



P-ISSN: 2349-8528

E-ISSN: 2321-4902

IJCS 2018; SP4: 232-237

Monika Jaiswal

SMS (Ag. Ext.), KVK, Burhanpur,
Madhya Pradesh India

Ajeet Singh

Sr. Scientist & Head, KVK,
Burhanpur, Madhya Pradesh,
India

(Special Issue -4)
**International Conference on Food Security and
Sustainable Agriculture**
(Thailand on 21-24 December, 2018)

**Assessment of applicability, adoption & impact of
soil health card by the farmers in Burhanpur
district of Madhya Pradesh**

Monika Jaiswal and Ajeet Singh

Abstract

The study was conducted in Burhanpur district of Madhya Pradesh during the year 2016-2018. Four villages of Burhanpur block were selected for the study. 30 respondents from each village and totally 120 respondents were selected randomly from the four villages. The data were collected through personal interview method with the help of pre-structured scheduled designed with the objective of finding out applicability, adoption & impact regarding soil health card based fertilizer application in Burhanpur district of M.P. The study revealed that the soil health card play a greater role in reducing the cost of cultivation.

Keywords: Applicability, adoption, impact, soil health and soil health card (shc)

Introduction

Soil is one of the elements required for farming as it provides nutrients to the plant. Soil health plays a vital role to ensure sustainable agricultural production. To popularize soil test based fertilizer usages, soil health card is a tool to help the farmer to monitor and improve soil health based on recommendations and enables the farmer to use the soil and crop specific fertilizers. It provides a qualitative assessment of soil health and reclamation measures to the problematic soil. To protect soil health and for sustainable agriculture, the Government of India launched SHC scheme in February, 2015. A SHC is meant to give each farmer soil nutrient status of his holding and advise him on the dosage of fertilizers and micronutrient and also the needed soil amendments that he should apply to maintain soil health in the long run. The scheme is considered as a holistic measure for soil health and farm economy. A SHC carries crop wise recommendation of nutrients and fertilizer required for the individual farms to help farmers to improve productivity through judicious use of inputs. In this programme, technical guidelines are given on how to collect the soil samples and where to test it. The job of soil testing is done in soil testing labs & mini kit at KVKs across the country. The experts in this line will analyze the strength and weakness (micro-nutrient deficiency) of the soil and suggest measure to deal with and the concerned department will distribute the cards among farmers of each state. In the guidelines, there is also an instruction to devise a mechanism to issue SHC every 3 years in respect of all holdings in order to capture the soil fertility changes occurring due to plant uptake or other natural causes. Awareness on SHC by conducting meetings, trainings, group discussions, sangosthis, exhibition and demonstrations at village level based on the importance of SHC. A study will be conducted to find out the adoption of SHC based fertilizer application in Burhanpur district. Keeping this view in mind, the present study entitled "Assessment of Applicability, Adoption & Impact of Soil Health Card by the farmers in Burhanpur district of Madhya Pradesh" was conducted with the following

Correspondence

Monika Jaiswal

SMS (Ag. Ext.), KVK, Burhanpur,
Madhya Pradesh India

Objectives

- To study the socio profile of beneficiaries.
- To study the knowledge and adoption of SHC.
- To study the usefulness and applicability of SHC.
- To assess the impact of SHC.

Materials and Methods

The study was conducted in Burhanpur district of M.P. 120 respondents were selected randomly from four villages of Burhanpur block, 30 respondents were selected from each selected village. The data were collected through personal interview method with the help of pre-structured scheduled designed with the objective finding out applicability & adoption regarding SHC and to analyze the impact of SHC. To assess the overall impact of technology a device was developed and responses of the respondents were recorded on a four point continuum scale for each aspect and assigned scores. Finally an index was worked out to assess the overall impact of technology with the help of following equation.

$$TI = \frac{O}{S} \times 100$$

Where,

TI = Technology Impact Index of a respondent

O = Total scores obtained by respondent

S = Total obtained score

The data were analyzed by using frequency, mean and percentage.

