

Association of socio-economic profile of farmers with perception towards soil health card in Surajpur District (C.G.), India

Abstract:

Soil test-based nutrient management has emerged as a key issue in efforts to increase agricultural productivity and production. The optimal use of nutrients, based on soil analysis, can improve crop productivity and minimize nutrient waste, thus minimizing the impact on the environment. The study was conducted in the Surajpur District of Chhattisgarh, India with 120 respondents. The finding indicated that most farmers had a high perception level 40 percent followed by a medium 35 percent and only 25 percent farmers had a low perception level. Education, Farming experience, land holding, Annual Income, Extension Contact, Mass Media Exposure, Scientific Orientation, and Innovativeness were significantly related, and age, Occupation, and social participation were found nonsignificantly relationship with perception level.

Keywords: Soil health card, perception level, Farming experience, Soil test-based nutrient management

Introduction-

The greatest number of rural people will remain engaged in agriculture as their primary occupation for a very long time. While we have implemented the Green Revolution, the nation's expanding population needs even greater efforts in the areas of research, education, and extension. Because there are so many productive technologies accessible across the nation, it is crucial for extension agents to understand how farmers feel about the technologies before they are adopted. Nutrient imbalance in the soil, excessive fertilisation, soil pollution, and processes that lead to soil loss are all factors that have a negative impact on the health and quality of the soil. Although the producing function of soil has long been understood, it has only recently become important to preserve and improve the ecological services that soil provides [5-8]. Soil health card is a printed report that will be given to a farmer for each of his holdings. It will show his soil's status according to 12 parameters: N, P, K (macronutrients), and S (secondary nutrients), Zn, Fe, Cu, Mn, and Bo are micronutrients and pH, EC and OC (Physical parameters). Based on this, the SHC will also recommend fertilizers and soil amendments that the farm needs. The Soil Health Card will provide a suggestion on the recommended dosage of various nutrients depending on the soil nutrient status of the farmer's holding [9,10]. Soil health card is one of the most crucial approaches in agriculture because it is essential for sustainable production.

Methodology-

The study was carried out in Surajpur district (C.G.), 2022-23. There are six total blocks in the Surajpur district. Out of which, 2 blocks were purposely selected. From each block, 4 villages, a total of 8 villages were selected. From each village, 15 farmers total of 120 respondents purposely selected. The researcher personally gathered the data using a structured and personal interview schedule. Analyse and understand the data, percentages,

frequency, and correlation coefficient were used.

Result and Discussion: -

Table no. 1 Distribution of respondents according to the level of perception of farmers about soil health cards. (n=120)

