

Research Paper :

Constraints and suggestions of soybean growers in adoption of soybean production technology

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ABSTRACT

The productivity of soybean is far behind than other major soybean growing countries. Looking to this fact, the present study was undertaken on a purposive sampling of 109 soybean growers of Khadak Malegaon Village of Niphad tahsil of Nashik District with the objectives to study the personal and socio-economic profile of soybean growers and to ascertain the level of adoption and to invite constraints and suggestions of soybean growers. According to the study, it was revealed that majority of the soybean growers (58.71 per cent) were of middle age (26 to 45 years) group, received formal education up to higher secondary and diploma level, possessed medium size of land holding between 4.01 to 7.00 acres. Majority of the soybean growers (49.54 per cent) had medium farming experience *i.e.* 9 years to 17 years, having medium social participation group (*i.e.* score between 3 to 4) and medium annual income (Rs. 75,551 to Rs. 1,50,765/-). The major constraints reported by the soybean growers were insufficient irrigation sources, high cost of compost and chemical fertilizers, low price of soybean crop in market and fluctuation in market rate, lack of knowledge about pest and diseases control measures and seed processing. It was observed that majority (60.55 per cent) of the soybean growers suggested for timely guidance of pest and diseases control measures should be provided and 49.54 per cent of the respondents suggested for high price of soybean crop in market should be obtained.

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Soybean has attained great importance as a pulse and oilseed crop because of its nutritional and industrial value. In India, the soybean occupied an important place in case of getting more foreign exchange from the export of soya powder due to its greater demand in international market. As a food item, soybean products are great significance to India, since the Indian diet is predominantly vegetarian and deficient in protein. Soybean has the potentiality to make significant contribution to fill the widening gap in the availability of edible oil in the country and has now emerged as an important oilseeds crop with a potential to narrow down the oil and protein gap. Besides edible oil, soybean produces deoiled flour, which contains high percentage of protein ranging between 44-60 per cent. Soybean is getting prominence in the new cropping pattern because of its higher price and less input requirement as compared to other crops. Soybean has an ability to grow in adverse ecological environment. It can grow well in a variety of soil conditions including heavy black cotton soils. It can also grow successfully under rainfed conditions on upland and sloppy land as it

withstands a temporarily dry spell. Soybean crop is also helpful to improve soil condition especially for adding nitrogen as it fixes atmospheric nitrogen at the rate of 150-200 kg/ha and leaves 50 kg residual nitrogen per hectare, which may be available to the next growing crops.

It is always observed that there is huge gap between the recommended crop production technologies and farmers' practice. All the farmers do not adopt the recommended crop production technologies. Socio-economic and other behavioral aspects of farmer might be influencing the adoption of crop production technologies. Farmers might be facing certain constraints particularly securing of input and marketing of soybean. With this background the present investigation is focused towards these aspects.

METHODOLOGY

This study was conducted in Khadak Malegaon village of Niphad tahsil of Nashik district. Krishi Vigyan Kendra, Nashik implemented the front line demonstration on soybean production technology at Khadak Malegaon

for four years, was one of the reason of purposively selection of this village. Secondly, Khadak malegaon was having largest agricultural land in Niphad tahsil and one of the major soybean growing village. There fore, looking toward variable soil pattern and importance of the soybean growing area Khadak Malegaon village was purposively selected for the present study. The present study involved 109 soybean growers were selected purposively.

RESULTS AND DISCUSSION

The results of the present study as well as relevant discussion have been summarized under following heads:

Personal profile:

The data on personal profile were sought, computed, presented and discussed in Table 1.

From the Table 1, it is revealed that 58.71 per cent soybean growers were of middle age (26 to 45 years) group. Most of the soybean growers (46.79 per cent) had received formal education up to higher secondary and diploma level. About holding, the soybean growers (49.54 per cent) possessed medium size of land holding. Most of the soybean growers (49.54 per cent) had medium farming experience *i.e.* 9 years to 17 years. Regarding social partition, 63.30 per cent of the soybean growers were found in medium social participation group (*i.e.* score between 3 to 4). Most of the soybean growers (71.56 per cent) had medium annual income (Rs. 75,551 to Rs.1,50,765 /-); followed by those having high (11.01 per cent) and low (17.43 per cent) annul gross income. It was revealed that the majority (65.14 per cent) of the respondents had fragmentation of land holding to 'medium' extent; while remaining respondents were distributed in 'low' (21.10 per cent) and high (13.76 per cent) land fragmentation categories.

Constraints faced by soybean growers:

Constraints are circumstances or causes, which prohibit the farmers to adopt improved farm technology. The thrust of present investigation was to know what and why the farmers do not adopted the part of soybean practices and what are the circumstances that prohibit farmers in adopting soybean production practices.