Result & Discussion

Impact of KMAS on transfer of technology was assessed and being discussed as under:

1. Distribution of the respondent according to their personal and socio economic variables

Table 1 shows that middle age respondents were 45% followed by old aged 30% the least number was observed in case of young age group 25%. The possible reason for this would be that "middle aged" respondents were mostly involved agricultural enterprises while old and young aged respondents had negligible role in agriculture enterprises. This might be due to the fact that old and young age people might have engaged in other occupation and middle age respondents might be counseling and guiding the family members. The finding also confirmation with the finding of Singh & Sharma (1990). 89.17% of the respondents were male where as 10.83% were female. The distribution of the respondents on the basis of their caste shows that 70.84% of the respondents were general, 20.83% OBC and 08.33% of the respondents were ST/SC. The possible reason for this would be that in that area most of the people belonged to upper caste and those some backward caste were migrated from other places. The above table shows that the distribution of the respondents on the basis of education, out of 120 respondents, 14.17% were illiterate, 7.50% can read and write, 6.67% were up to primary school, 19.17% were up to middle school, 24.16% were high

school and intermediate and 28.33% were graduate and above. The possible reason for this would be that, with the change in our society from traditional to modern one, education is more formal, systematically organized and bureaucratized. And in most modern societies it is compulsory. This logically true from this fact that the percentage of literacy is very high in state. This finding also confirming with the finding of Shandilya et.al. (1985). The above data reveals that the distribution of the respondents on the basis of occupation, the majority of the respondents 65% were having agriculture, followed by business 16.67%, 14.16% were having other occupation and only 04.17% were found to be in service category. The possible reason would be that in agriculture and allied service state more than 70% of the people were engaged on agriculture. So, this state is one of them and that's most of the people 65% was found to be in agriculture. The above data reveals that the distribution of the respondents on the basis of occupation, the majority of the respondents 65% were having agriculture, followed by business 16.67%, 14.16% were having other occupation and only 04.17% were found to be in service category. The possible reason would be that in agriculture and allied service state more than 70% of the people were engaged on agriculture. So, this state is one of them and that's most of the people 65% was found to be in agriculture. The below table reveals that, majority of the total respondents 53.33% were having monthly income more than Rs 15,001 followed by 39.17% having monthly income of Rs 10,001-15,000 and 7.50% of the respondents having income even less than Rs 10,000. The below table reveals that, majority of the total respondents 53.33% were having large family size which was followed by medium 39.17% only 7.50% of the respondents to small family. It shows that out of 120 farmers, 56.67% of the respondents were found to be in the joint family and 43.33% were found to be in the nuclear family. The reason may be that the family might not be broken after marriage of their sons because of their low size of holding. The finding also with the confirming with the finding of Biswas *et al.* (1978). It shows that out of 120 farmers, 56.67% of the respondents were found to be in the joint family and 43.33% were found to be in the nuclear family. The reason may be that the family might not be broken after marriage of their sons because of their low size of holding. The finding also with the confirming with the finding of Biswas *et al.* (1978). The above data indicates that 43.33% of the farmers live in mixed house. 35.83% in pacca and 20.83% in kachcha house. The above table reveals that 43.33% of the respondents having medium size of land holding. 35.83% have small and 20.83% were having large size of holding. This finding also confirming with the finding of Prasad & Siddharamaiah (1999). The data of the given below table shows that 65.83% farmers having an experience of 5-10 years followed by 17.50% having less than of 5 year's experience whereas 16.67% respondents having an experience even more than 10 years.

Table 1: Distribution of the respondent according to their personal and socio economic variables

S.No.	Particulars	Category	Frequency (No)	Percentage (%)	Rank		
1.	Age (yrs.)	Young (20 - 35)	30	25.00	III		
		Middle (35 - 50)	54	45.00	I		
		Old (50 & above)	36	30.00	III		
2.	Gender	Male	107	89.17	I		
		Female	13	10.83	II		
3.	Caste	General	85	70.84	I		
		OBC	25	20.83	II		
		SC/ ST	10	8.33	III		
		Illiterate	17	14.17	IV		
4.	Education	Read & Write	09	07.50	V		
		Primary School	08	06.67	VI		
		Middle School	23	19.17	III		
		Intermediate	29	24.16	II		
		UG/ PG	34	28.33	I		
		5.	Occupation	Agriculture	78	65.00	I
				Service	05	04.17	IV
Business	20			16.67	II		
Other	17			14.16	III		
6.	Monthly Income (Rs.)			Below 10,000	09	07.50	III
		10,001 -1 5,000	47	39.17	II		
		15,001 & above	64	53.33	I		
7.	Family Size	Small (<= 5)	09	07.50	III		
		Medium (5 - 10)	47	39.17	II		
		Large (> 10)	64	53.33	I		
8.	Type of House	Kachcha	25	20.83	III		
		Pacca	43	35.83	II		
		Mixed	52	43.33	I		
9.	Land Holding Size (ha.)	Small (<= 2)	43	35.83	II		
		Medium (2.1 - 4)	52	43.33	I		
		Large (>= 4.1)	25	20.83	III		
10.	Farming Experience (yrs.)	Low (<=5)	21	17.50	II		
		Medium (5-10)	79	65.83	I		
		High (>=10)	20	16.67	III		