| S. No. | Parameters | A | | UD | | DA | |
|--------|--|----|-------|----|-------|----|-------|
| | | F | % | F | % | F | % |
| 1 | Soil test results give the soil health information. | 59 | 49.17 | 39 | 32.50 | 22 | 18.33 |
| 2 | SHC recommendation helps in scientific farming | 45 | 37.50 | 48 | 40 | 27 | 22.50 |
| 3 | Soil fertility increases the crop production and productivity. | 68 | 56.67 | 34 | 28.33 | 18 | 15.00 |
| 4 | Quantity of fertilizer can be easily calculated by using SHC | 41 | 34.16 | 47 | 39.17 | 32 | 26.67 |
| 5 | SHC reduces the excess cost on fertilizers and nutrients | 47 | 39.17 | 41 | 34.16 | 32 | 26.67 |
| 6 | Soil test result is not useful for converting fallow land to cultivable land | 45 | 37.50 | 43 | 35.83 | 32 | 26.67 |
| 7 | The required quantity of macro and micronutrients can be applied by soil test results. | 12 | 10.00 | 38 | 31.67 | 70 | 58.33 |
| 8 | Secondary nutrient given in the SHC is not much useful to farmers. | 59 | 73.75 | 16 | 20.00 | 5 | 6.25 |
| 9 | Amendments are used for soil reclamation. | 41 | 34.17 | 39 | 32.50 | 40 | 33.33 |
| 10 | SHC helps to establish coordination among farmers, extension workers and scientists. | 57 | 47.50 | 40 | 33.33 | 23 | 19.17 |
| 11 | SHC gives crop wise recommendation of fertilizers & nutrients | 23 | 19.17 | 59 | 49.16 | 38 | 31.67 |
| 12 | Soil degradation cannot be reduced from soil test results | 42 | 35.00 | 42 | 35.00 | 36 | 30.00 |
| 13 | Soil testing should be done every year | 41 | 34.17 | 39 | 32.50 | 40 | 33.33 |
| 14 | SHC information helps to adopt suitable crop plan. | 42 | 35.00 | 38 | 31.67 | 40 | 33.33 |
| 15 | Soil pH gives acidity & alkalinity of soil. | 36 | 45 | 27 | 33.75 | 17 | 21.25 |
| 16 | Soil test result does not give idea to choose the incoming crops. | 69 | 57.50 | 34 | 28.33 | 17 | 14.17 |
| 17 | Salinity of the soil is known by electrical conductivity (EC) value. | 22 | 18.33 | 51 | 42.50 | 47 | 39.17 |
| 18 | Farmers cannot achieve economic stability by SHC | 68 | 56.67 | 30 | 25.00 | 22 | 18.33 |
| 19 | Based on soil test results farmers can plan the future of their crops as well as land. | 58 | 48.33 | 44 | 36.67 | 18 | 15.00 |
| 20 | SHC is not necessary for practicing Agriculture | 39 | 32.50 | 43 | 35.83 | 38 | 31.67 |

Table 1. indicated that the majority 49.17 percent(%)percent of the respondents had agreed with the statement that soil health cards can be obtained after the soil sample testing, followed by 32.50 per undecided and 18.33 percent(%)percent had disagreed with the statement. Most farmers 40 percent(%)percent undecided with the statement that farming cannot be done inscientific ways by using soil health card information, followed by the 37.50 percent(%) agreed and 22.50 percent(%)haddisagreed. More than half 56.67 percent(%)percent agreed with the statement that SHC help to maintain soil fertility andproductivity, followed by 28.33 percent(%)percent undecided and 15.00 percent(%)percenthad disagreed. The majority of farmers 39.17 percent(%)percent had undecidedwith the statement that SHC provides information about the current fertility status of soil, followed by the majority 34.16 percent(%)percent agreed and 26.67 percent(%)percenthaddisagreed. Most of the farmers 42.20 percent(%)percentundecided withthe statementthatSHCreduces the excess cost on fertilizers & nutrient, followedby 39.17percent(%)percentagreed and 18.33 percent(%)disagreed with thestatement. The majority of farmer 37.50 percent(%)agreedwiththe statementthat soil test results not useful for converting fallow land, followedby 35.83percent(%)undecided and26.67percent(%)disagreed. Majority of farmer 58.33 percent(%)percentdisagreedwiththe statementthat quantity of macro and micronutrient applied soil test, followed by 31.67 percent(%)undecidedand 10percent(%) agreed. Most of farmers 49.7 percent(%) agreedwithstatementthatsecondary nutrient not much useful to farmersfollowedby 35.33percent(%)undecidedand15percent(%)disagreed. Out of total farmers 34.17 percent(%) agreedwithstatementthat amendments are used for soil reclamation, followedby33.33percent(%)disagreedand 32.50 percent(%)undecided. Majority of farmers 47.50 percent(%) agreedwithstatementthatSHChelptoestablish, coordinationamongfarmers, extension workandexperts, followedby 33.33percent(%)had undecidedand19.17percent(%)disagree. Most of farmers 49.16 percent(%) had undecided withstatementthatSHCgives cropamountoffertilizertobeapplied, followed by 31.67 percent(%) disagreed, 19.17 percent(%) undecided and 5.83 percent(%)disagreewith the.35.00 percent(%) of the respondents hadagreed& undecided withstatementthatSHCgivesinformationaboutamountoffertilizertobeapplied, followed by 30.00 percent(%) disagreed. Majority of farmer 34.17percent(%)oftherespondentshadagreed with statement that soil testing should by every year, followed by 33.33 percent(%) disagreedand 32.50 percent(%) undecided with thestatement. Most of farmer 35.00 percent(%)of therespondents hadagreedwithstatementthat information helps to adopt suitable crop plan giveninSHC, followedby33.33percent(%)ofthesoilhealthcardholdershad disagreedand31.67percentofthe soilhealth cardholdershad undecided with thestatement. Mostly farmer 45 percent(%)oftherespondents hadagreedwithstatementthatAcidity, alkalinity ofthesoilscanbeknownwiththehelpofSHCinformation, followedby 33.75 percent(%)had undecided and21.25percent(%)disagreed. Majority of farmer 57.50percent(%)agreedwithstatementthatSoil test result doesn't choose the income generating crop, followedby 28.33 percent(%) had undecided and 14.17 percent(%) disagreed. Most of farmer42.50percent(%)oftherespondentshad undecidedwithstatementthatSoil is known by EC value, followedby 39.17 percent(%) of the soil health card holders had disagreed and 18.33 percent(%) of the soil health cardholdershad agreed with the statement. Most of farmer 56.67percent(%)agreedwithstatementthatcannot achieve economic stability by