Constraints faced by the soybean growers in adoption are presented and discussed in the four major aspects as bellow.

Supply constraints:

The Table 2 revealed that majority (62.38 per cent) of the respondents faced the problem of insufficient irrigation sources and 28.44 per cent of the respondents

Table 1 : Distribution of soybean growers according to their personal profile (n=109)

Particulars	No. of respondents (n = 109)	Percentage
Age (years)		
Young (Up to 25 Years)	34	31.20
Middle (26 to 45 Years)	64	58.71
Old (46 years and above)	11	10.09
Total	109	100.00
Education		
Illiterate (having no formal education)	05	04.59
Primary education (up to 4 th Std.)	13	11.93
Secondary education (5 th to 10 th Std.)	22	20.18
Higher secondary and diploma (11 th to 12 th Std. and Diploma)	51	46.79
Higher education (up to graduation and above)	18	16.51
Total	109	100.00
Size of land Holding (Acre)		
Small Holding (up to 4.00 acres)	33	30.28
Medium holding (4.01 to 7.00 acres)	54	49.54
Large holding (7.01 to above acres)	22	20.18
Total	109	100.00
Farmer Experience (years)		
Low (up to 8 years)	10	09.17
Medium (9 years to 17 years)	54	49.54
High (18 years and above)	45	41.29
Total	109	100.00
Social participation category		
Low (Score up to 2)	27	24.77
Medium (Score between 3 to 4)	69	63.30
High (score 5 and above)	13	11.93
Total	109	100.00
Annual Income (Rs.)		
Low (up to Rs.75,550/-)	19	17.43
Medium (Rs. 75,551 to Rs.1,50,765 /-)	78	71.56
High (Above Rs. 1,50,765/-)	12	11.01
Total	109	100.00
Land Fragmentation (Index)		
Low (up to 1.05)	23	21.10
Medium (1.06 to 1.16)	71	65.14
High (1.16 and above)	15	13.76
Total	109	100.00

faced the constraints regarding non-availability of insecticides and pesticides in time. Besides this other

constraints faced by the respondents were, timely unavailability of chemical fertilizer and FYM, lack of availability of improved varieties in time, shortage of labour and lack of improved tools.

Economic constraints:

It is seen from the Table 2 that majority (37.61 per cent) of the respondents faced the constraint in respect of high cost of compost and chemical fertilizers, followed by 34.86 per cent, 31.19 per cent and 28.44 per cent of the respondents faced the constraints in respect of timely unavailability of credit from co-operatives, lack of credit

supply from banks and paucity of capitals, respectively.

Besides these main economic constraints, other minor constraints faced by the respondents were, high rates of labour wages, high price of seed and heavy cost of transportation.

Marketing constraints:

It is said that today's market is the 'buyers market'. Farmers have to sale their products as per the price dictated by the market. Sometimes farmers suffer very much losses in spite of their good quality product hence low prices of soybean crop in the market and fluctuations

Table 2 : Distribution of respondents according to the constraints faced by them in adoption of cultivation practices recommend for soybean

Sr. No.	Constraints perceived	Frequency	Percentage
1	Supply constraints		
	Lack of improved varieties	18	16.51
	Chemical fertilizer and FYM are not available in time	14	12.84
	Insufficient irrigation sources	68	62.38
	Insecticides and pesticides are not available in time	31	28.44
	Shortage of labour	13	11.93
	Lack of improved tools	07	06.42
2	Economic constraints		
	Lack of credit supply from Banks	34	31.19
	Paucity of capital	31	28.44
	Credit from co-operatives are not available at the time	38	34.86
	High rates of labour wages	20	18.35
	High prices of seed	26	23.85
	High cost of compost and chemical fertilizers	41	37.61
	Heavy cost of transportation	14	12.84
3	Marketing constraints		
	Fluctuation in market rates	46	42.20
	Low price to soybean crop	54	49.54
	Lack of market price information and its politics	08	07.34
	Lack of storage facilities	18	16.51
	Lack of transportation facilities	11	10.09
	Lack of knowledge about export facilities	06	05.51
	High charges by commission agents	32	29.36
4	Technical constraints		
	Lack of knowledge about availability of seed	10	09.17
	Problem about germination	09	08.26
	Lack of complete knowledge about sowing methods	06	05.50
	Lack of knowledge about pre-tillage (how and when)	03	02.75
	Lack of knowledge about seed processing	62	56.88
	Lack of knowledge about use of compost and chemical fertilizer	13	11.3
	Lack of knowledge about pest and diseases control methods	64	58.72
	Lack of knowledge about intercropping	24	22.02
	Lack of knowledge about harvesting	06	05.50
	Lack of knowledge about threshing	10	09.17
	Lack of scientific knowledge about storage	12	11.01