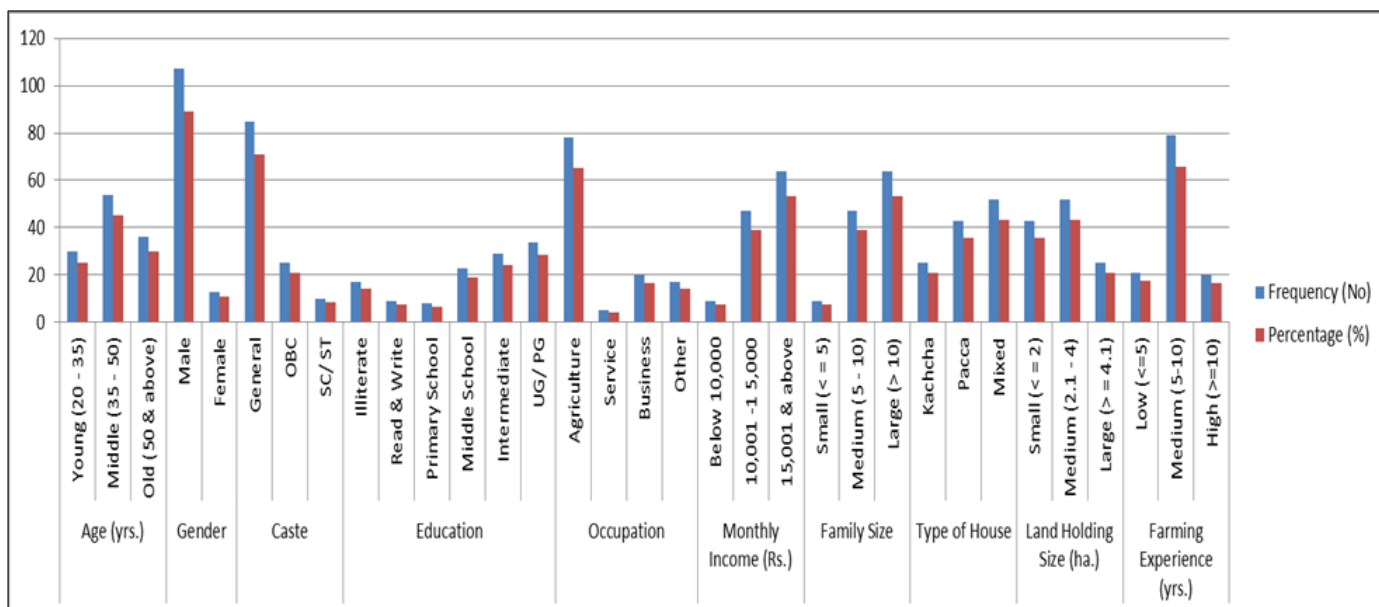


Fig 1

2. Distribution of the respondent according to their knowledge about SHC

The result obtained in the given Table 2 indicates that the respondent having higher level of knowledge i.e. 80.83%

about soil health card followed by medium 16.67% and lower 2.50% level. This finding also confirming with the finding of Mohapatra and Kameswari(2014) [6].

