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Farmer's perception regarding soil health card

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Abstract

Injudicious and haphazard use of chemical fertilizer in agriculture is a matter of concern in recent times. To avoid deterioration of soil in long run and visualizing the importance of balance nutrient in crop production. The soil health card (SHC) provides soil health data to get appropriate guidance to the farmers for the efficient use of fertilizer to cultivate crops based on soil health analysis. The SHC is a simple document, which contains useful data on soil based on chemical analysis of the soil to describe soil health in terms of its nutrient availability and its physical and chemical properties. The soil health card is made available online also for the farmers. To understand the feelings of the farmers against this system, there is an urgent need to study the degree of positive or negative disposition associated with farmer towards the usefulness and application of soil health card. Thus the present study on farmers' perception regarding soil health card was undertaken. The study was conducted in three blocks of Tikamgarh district with 117 soil health card holders. The findings revealed that majority of the farmers were having knowledge and understanding about the utility of soil health card. The findings further reveals that maximum number of soil health card holders were having favorable attitude towards soil health card followed by less favorable and most favorable attitude towards soil health card. Among constraints, difficulty in calculating fertilizer dose on the basis of nutrient status of soil was the major constraint faced by majority of the respondents.

Keywords: Soil health card, perception

Introduction

Soil health is not a new concept. Greek and Roman philosophers were aware of the importance of soil health to agricultural prosperity over 2000 years ago, and reflected this awareness in their treatises on farm management. As the science of agriculture developed, plant nutrients were identified as essential components of soil health, at least with respect to sustaining biological productivity. This resulted in a paradigm of plant nutrition and soil management that relied heavily on the use of artificial fertilizers and intensive tillage. Increasing concern over agriculture's impact on the environment has created renewed interest in soil health. Efforts to define soil health in the context of multiple soil functions began in 1977 (Warkentin and Fletcher, 1977) ^[10], and were followed by more formalized definitions (Larson and Pierce, 1991; Karlen *et al.*, 1997) ^[7], selection of indicators (Doran and Parkin, 1994) ^[4], and specific strategies to enhance soil health (Doran *et al.*, 1996) ^[5]. Soil fertility is largely maintained by the application of compost and manure, but in recent years a decline in soil fertility has been reported (Shrestha *et al.*, 2000) ^[9].

To overcome declining output resulting from decreasing soil fertility and productivity, farmers need to improve their production techniques. The decision to participate in new agricultural technologies depends on farmer's perception which is a key determinant in influencing adoption (Negatu and Parikh, 1999; Adesina and Baidu-Forson, 1995) ^[8, 1]. Technology adoption is also influenced by perceived profitability, costs of the technology and clarity at which the new knowledge and information is communicated in a recipient population (Boahene *et al.*, 1999) ^[3]. Farmers' perceptions regarding compatibility of sustainable practices with their farming systems have emerged as the best predictor of adoption of such practices (Alonge and Martin, 1995) ^[2]. Since perception refers to an individual's current appraisal of an object or program, assessing farmers' perceptions is an important means to evaluate their knowledge level on a particular issue (Hikson and Keith, 2000) ^[6]. People base their perceptions on past experience and knowledge thus; if a person has limited knowledge and experience about a technology then he cannot accurately perceive it or form an opinion on it. Keeping this in mind the present study entitled "Farmers' perception regarding soil health card" was conducted.

Methodology

The present investigation was carried out in Tikamgarh district of Madhya Pradesh. From Tikamgarh district three blocks i.e. Tikamgarh, Niwari and Prithvipur were selected purposively because of having maximum number of soil health card holders. As per the list provided by soil testing laboratory of Department of Farmers Welfare and Agriculture Development, Tikamgarh in the month of October, the three blocks i.e. Tikamgarh, Niwari and Prithvipur were having 100, 68 and 66 number of soil health card holders, respectively. For selection of respondent systematic random sampling method was used. From each block, every 2nd soil health card holder was selected as respondents. So, in all 117 soil health card holders were investigated to collect the data. Thus, selected sample was comprised of 117 soil health card holders.

