



## Scientific Cultivation of Soybean

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Indian farmers and specifically the northern farmers are engaged mainly in rice-wheat cropping system which in long run, due to monocropping, leads to compromised grain yield and also decline the soil fertility. Soybean called as golden beans is belongs to legume family. It is native of East Asia. It is a rich source of Protein also excellent source of fiber. Oil extracted from soybean contain small amount of saturated fat. In Punjab, it plays an important role in crop diversification. Soybean is a high value crop with multiple food, feed and industrial uses. Edible oil, soymilk and its products, bakery products, antibiotics and fresh green beans are some of its major uses. Soybean has a potential to play an important role in crop diversification in the northern states.

### Climatic Requirements

It requires a hot climate.

### Soil Type

Soybean can be grown on a wide range of soils but thrives well on fertile, non-saline/alkaline and well-drained loamy soils.

### Rotations

Soybean-Wheat/Barley, Soybean-Peas-Summer moong, Soybean-Gobhi sarson (Transplanted)

### Improved Varieties

- **SL 958 (2014):** It has shining, light yellow coloured grains with black hilum. Its' grains contain 41.7% protein and 20.2% oil. It is highly resistant to yellow mosaic virus and soybean mosaic virus. It takes about 142 days to mature. Its' average seed yield is about 7.3 quintals per acre.
- **SL 744 (2010):** It has shining, light yellow coloured grains with grey hilum. Its' grains contain 42.3% protein and 21.0% oil. It is resistant to yellow mosaic virus and soybean mosaic. It takes about 139 days to mature. Its' average seed yield is about 7.3 quintals per acre.
- **SL 525 (2003):** It has uniformly bold, shining, cream coloured grains with light black (grey) hilum. Its' grains contain 37.2% protein and 21.9% oil. It is resistant to yellow mosaic virus and tolerates stem blight and root-knot nematode. It matures in about 144 days. Its' average seed yield is about 6.1 quintals per acre.
- **Other varieties:** Alankar, Ankur, Bragg, Lee, PK 262, PK 308, PK 327, PK 416, PK 472, PK 564, Pant Soybean 1024, Pant Soybean 1042, Pusa 16, Pusa 20, Pusa 22, Pusa 24, Pusa 37, Shilajeet, VL soya 2, VL soya 47

**Land Preparation**

Give two ploughings to the field, followed by plankings to free it from clods and bring it into good tilth to ensure good germination. Soybean can also be sown with zero till drill without any preparatory tillage.

**Time of Sowing**

Sow the crop in the first fortnight of June.

**Seed Rate**

Use 25-30 kg seed per acre

**Method of Sowing**

Sow the crop in good moisture conditions with a pre-sowing irrigation. Sow the seeds 2.5 to 5.0 cm deep in lines 45 cm apart with 4-5 cm plant to plant spacing

**Fertilizers**

Soyabean gives higher positive response to applied nitrogen over symbiotically fixed atmospheric nitrogen through its roots alone which proves that nitrogen fixed by soyabean roots is not enough for its and development. Crop is supplied with 10-15% of total nitrogen requirement. Application of 25-30 q/acre FYM at the time of sowing proved better results. 50 Kg N + 100 Kg P<sub>2</sub>O<sub>5</sub>, 20 kg sulphur per ha. Also 25 Kg Zinc sulphate and 10 Kg Borax should be applied.

**Harvesting**

Harvest the crop when most of the leaves fall-off and the pods change colour. Do not delay harvesting otherwise the shattering of pods will take place. During threshing, avoid severe beating or trampling as it reduces the quality and germination capacity of the seeds.

**Storage**

The moisture content of grains should not exceed 7 per cent. The grains should be stored in dry bins or in bags kept on wooden racks.

**Plant-Protection**

- The hairy caterpillar, tobacco caterpillar, pod borer and whitefly damage this crop. The young larvae are gregarious, they can be destroyed by pulling out the infested plants along with larvae and burying them underground. The grown up caterpillars can be destroyed by crushing them under feet or by picking and putting them into kerosenized water.
- Yellow mosaic virus: It is a viral disease and is transmitted by whitefly. Disease appears as a blend of yellow and green patches on the infected leaves. Infected plants bear a few pale pods. Grow resistant varieties SL 958, SL 525 and SL 744.