Table 2: Distribution of the respondent according to their Knowledge about SHC

S.No	Particulars (Score)	Frequency (N=120)	Percentage (%)	Rank
1	Low (1.0-4.0)	03	02.50	III
2	Medium (4.1-7.0)	20	16.67	II
3	High (7.1-10)	97	80.83	I
Total		120	100.00	

3. Distribution of the respondent according to their understanding about SHC

The table 3 reveals that 68.33% farmers having high understanding about soil health card where as 27.50% were

having medium and 4.17% were low understanding. This finding also confirming with the finding of Srivastava *et al.* (1999) ^[11] & Asthana *et al.* (2008).

Table 3: Distribution of the respondent according to their understanding about SHC

S.No	Particulars (Score)	Frequency (N=120)	Percentage (%)	Rank
1	Low (1.0-4.0)	05	04.17	III
2	Medium (4.1-7.0)	33	27.50	II
3	High (7.1-10)	82	68.33	I
Total		120	100.00	

4. Distribution of the respondent according to applicability of SHC

As per the applicability of message is concerned, the data presented in Table 4 shows that message was fully applicable for about 50.83% followed by 19.17% partially applicable, 16.67% medium and only 13.33% were not applicable. This

indicates that the farmers were satisfied with content of the information and practically implementable to them. This finding also confirming with the finding of Yadav *et al.* (2006) ^[13] & Anonymous. 2015 ^[2].

Table 4: Distribution of the respondent according to applicability of SHC

S.No	Particulars (Score)	Frequency (N=120)	Percentage (%)	Rank
1	Not (0-2.0)	16	13.33	IV
2	Low (2.1-4.0)	23	19.17	II
3	Medium (4.1-7.0)	20	16.67	III
4	High (7.1-10)	61	50.83	I
Total		120	100.00	

5. Distribution of the respondent according to overall usefulness of SHC

It could be noted from Table 5 that 50.83% farmers apply fertilizer according to soil health card followed by 19.17%

and 16.67% farmers sometimes apply fertilizer as on soil health card and only 13.33% were never use soil health card for fertilizer dose. This findings was similar to findings reported by Supe *et al.* (1969) ^[12] & Chowdary RK. (2015) ^[3].

Table 5: Distribution of the respondent according to overall usefulness of SHC

S.No	Particulars (Score)	Frequency (N=120)	Percentage (%)	Rank
1	Low (1.0-4.0)	00	00.00	III
2	Medium (4.1-7.0)	68	56.67	I
3	High (7.1-10)	52	43.33	II
Total		120	100.00	

6. Distribution of the respondent according to adoption of SHC

It could be noted from Table 6 that 77.50% farmers adopt soil health card where as 22.50% farmers were only sometimes

adopt soil health card. This findings was similar to findings reported by Chowdary and Theodore (2016) [4].

Table 6: Distribution of the respondent according to adoption of SHC

S.No	Particulars (Score)	Frequency (N=120)	Percentage (%)	Rank
1	Low (1.0-4.0)	00	00.00	III
2	Medium (4.1-7.0)	27	22.50	II
3	High (7.1-10)	93	77.50	I
Total		120	100.00	

7. Distribution of the respondent according to overall impact of SHC

The Table 7 indicates that technology imposes high impact on found the information on soil health card was useful. 80.83% farmer’s income was increased 77.50% farmer’s yield were increased and 77.83% farmer’s cultivation cost were decreased. Similar results were found by Jaiswal *et al.* (2018) [5].

Table 7: Distribution of the respondent according to impact of SHC on cultivation cost, production & income

Indicators	High			Medium			Low		
	Freq.	%	Rank	Freq.	%	Rank	Freq.	%	Rank
Cultivation Cost Decreased	91	75.83	I	24	20.00	II	05	04.17	III
Yield Increased	93	77.50	I	20	16.67	II	07	05.83	III
Income Increased	97	80.83	I	21	17.50	II	02	01.67	III