S. No.	Block	Soil health card holder	Respondents selected
1.	Tikamgarh	100	50
2.	Niwari	68	34
3.	Prithvipur	66	33
Total		234	117

Results and Discussion

1. Awareness level regarding soil health card:-

To find out the awareness level regarding soil health card, respondents were asked some question such as from where did they get the information about soil health card, do they have soil health card, what is the procedure to make soil health card, how this soil health card is beneficial for them, what do they understand by pH, what is the type of their soil

and many such question. After analysis of the data it was found that out of 117 respondents, 81.19 per cent of the respondents were aware about the utility of soil health card made by the Department (Table 1(a)).

Table 1(a): Distribution of respondents according to their awareness about utility of soil health card

S. No.	Response	Soil health card holder (N=117)	
		Frequency	%
1.	Yes	95	81.19
2.	No	22	18.81

Table 1(b) further reveals that, out of 81.19 per cent of soil health card holders, majority of the respondents i.e. 55.66 per cent get the information regarding soil health card from the RAEO followed by KVKs (21.36%), friends/ neighbor/relatives (12.83%) and from other sources (10.25%). For making soil health card, 68.42 per cent respondents contacted the 'RAEO' whereas 15.79 per cent contacted Agriculture Department and Soil Testing Laboratory for the said purpose. Regarding adoption of information provided in the soil health card, 47.38 and 15.79 per cent respondents adopted information related to the use of fertilizers and nutrient management whereas 31.58 per cent respondents responded that they very rarely refers the information given in the soil health card. On further analysis, it was found that majority of the respondents 81.05% were aware about the type of their soil and pH level and agree that soil health card helped them in management of soil, increase in productivity and reduction in extra expenditure (18.95%).

Table 1(b): Distribution of soil health card holder according to their responses regarding soil health card (n= 95)

S. No.	Categories	%	
1.	Source of Information	RAEO	55.66
		KVK	21.36
		Friends/neighbor/Relative	12.83
		Other	10.25
2.	Person Contacted for making soil health card	RAEO	68.42
		Agricultural Department	15.79
		Soil Testing laboratory	15.79
3.	Adoption of information provided in soil health card	Frequently	47.38
		Occasionally	15.79
		Rarely	31.58
		Never	5.25
4.	Aware about the type of soil & pH level and its usefulness	Yes	81.05
		No	18.95

2. Perception of farmers regarding soil health card

To measure the perceived favorableness regarding soil health card the respondents were asked to rate the agreement on three point continuum i.e. agree, undecided and disagree. Figure 1 shows the agreement of respondents regarding soil health card. It is evident from the figure that 76.07 per cent of the respondent were 'agree' to the statement that "Soil health card provides information regarding the status of micro-nutrients in the soil" followed by 'undecided' (21.37%) and 'disagree' (2.56%). Regarding the statement "Soil health card provide corrective measures a farmer should take for improved soil health and for better yield", 72.65 per cent of the respondents were 'agree' with the statement followed by 'undecided' (23.08%) and 'disagree' (4.27%).

As far as the statement "There is no need of such card as farmers themselves are practicing agriculture in a

better way" is concerned 58.12 per cent of the respondents were 'undecided' followed by 'agree' (35.04%) and 'disagree' (6.84%). The statement "Soil health card helps farmers in reducing extra expenditure by supplying required nutrients in the soil" was agreed by 70.94 per cent of the respondents followed by 'undecided' (25.64%) and 'disagree' (3.42%).

