Study on adoption behaviour of respondents regarding soybean cultivation in Satna district of Madhya Pradesh

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Abstract: *Soybean (Glycine max) belongs to family Leguminosae. Soybean is known as "golden bean", "miracle crop" etc. The present study was carried out at unchehara block of satna district, Madhya Pradesh, which was selected purposively for the study on the basis of large area and production. The total sample size was 120 Soybean growing farmers selected from 6 villages. Characteristics of soybean growers like age, education, land holding, annual income, farming experience and other implements, innovative proneness , scientific orientation, risk orientation, mass media exposure and adoption behavior. It was observed that majority of soybean growers had medium adoption behavior.*

Keywords: *Adoption behaviour, Soybean, Respondents.*

1. INTRODUCTION:

Soybean (Glycine max) belongs to family Leguminosae. Soybean is known as "golden bean", "miracle crop" etc, because of its several uses, It is an excellent source of protein and oil. It is mainly grown in kharif season. It contains good quality protein (43%), carbohydrate (21%), mineral (5%), moisture (8%), fat (20%), fibre (4%) and reasonable amounts of vitamins. Soybean being highly protein rich crop and concomitantly required high amount of nitrogen for producing the high yield as well as protein. However, the biological fixation of atmospheric Nitrogen (rhizobium japonicum) by the soybean plant makes it one of the unique crops grown in the world. The maximum N fixation was observed at starter dose of 20 to 30 kg N per ha.

In Madhya Pradesh soybean is popular cash crop giving pronounced yield and profit where other kharif crops are not able to give sustainable yield and economic viable. Due to suitable agro-climatic condition and better price, soybean crop gets prominence in the cropping pattern of the cultivator of Madhya Pradesh. In Madhya Pradesh 5010 thousand hectares area was found under soybean with the total production of 4200 thousand tonnes and average productivity of 838 Kg. per hectare in the year of 2017. Madhya Pradesh is the largest soybean producer state in India.

2. LITERATURE REVIEW:

Sharma *et al.* (2005) reported that the majority of soybean growers (71.00%) had moderate level of adoption, while (16.67%) and (12.72%) had low and high level of adoption, respectively.

Lokhande (2007) concluded that majority of soybean growers (63.00%) had medium level of adoption of IPM practices.

Paikra (2008) concluded that majority (52.50%) of the paddy growers were in medium adoption category of Integrated Pest Management.

3. MATERIALS AND METHOD:

The study was carried out in Satna district of Madhya Pradesh. The Satna district comprises of 8 blocks i.e. Unchehara, Amarpatan, Sohawal, Maihar Nagod, Majhgwan, Ram nagar, and Rampur baghelan out of which one block i.e. Unchehara was selected purposively for the study because this block having maximum area and production as compared to other blocks of the district. From unchehara block, 08 villages were selected randomly for study purpose. The selected villages were bharri, dadhiya, chackhat, turri, piprokhar, semariha.

For the selection of respondents, a list of soybean growers from each selected village was prepared and from the list, respondent selected from all 06 villages by random sampling method. Thus, 120 soybean respondents constituted the total sample size (n) of the study. Only 12 independent variables have been taken for study and one dependent variable. The scoring was assigned in the order of 3, 2 and 1 respectively. On the basis of total score obtained the categorization was made as low, medium and high.

4. RESULT AND DISCUSSION:

Table no. 01: Distribution of soybean growers according to their adoption level

S. No.	Statement	Fully adopted	Partially adopted	Not adopted

		F	%	F	%	F	%
1	Recommended soybean variety in your area	35	29.16	60	50.00	25	20.83
2	Suitable soil for soybean cultivation	31	25.83	70	58.53	19	15.84
3	Suitable time for sowing soybean crop	37	30.83	59	49.17	24	20.00
4	Seed rate for one hectare is	52	43.33	25	20.83	43	35.84
5	Certified seed of soybean can be obtained from	55	45.83	37	30.83	28	23.34
6	Spacing between plant to row	20	16.66	51	42.50	49	40.84
7	Seed treatment with	19	15.83	64	53.33	37	30.84
8	Required soil ph for soybean crop is	21	17.50	27	22.50	72	60.00
9	Type of manure is required for soybean cultivation is	26	21.66	51	42.50	43	35.84
10	Amount of FYM/ha is	30	25.00	63	52.50	27	22.50
11	Fertilizer supplement for the nutrient is	43	35.83	48	40.00	29	24.17
12	What is optimum dose of fertilizer for soybean cultivation per hectare NPK is	31	25.83	44	36.66	45	37.50
13	Weed are controlled in soybean cultivation of which stage is	35	29.16	56	46.67	29	24.17
14	Application of herbicide for soybean weed is	49	40.83	40	33.33	31	25.83
15	Number of irrigation required for soybean cultivation is	52	43.33	47	39.17	21	17.50
16	Common diseases of soybean is	22	18.33	54	45.00	44	36.67
17	Common pest of soybean is	21	17.50	40	33.33	59	49.17
18	Successful intercropping with soybean is	50	41.66	42	35.00	28	23.34
19	Yield obtained per hectare is	26	21.66	65	54.17	29	24.17

Note:-F = frequency, % = percentage, S. No. = serial number.