SHC, followed by 25.00 percent (%) had undecided and 18.33 percent (%) disagreed. Majority of farmers 48.33 percent had agreed with statement that farmers can plan future their crops as well as land, followed by 36.67 percent (%) undecided and 15.00 percent (%) disagreed. In this table shows majority of farmer 40.00 percent (%) of the respondents had agreed with statement that give a clear idea nutrient the soil is lacking, followed by 37.50 percent (%) undecided and 22.50 percent (%) of soil health card holders had disagreed with the statement.

Table no. 2. Respondents were divided into groups based on their perception level. (n=120)

| S. No. | Category | Frequency | Percentage |
|--------|--|-----------|------------|
| 1 | Low perception level (Up to 20 scores) | 30 | 25.00 |
| 2 | Medium perception level (21 to 40 scores) | 42 | 35.00 |
| 3 | High perception level (Above 40 scores) | 48 | 40.00 |
| | Total | 120 | 100.00 |

To measure the perceived perception level of farmers were asked to rate the agreement on a three-point continuum i.e., low perception level, medium perception level and high perception level. Table no.2 reveals that the maximum number of respondents' 40 percent were having high perception level followed by a medium perception level of 35 percent and only 25 percent of respondents had a low perception level.

Table no. 3. Association between the socio-economic profile of farmers and their perception level.

| S.No. | Characteristics | Correlation coefficient |
|-------|------------------------|-------------------------|
| 1 | Age | 0.108 ^{NS} |
| 2 | Education | 0.216* |
| 3 | Farming Experience | 0.229* |
| 4 | Land Holding | 0.300** |
| 5 | Occupation | 0.095 ^{NS} |
| 6 | Annual income | 0.434** |
| 7 | Social Participation | 0.084 ^{NS} |
| 8 | Extension Contact | 0.261** |
| 9 | Mass Media Exposure | 0.232* |
| 10 | Scientific Orientation | 0.655** |
| 11 | Innovativeness | 0.229* |

*indicates that .05% level of significance

**indicates that .01% level of significance

^{NS} indicates that non-significant

Table No.3 concluded that the correlation of all the selected independent variables with perception of SHC showed non-significant with age (0.108^{NS}), Occupation (0.095^{NS}), social participation (0.084^{NS}) However, Education (0.216*), Farming experience (0.229*), land holding (0.300**), Annual Income (0.434**), Extension Contact (0.261**), Mass Media

Exposure (0.232*), Scientific Orientation (0.65**) and Innovativeness (0.229*) depicts positive significant correlation.

Conclusions: -

It was concluded that Education, Farming experience, land holding, Annual Income, Extension Contact, Mass Media Exposure, Scientific Orientation, and Innovativeness were significantly related and age, Occupation, and social participation were found non a significantly relationship with perception level. Among perception level, most of respondents had high perception levels towards soil health cards.

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