Further the statement "Soil health card is of no use until the required input should be provided by the government" was agreed by 50.43 per cent followed by 'undecided' (45.29%) and 'disagree' (4.27%). About 60 per cent of the respondent were undecided about the statement that "There is too much information in soil health card and all of them are of no use" followed by 'agree' (21.37%) and 'disagree' (18.80%). Regarding the statement "It is not possible to follow all the recommendation as mentioned in soil health card", 64.11 per

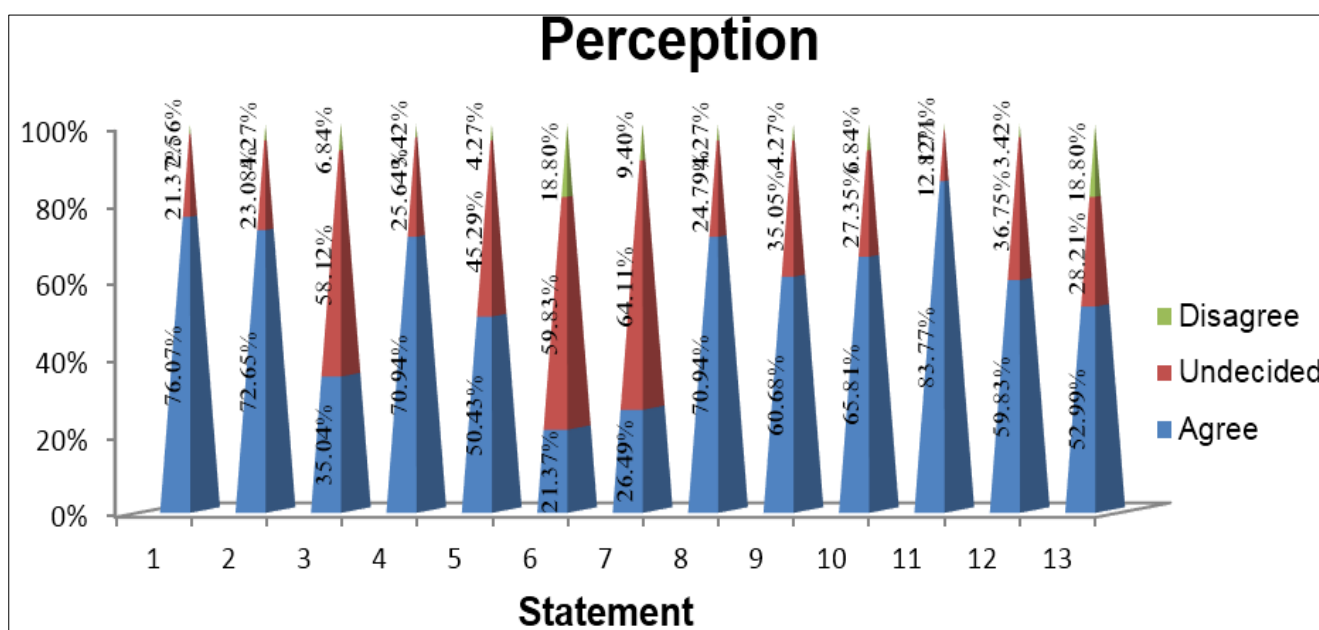
cent of the respondents were ‘undecided’ regarding the statement followed by ‘agree’ (26.49%) and ‘disagree’ (9.40%).

As far as the statement “The soil health card helps the farmers to get an idea on the crop wise recommendation of nutrients and fertilizers required in each type of soil” is concerned, the percentage of respondents who agreed to the statement was 70.94 followed by ‘undecided’ (24.79%) and ‘disagree’ (4.27%). Regarding the statement “Soil health card can be helpful and effective only if the recommendations are followed by farmers on regular basis” 60.68 per cent of the respondents expressed their agreement followed by ‘undecided’ (34.04%) and ‘disagree’ (4.28%).

About sixty five per cent of the respondents agreed to the statement that “The technical information provided in soil health card should be made easy in local terms” followed by

‘undecided’ (27.35%) and ‘disagree’ (6.84%). While the statement “Soil health card helps in practicing farming in scientific way” 83.77 per cent of the respondents were agree to the statement followed by ‘undecided’ (12.82%) and ‘disagree’ (1.71%).

