

## Sprouting Success through Seed Village

*... An Experience*



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Soybean is the world's largest producing oilseeds, having a contribution of around 58 percent, other major producing oilseeds are Rapeseed (13 percent), Cotton seed (10 percent), Peanut (8 percent) and Sunflower (7 percent). Soybean is being on a larger extent because of its various kinds of uses for food, feed and fuel. Major oilseeds grown in India are Soybean, Mustard seed, Groundnut, Sesame, Sunflower, Linseed and Niger seed. Among the nine oilseeds grown in India, Soybean is the largest crop produced in India with a share of 43 percent to total oilseeds production.

India is the fifth largest producer of Soybean in World and it is also second largest import of vegetable oil after China. The area under Soybean cultivation in India has been increasing over the years as farmers are showing more interest on this crop. Climatic condition and better price realization is also helping for rise in acreage. Since it is grown in *kharif* season, it is largely dependent on rainfall. Hence rainfall distribution plays crucial role on yield of the crop.

India holds the lowest rank in terms of yield level. Its productivity is much lower than World average. Average yield in India is 9.50 qt/ha. whereas, World average is at 24.90 qt/ha. However, the average yield of Soybean in Maharashtra is 7.28 qt/ha. and in Nashik District it is about 11.87 qt/ha. Over the years, area as well as production of Soybean has increased enormously.

In Nashik District, about 52.78 per cent (0.95 Lac ha.) area is under oilseed crops. Soybean is the major *kharif* crop under cultivation with 55100 ha area and 65400 tons production. Considering productivity, it is much lower than the potential yield. The Krishi Vigyan Kendra identified the major problems of low productivity through PRA survey, group discussion and farmers interaction. Unavailability of improved seed, inefficient crop management, low plant stand, lack of protective irrigation, lack of seed treatment, lack of INM and IPM are the major constraints faced by the Soybean growers.

However, unavailability of improved variety seed in the market is the foremost problem identified by the Kendra. Though farmers are aware and ensured about the improved varieties, they are unable to grow it due to unavailability of the seed. It is seen that adoption of improved or high yielding varieties enhances the yield level up to 20 to 25 percent. To meet this need, it is important to make available seeds of superior quality, in adequate quantity on a timely basis to the farmers.

The ultimate answer to this was to establish the seed villages. So, emphasis was given on quality seed production on farmer's field and providing it to the farmers on large scale. Seed replacement rates will be raised progressively with the objective of expanding the use of quality seeds. Krishi Vigyan Kendra identified and adopted the village *i.e.* Moh Tal. Sinnar as a potential area for seed production of Soybean. The 'Seed Village Concept' was promoted and implemented to facilitate production, adoption of scientific procedures *viz.* rouging, grading, processing, germination test and timely supply to Soybean growers at reasonable rates at local level. For this purpose,



foundation seed of Phule Kalyani (DS-228) from Mahatma Phule Agriculture University, Rahuri was supplied to the progressive farmers group being established by the Kendra.

**Steps followed during seed production**

1. The seed production programme was conducted on Soybean DS-228 cultivar. The cultivar DS-228 was selected for the seed production for its boldness, higher productivity, attractive colour and more resistant to rust disease.
2. The seed plots were selected on the basis of fertility, soil type, topography, weed population and availability of minimum protective irrigation facility during stress condition at critical crop growth stages. The 4.5 qt. breeder seed of DS-228 supplied to 12 progressive farmers on 15 acre area for seed production programme.
3. The pre-seasonal training on Soybean seed production technology was imparted for thorough knowledge about package and practices, isolation, rouging and care to be taken during seed production.
4. The soil samples were analyzed in Kendra's laboratory and soil test based nutrient management of the crop was done. Conducted method demonstration on seed treatment and soil sample collection.
5. The critical inputs like breeder seed, Rhizobium, PSB and Trichoderma culture were provided to the farmers.
6. The scientists visited and monitored the seed plots at various stages of crop like sowing, germination, branching, flowering, pod development and harvesting stage. Special attention has given on rouging operation, interculturing operation, integrated pest management and irrigation management.
7. The training on seed processing, grading, packing and labeling was conducted.
8. After harvesting, the produce was threshed with mechanized thresher machine and graded with gravitational grader machine being supplied by Kendra. The seed was processed on the basis of seed processing norms. The seed sample was tested at Seed Testing Laboratory, Pune for germination percentage, genetic and physical purity. The samples were passed by STL with more than 76 percent germination and physical purity.
9. At overall, the 110 qt. seed was packed in 30Kg plastic coated poly bag. The label of truthful seed was designed and rates were decided under the guidance of Mahatma Phule Agriculture University, Rahuri.

The summarized cost benefits of the programme (For 15 acres)

No.	Particulars	Rs. (Grain purpose if)	Rs. (Seed purpose)
1.	Cost of cultivation	173400.00	192300.00
2.	Average Yield (9.30qt/ha)	139.50 qt.	110qt. seed + 25qt produce
3.	Market Rate Rs. per qt.	2600.00	5000 (Seed), 2600 (Produce)
4.	Gross Income	362700.00	615000.00
5.	Net Income	189300.00	357700.00
6.	B:C Ratio	2.09	3.20
7.	Horizontal Spread in acreage	00	367 acres

The table shows that the farmers earned Rs. 2.52 lakh more through seed production than if they go for general grain production. Moreover, due to this programme 367 acres of land have been brought under improved cultivar of Soybean benefiting 284 farmers.

#### Horizontal spread of seed

The seed village concept has been continued at adjoining five villages during the year Kharif-2012.

Year	Area covered (Acres)	Farmers covered (Nos)	Seed produced (qt)
Kharif-2011	15	12	110
Kharif-2012	367	284	405
Kharif-2013	1350	1028	950
<b>Total</b>	<b>1732</b>	<b>1324</b>	<b>1465</b>

❖ The 950qt. seed would be utilised in khari-2014.

As depicted in the table, the total 405 qt. seed of DS-228 was produced in Kharif-2012. The same seed was utilised by 1028 farmers on 1350 acres of land in Kharif-2013 and produced 950 qt. seed. The quantity 950 qt. seed produced is now available with the farmers and it would be utilised in *Kharif-2014*.

The programme was conducted on 15 acre area among 12 farmers. However, the farmers were supposed to sell out the produce with market rate, they would have benefited twice as expended. Considering the major problem of Soybean growers, they have been motivated for seed production programme and get benefited more than thrice. The major outcome of the programme is the ample of quality foundation seed of DS-228 cultivar available with subsidized rate and cultivated on 367 acre area. This programme is also supported by Front Line Demonstration on various cultivation aspects. The results and feedback of the Soybean growers in previous year FLD were used to successful implementation of the programme. Krishi Vigyan Kendra has encouraged to enhance production of seed towards meeting the objective of food and nutritional security.