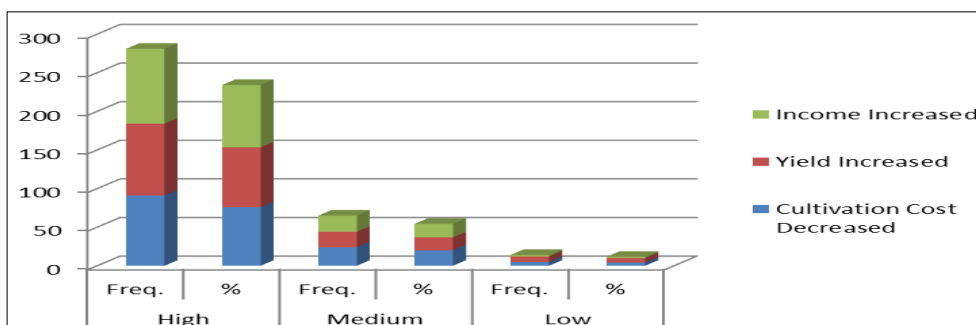


Fig 2

8. Distribution of the respondent according to impact of SHC

The Table 8 indicates that technology imposes high impact 65% followed by medium impact 25.83% and low 20.00%

only. Similar results were found by Pagaria (2011) [8], Patel & Chauhan (2012) [9], Patidar & Patidar (2015) [10] and Mukati (2016) [7]

Table 8: Distribution of the respondent according to impact of SHC

S. No	Particulars (Scores)	Frequency (N=120)	Percentage (%)	Rank
1	Less Impact	24	20.00	III
2	Medium Impact	31	25.83	II
3	High Impact	65	54.17	I
Total		120	100.00	

Conclusion

The study indicate that SHC is one of the most useful tool for the farmers and also can play a greater role in reducing cost of cultivation. Result of study shows that SHC were highly useful and having high impact on production and income.

Thus, SHC was found very effective to optimize the integrated use of manures and fertilizers and to reduce cost of cultivation it is necessary to test the soil and issue Soil Health Cards to farmers, with the ultimate objective of achieving Fertile Soils and Healthy Crops. It provides a qualitative

assessment of soil health and reclamation measures to the problematic soil.

References

1. Asthana A, Kumar S. Soil health and sustainable crop production: adoption and awareness of soil testing. *Journal of Sustainable Agriculture*. 2008; 32(2):303-320.
2. Anonymous. District Census Hand Book, Tikamgarh, 2015, 14-15.
3. Chowdary RK. Factors determining the use of soil health card (SHC) recommendation is Kurnool district of Andhra Pradesh. Department of Agricultural Extension SVA College, Tirupati, 2015. Retrieved from http://www.cgg.gov.in/pdf_agri_inter_raghavendra.pdf on 30/10/15.
4. Chowdary KR, Theodore RK. Soil Health Card Adoption Behaviour among Beneficiaries of Bhoochetana Project in Andhra Pradesh. *Journal of Extension Education*, 2016, 28,.
5. Jaiswal M, Singh A, Singh K, Mustafa M, Singh B. A Comparative Study on Impact of ICT (KMAS) and Social Media (Whats App) on Transfer of Agricultural Technologies for Development of Farming Community. *International Journal of Current Microbiology and Applied Sciences* ISSN: 2319-7692. 2018; 7:208-217.
6. Mohapatra L, Kameswari VLV. Knowledge level of soil management practices and their adoption by farmers of Odisha. *International Journal of Farm Sciences*. 2014; 4(4):240-246.
7. Mukati A. Farmers' perception regarding soil health card- A study in Tikamgarh district of Madhya Pradesh. M.sc. (Ag.) Thesis. Department of Extension Education, College of Agriculture, Tikamgarh, JNKVV Jabalpur, M.P, 2016.
8. Pagaria P. Knowledge and attitude of small and marginal farmers towards soil testing. *Journal of Advances in Developmental Research*. 2011; 2(2):171-173.
9. Patel JK, Chauhan NB. Attitude of farmers towards soil health card (SHC) programme. *Asian J. Soil Sci*. 2012; 7(1):114116.
10. Patidar S, Patidar H. A study on perception of farmers towards organic farming. *International journal of application or innovation in engineering & management (IIAEM)*. 2015; 4(3):269-277.
11. Srivastava YC, Pandey AP. Knowledge and Attitude of Small and Marginal Farmers towards Soil Testing. *Agricultural Extension Review*. 1999; 11(6):3-6.
12. Supe SV, Singh SN. Economic motivation scale, risk preference scale and scientific orientation scale. Measurement in extension- Research instruments developed at IARI, Division of extension, New Delhi, 1969.
13. Yadav VPS, Raman RS, Kumar R. Knowledge and Attitude of Farmers towards Soil Testing Practices. *Indian Research Journal of Extension Education*. 2006; 6:3.