cooked and fermented soy), miso (fermented soybean paste), soybean oil, soy lecithin and soy sauce.

Biological Source:

Soybean is derived from seeds *Glycine max* (L) Merr of family- Leguminosae or Fabaceae

Scientific classification:

Kingdom- Plantae; Phylum-

Magnoliophyta; Class- Magnoliopsida; Order- Roseaceae, Fabales; Family- Leguminosae or Fabaceae; Subfamily- Papilionoidae; Genus- Glycine; Species- *Glycine max* (L) Merr.

Vernacular names:

Soybean, Soy, Soya, Soja, Hindi- Bhat, Bhatwar, Bhetmas, Ramkurthi; Bengali- Garjkalai; Assamese- Patnijokra; Khasi- U Rymbi-kutang; French- Soja; Spanish- Soja, Soya

Geographical distribution:

Soybean has been cultivated in China for more than 4000 years. It is believed that with the development of sea and land traders, soybean moved out of China to nearby countries such as Burma (Myanmar), Japan, Indonesia, Malaysia, Nepal, Philippines, Korea, Thailand and Vietnam between first century AD and 1100 AD. However, it remained a minor crop everywhere except in China. With its introduction into USA in the 18th century, and its systematic breeding in the 1940s and 1950s, soybean was transformed from an inefficient fodder crop to a highly productive erect type plant and USA became the largest producer of soybean in the world ever since. Other

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