As the table 01, revealed the high adoption level of soybean cultivation practices was, certified seed of soybean can be obtained from (45.83%) followed by Seed rate for one hectare is (43.33%), Number of irrigation required for soybean cultivation is (43.33%), Successful intercropping with soybean is (41.66%) Application of herbicide for soybean weed (40.83%), Suitable time for sowing soybean crop (30.83%), Weed are controlled in soybean cultivation of which stage (29.16%), Recommended soybean variety in your area (29.16%), Suitable soil for soybean cultivation is (25.83%), What is optimum dose of fertilizer for soybean cultivation per hectare NPK is (25.83%),respectively. The medium adoption level of soybean cultivation practices was Suitable soil for soybean cultivation (58.53), Yield obtained per hectare is (54.17%), Seed treatment with (53.33%), Amount of FYM/ha is (52.50%), respectively. The low adoption level of soybean cultivation practices was Required soil ph for soybean crop is (60.00%), Common pest of soybean is(49.17%), Spacing between plant to row (40.84%), respectively. Similar findings were also reported **Chaudahari *et al.* (2012),).**

Table no. 02: Distribution of soybean growers according to their adoption level

S. No.	Categories	Frequency	Percentage
1	Low	32	26.66
2	Medium	62	51.67
3	High	26	21.67
	Total	**120**	**100.00**

S. No. = serial number

The data presented in table no. 02 showed that higher percentage of the medium level of adoption 51.67 per cent followed by low level of adoption 26.66 per cent and high level of adoption 21.67 per cent respectively

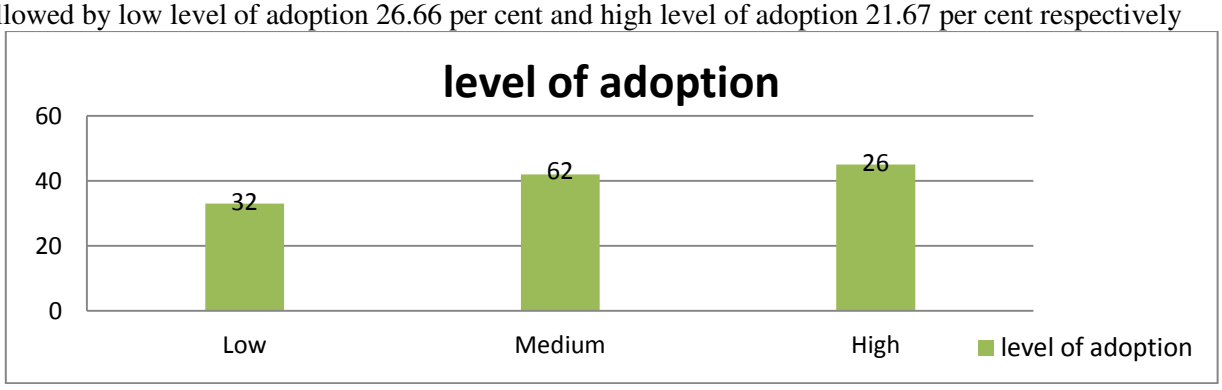

Fig. 01 level of adoption

Table no. 03: Factor associated between independent variable and dependent variable.

association between independent variable of respondents and level of adoption (n=120)		
S. No.	Independent variable	Chi square (χ^2)
1.	Age	09.60 S
2.	Education	07.10 S
3.	Land holding	28.27 S
4.	Annual Income	08.31 S
5.	Innovative proneness	08.89 NS
6.	Scientific orientation	09.00 NS
7.	Mass media exposure	12.90 S

NS= not significant, S = significant, S. No. = Serial number

In this finding the association for age, education and land holding, annual income, mass media exposure was significant; it means there is association occurred. There is not association for innovative proneness and scientific orientation between adoption level of soybean growers. Similar findings were also reported by **chaudhary (2001), Sharma *et al* (2005) and aske (2008).**

5. CONCLUSION:

There was medium adoption level of soybean growers. The findings was medium adoption of suitable soil for soybean cultivation, Yield obtained per hectare, Seed treatment, Amount of FYM/ha, respectively. The low adoption level of soybean cultivation practices was required soil pH for soybean crop, Common pest of soybean, Spacing between plant to row respectively. Similar findings were also reported by **Chaudahari *et al.* (2012)**

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