Table 3: Distribution of soybean growers according to suggestions given by them

Sr. No.	Suggestions given by the respondents	Frequency (n=109)	Percentage
1.	Timely supply of genuine variety at reasonable rate	29	26.60
2.	Availability of timely and sufficient credit from bank and co-operative institution at low interest rate in time	40	36.70
3.	Chemical fertilizers and FYM should be made available in time	15	13.76
4.	Insecticides and pesticides be made in time and at reasonable rate	29	26.60
5.	Chemical fertilizers should be made available at subsidized rates	45	41.28
6.	Timely guidance for the application of manures and fertilizer be rendered	13	11.93
7.	Timely guidance for pest and disease control measures be provided	66	60.55
8.	Timely guidance for intercropping should be provided	23	21.10
9.	High price for soybean crop should be obtained	54	49.54
10.	Storage facilities should be provided	19	17.43

in market rates is also a main constraint reported by (49.54 per cent and 42.20 per cent) of the respondents, respectively.

Market facilities along with a proper marketing strategy helps the soybean growers to fetch good prices for their product. Commission agents play a role of a middleman between the soybean growers and the buyers. Higher charges levied by them were one of the constraints reported by (29.36 per cent) of the respondents. This reduces the share in the consumer price and hence, the farmers are not getting the lion's share for their whole season efforts.

Besides these, other constraints faced by the respondents were lack of knowledge of market price information and its policies, lack of storage facilities, lack of transportation facilities and lack of knowledge about export facilities.

Technical constraints:

The majority (58.72 per cent) of the respondents faced the constraint in respect of lack of knowledge about pest and disease control measures, followed by (56.88 per cent and 22.02 per cent) of the respondents faced the constraints in respect of knowledge about seed processing and lack of knowledge about intercropping and rotations, respectively.

Other constraints reported by the respondents were lack of knowledge about availability of seed in time, problem about germination, lack of complete knowledge about sowing method, lack of knowledge about pretillage, lack of knowledge about use of compost and chemical fertilizer, lack of threshing and lack of technical knowledge about storage.

Suggestion of soybean growers

Considering the constraints faced by the respondents,

they were asked to suggest the probable solutions in order to overcome the constraints and to increase the production and productivity of soybean. The data regarding suggestions are presented in Table 3.

It was observed that majority (60.55 per cent) of the respondents suggested for timely guidance for pest and diseases control measures at appropriate time.

Then, 49.54 per cent of the respondents suggested for high market price of soybean crop in market should be obtained. Chemical fertilizers should be made available at subsidized rates was a suggestion given by 41.28 per cent of the respondents. Regarding timely and sufficient credit supply from bank and co-operatives at low interest rate has also been suggested by 36.70 per cent of the respondents. Timely availability of insecticides and pesticides at reasonable rate was suggested by 26.60 per cent of the respondents.

Besides this, other suggestions made by respondents were timely supply of genuine variety at reasonable rate, timely applicability of FYM and chemical fertilizer, timely guidance for application of manures and fertilizers, timely guidance for intercropping and provision of shortage facilities. Kolte (2002) and Kulhal (2004) have also conducted some investigations on culfiration practices of chilli and guava, respectively.

Conclusion:

It was observed that most of the soybean growers (58.71 per cent) were of middle age (26 to 45 years) followed by younger (31.20 per cent) age group. Most of the soybean growers (46.79 per cent) had received formal education up to higher secondary and diploma level. As regarding holding, the soybean growers (49.54 per cent) possessed medium size of land holding between 4.01 to 7.00 acres. The soybean growers (49.54 per cent) had

medium farming experience *i.e.* 9 years to 17 years. Majority of the soybean growers (63.30 per cent) were found in medium social participation group (*i.e.* score between 3 to 4). Majority of the soybean growers (71.56 per cent) had medium annual income (Rs. 75,551 to Rs.1, 50,765 /-), followed by those having high (11.01 per cent) and low (17.43 per cent) annual gross income. It is revealed that the majority (65.14 per cent) of the respondents had fragmentation of land holding to 'medium' categories.

Considering supply constraints, it was observed that majority (62.38 per cent) of the soybean growers faced the problem of insufficient irrigation sources. In case of economic constraints majority (37.61 per cent) of the respondents faced the constraint in respect of high cost of compost and chemical fertilizers. Regarding market constraints, low prices of soybean crop in the market and fluctuations in market rates was also a main constraint reported by (49.54 per cent and 42.20 per cent) of the respondents, respectively, while it was noticed that majority (58.72 per cent) of the respondents faced the constraint in respect of lack of knowledge about pest and disease control measures in technical constraints. It was observed that majority (60.55 per cent) of the soybean growers suggested for timely guidance for pest and

diseases control measures should be provided and 49.54 per cent of the respondents suggested for high price of soybean crop in market should be obtained.

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