As far as the statement “Soil health card helps to check the excessive use of fertilizer” is concerned 59.83 per cent of the respondents exhibit their agreement followed by 36.75 and 3.42 per cent of the respondent who were ‘undecided’ and ‘disagree, respectively with the statement. Further, 52.99 per cent of the respondent were agree to the statement that “Soil health cards provides clue to the health of farm and its strength and weakness in terms of different chemical ingredients” followed by ‘undecided’ (28.21%) and ‘disagree’ (18.80%).



1. Soil health card provides information regarding the status of micro-nutrients in the soil.
2. Soil health card provide corrective measures a farmer should take for improved soil health and for better yield.
3. There is no need of such card as farmers themselves are practicing agriculture in a better way.
4. Soil health card helps farmers in reducing extra expenditure by supplying required nutrients in the soil
5. Soil health card is one of no use until the required input should be provided by the government.
6. There is to much information in soil health card and all of them are of no use.
7. It is not possible to follow all the recommendation as mentioned in soil health card.
8. The soil health card helps the farmers to get an idea on the crop wise recommendation of nutrients and fertilizers required in each type of soil.
9. Soil health card can be helpful and effective only if the recommendations are followed by farmers on regular basis.
10. The technical information provided in soil health card should be made easy in local terms.
11. Soil health card helps in practicing farming in scientific way.
12. Soil health card helps to check the excessive use of fertilizer.
13. Soil health cards provides clue to health of farm and its strength and weakness in terms of different chemical ingredients.

Fig 1: Distribution of the respondents according to their perception regarding soil health card

Tables 2 pertains the respondents’ perception regarding soil health card. Table evince that maximum number of soil health card holders (83.76%) were having favorable attitude towards soil health card followed by less favorable (11.97%), whereas only 4.27 per cent respondents had most favorable

attitude towards soil health card. Thus, it can be inferred that the maximum percentage of soil health card holders were having favorable attitude regarding soil health card (83.76%).

Table 2: Distribution of respondents according to their perception regarding soil health card

S. No.	Condition	Frequency (N= 117)	%
1.	Less favorable (Up to 28)	14	11.97
2.	Favorable (28 to 36)	98	83.76
3.	Most favorable (Above 36)	5	4.27

3. Relationship between profile characteristic and perception of respondent regarding utility soil health card

It was observed that the perception of farmers of the relevance of technologies i.e. soil health card was not only affected by the basic characteristics of the farmers but also by the level of awareness (Table 3). The study has revealed that education, land holding, extension contact, mass media exposure, innovativeness, scientific orientation, achievement motivation and awareness level of respondents were significantly related with the perception of respondents regarding utility of soil health card, whereas the variables age, gender, annual income, farming experience and social participation were not found to have any relationship with the perception regarding soil health card.

Table 3: Relationship between profile characteristic and perception of respondent regarding utility of soil health card

S. No.	Characteristics	Correlation coefficient 'r'
1.	Age	0.012 ^{NS}
2.	Gender	-0.047 ^{NS}
3.	Education	0.259*
4.	Land holding	0.244*
5.	Annual income	0.187 ^{NS}
6.	Farming experience	-0.048 ^{NS}
7.	Extension contact	0.490*
8.	Mass media exposure	0.533*
9.	Social participation	-0.021 ^{NS}
10.	Innovativeness	0.499*
11.	Scientific orientation	0.530*
12.	Achievement motivation	0.543*
13.	Awareness about soil health card	0.208*

* Significant at 5% level of significance

^{NS} Non-significant

4. Constraints expressed by farmers in utilization of soil health card

Table 4: Distribution of respondents according to their constraints expressed by farmers in utilization of soil health card

