

Vegetable Soybean: A Crop with Multidimensional Usage

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The year 2020 taught us lots of lessons! The COVID-19 outbreak has created a significant impact on the food habits of the global population as well as in India. Increased awareness among consumers concerning nutritious and protein-rich diet is a major concern to attain better health and immunity. A large sector of the population in our country economically (Low purchasing capacity) abstains from animal protein. More than 27% population particularly those living below the poverty line depend on plant-based protein. Mushrooms, and leguminous vegetables are the cheap and best alternatives to supply easily digestible vegetable protein, besides this, they also contain vitamins and minerals for better nutrition and health. Among legume vegetables, soybean is rich in protein content and widely accepted by various consumers due to its availability as a fresh vegetable as well as diversified processed products. Therefore, the production of nutri-rich legume like vegetable Soybean is a good choice for growers to meet ever-increasing consumer demand. Soybean popularly known as edamame, S.N: *Glycine max*. It is a short-duration leguminous vegetable

crop with low input and high nutritional value (Zhang *et al.*, 2017).

Soya bean rich in protein, fat, and other minerals like K, P, Cu, Mg, thiamine, Lucine and low glycemic index when compare to green peas and pigeon pea. It can be consumed fresh as a vegetable purpose, as well as dry seed, can be used for a wide range of commercial value addition.

It is kharif season vegetable crop prefer sandy loam soils with good drainage capacity. Vegetable soyabean varieties like Swarna Vasudha, Harit Soya and Karune (Karanataka) can be sown June-July with a seed rate of 55-65 kg/ha and 45-50cm x 4-7 cm spacing. Initiates germination in 2-3 days after sowing, starts flowering after 40 days, podded after 60 days and ready for harvest in 70-75 days. There are three pickings in crop duration of 90 to 100 days. Vegetable soybean is harvested when pods are in the green stage (Ernst, 2001). Harvested green pods can be consumed either boiled or prepared with other vegetables such as potato (Ravishankar *et al.*, 2016). The children liked it very much and their mothers were happy to serve it to them for its nutritional benefits.

The harvested green pods can be kept for blanching in hot water followed by immediate cooling in cold water for 5 minutes. Further, these pods can be dipped in normal water for 5 minutes before storing in a deep freezer at -18°C for up to 18months(<https://icar.gov.in/nod/e/5767>). Like frozen peas, seeds of vegetable soybean (frozen) have a great demand in super and hypermarkets located in metro and cosmopolitan cities. Single seeded pods will fetch a high market price due to its consumption of salt in starred restaurants.

The yield of green pods is about 15t/ha and matured dry seeds will be 7-11 t/ha. The milk



Tender soya pods

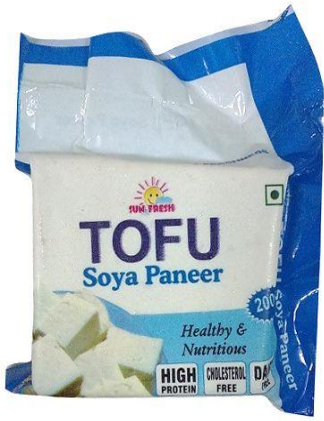


Soya fresh seeds



Frozen soya pods

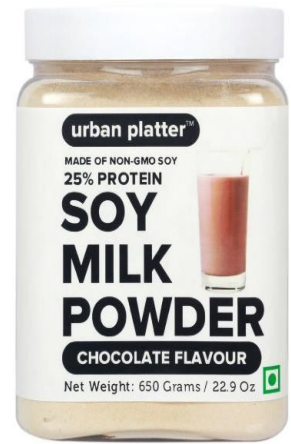
extracted from matured dried seed can be used to prepare Tofu (Soy Paneer). Increasing price as well as demand for this Tofu due to its low fat and minerals like Ca, Fe and K content high over panner. About, 100 Kg dry seeds can produce 225Kg of Soy paneer. The use of soybean in the food industry has increased gradually, as it is useful for the production of many value-added products like milk, paneer, milk powder and sauce. Soy milk is good for health due to its low-fat content further protein extracts from soybean are very popular for muscle improvement in bodybuilders. Soy protein has been blended in



Soy paneer



Soy milk



Soy milk powder



Soy veg chicken



Roasted soy beans



Soy chunks



Soy extract



Soybean cooking oil



Soy protein powder



Soy snacks



Soy butter



Soy sauce

many protein shakes and soy shakes. Many other products like soy curd, *chhena*, gulab jamun sweets, ice creams, etc., are also being prepared. Therefore, we can call as a crop with multidimensional values. Further, future research should thrust on to develop dual purpose (both vegetable and seed types) varieties. Its value-added products are highly remunerative and provide golden opportunities for setting up enterprises.

References

- Ernst M. 2001. Edamame Marketing Fact Sheet, Cooperative Extension Service, University of Kentucky, March.p.1
- Ravishankar, M., Pan, R. S., Kaur, D. P., Giri, R. R., Anil Kumar, V., Rathore, A., & Nair, R. M. (2016). Vegetable soybean: A crop with immense potential to improve human nutrition and diversify cropping systems in Eastern India-A Review. *Soybean Research*, 14(2), 1-13.
- Zhang, Q., Li, Y., Chin, K. L., & Qi, Y. (2017). Vegetable soybean: Seed composition and production research. *Italian Journal of Agronomy*, 12(3).
- https://icarrcer.icar.gov.in/wpcontent/uploads/Vegetable_soybean_Success_story_ICAR_.pdf