S. No.	Constraints	Frequency (N=117)	%
1	Difficulty in calculating fertilizer dose on the basis of nutrient status of soil	75	64.10
2	No subsidy on inputs required by the government for improving the soil quality	24	20.51
3	Time gap between soil samples taken and issuing cards was too high	60	51.28
4	Received soil health cards after crop harvest	47	40.17
5	Collection of soil sample was not done in presence of farmers	65	55.56
6	Irregularity of extension services	20	17.09
7	Inability to understand all the information given in the card	30	25.64

Regarding constraints expressed by farmers in utilization of soil health card Table 4 revealed that large majority of the soil health card holders faced difficulty in calculating fertilizer dose on the basis of nutrient status of soil (64.10%). The respondents also responded that the task of collection of soil sample was not done in presence of farmers (55.56%), time gap between soil samples taken and issuing cards was too high (51.28%), received soil health cards after crop harvest (40.17%), inability to understand all the information given in the card (25.64%), no subsidy on inputs required by the government for improving the soil quality (20.51%) and

irregularity of extension services (17.09%) which may restrict them to clear their doubts at the time of need.

Conclusion

The finding regarding awareness about soil health card indicates that majority of the respondents were aware about the utility of soil health card. The finding regarding perception of farmers about soil health card indicates that maximum percentage of respondents were having favourable attitude towards soil health card. It was also found that perception regarding soil health card was not only affected by the basic characteristics of the farmers i.e. education, land holding, extension contact, mass media exposure, innovativeness, scientific orientation, achievement motivation but also by the level of awareness. An understanding of the perception of farmers and description of constraints faced by the respondents may serve as a feedback to the planners, policy makers, extension personnel, scientist and development agencies to make suitable strategy in implementation of the scheme.

References

- Adesina AA, Baidu-Forson J. Farmers' perception and adoption of new agricultural technology: Evidence from analysis in Burkina Faso and Guinea, West Africa. *Agric. Econ.* 1995; 13:1-9.
- Alonge AJ, Martin RA. Assessment of the adoption of sustainable agriculture practices: Implications for agricultural education. *J Agric. Educ.* 1995; 3(3):34-42.
- Boahene K, Snijders TAB, Folmer H. An integrated socio-economic analysis of innovation adoption: The case of cocoa in Ghana. *J Policy Model.* 1999; 21:167-184.
- Doran JW, Parkin TB. Defining and assessing soil quality. In J.W. Doran *et al.* (ed.). *Defining soil quality for a sustainable environment.* SSSA Spec. Publ. 35. SSSA, Madison, 1994, 3-21.
- Doran JW, Sarrantonio M, Liebig MA. Soil health and sustainability. *Advances in Agronomy.* 1996; 56:1-54.
- Hikson M, Keith L. The attitudes and perceptions of high school administrators toward agricultural science teachers in Texas. *Proceedings of the Southern Agricultural Education Research Conference.* Lexington, KY, 2000.
- Larson WE, Pierce FJ. Conservation and enhancement of soil quality. In *Evaluation for sustainable land management in the developing world.* Bangkok, Thailand. Int. Board for Soil Res. and Management, 1991, 12(2).
- Negatu W, Parikh A. The impact of perception and other factors on the adoption of agricultural technology in the moret and jiru Woreda of Ethiopia. *Agric. Econ.* 1999; 21:205-216.
- Shrestha B, Maskey SL, Shrestha RK, Tripathi BP, Khadka YG, Munankarmi RC, *et al.* *Soil fertility management: Farmers' practices and perception in the hills of Nepal.* Lumle Technical Paper No. 2000/4. Lumle Agriculture Research Station, Pokhara, Nepal, 2000.
- Warkentin BP, Fletcher HR. Soil quality for intensive agriculture. In *Proceedings of the International Seminar on Soil Environment and Fertility Management in Intensive Agriculture.* Society of Science of Soil and Manure. Japan, 1977, 594-598.