

Knowledge and Adoption of Soil Analysis Practices By The Farmers of Banaskantha District of Gujarat State

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INTRODUCTION

Adoption of intensive cropping with the aim of achieving higher yield is bound to cause nutrient exhaustion and imbalance in the soil. To maintain the soil fertility and to get continuously more yield from unit area, it is very essential to ensure regular and continuous supply of nutrients to the soil. The farmers apply too much of a little needed plant element and too little of another element without a fertilizer recommendation based upon a soil test. It is the prime duty of the farmer to supply nutrients which have been removed by the previous crops. The soil testing laboratory helps to determine the nutrient requirement of a crop in particular soil. Very few studies have been undertaken on such aspect, therefore, this study was undertaken with the following objectives.

OBJECTIVES

- (1) To study the awareness and knowledge of the farmers regarding soil testing services.
- (2) To know the extent of adoption of soil testing measures by the farmers.

- (3) To study the relationship of personal, social and economic characteristics of the farmers with the knowledge and extent of adoption of soil analysis practices by them.
- (4) To study the constraints if any in adoption of recommended soil sampling procedures of the farmers.
- (5) To find out the difficulties faced by the farmers in adoption of soil testing recommendations and to seek their suggestions regarding improvement of soil testing service.

METHODOLOGY

The present study was conducted in Banaskantha district of Gujarat State. Among the 11 talukas of the district, Deesa taluka was selected purposively as soil testing laboratory is existing in the taluka. Thirteen villages from the taluka were selected randomly and 10 farmers from each village who had got their soil sample analysed were selected randomly, consisting a sample size of 130 respondents. A special interview schedule was prepared in the light of objectives of

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the study and the data were collected by personal interview.

Company. Only ten per cent farmers were found to be aware of

Table 1 : Awareness of the respondents about various institutions working for soil testing (N = 130)

| Sr. No. | Institutions | Frequency | Percentage |
|---------|-------------------------------------|-----------|------------|
| 1. | State soil testing laboratory | 100 | 76.92 |
| 2. | Mobile soil testing laboratory | 2 | 1.54 |
| 3. | GNFC | 1 | 0.77 |
| 4. | GSFC | 63 | 48.46 |
| 5. | College of Agriculture, S. K. Nagar | 13 | 10.00 |
| 6. | IFFCO | 4 | 3.08 |

FINDINGS AND DISCUSSION

3.1 Awareness and knowledge of the farmers regarding soil testing services.

3.1.1. Awareness

The data presented in the Table 1 reveal that 76.92 per cent farmers were aware about the state soil testing laboratory Deesa. Nearly half of the respondents were found to be aware of the soil testing service of Gujarat State Fertilizer

the soil testing service of Agricultural College, Sardar Krushinagar. Farmers were further asked to mention the purpose of soil analysis. Data in this regard are depicted in Table 2. From the table it can be seen that 60 per cent of the farmers indicated that soil samples were analysed in order to make efficient use of chemical fertilizers and 48.46 per cent farmers have the purpose of soil analysis to know the element

Table 2 : Purpose of analysis as perceived by the respondents (N = 130)

| Sr. No. | Purpose | Frequency | Percentage |
|---------|---|-----------|------------|
| 1. | Self interest | 6 | 4.62 |
| 2. | To know element deficiency | 63 | 48.46 |
| 3. | Efficient use of chemical fertilizer | 78 | 60.00 |
| 4. | Samples were taken directly by the extension workers without consulting the farmers | 51 | 39.23 |
| 5. | Due to problematic soil | 23 | 17.69 |

deficiency. The probable reason might be due to the fact that proper and efficient use of fertilizer leads to economic return in terms of yield.

farmers (53.85 per cent) had moderately adopted soil sampling techniques. Higher adoption was found among 24.61 per cent respondents.

Table 3 : Distribution of the respondents according to their level of knowledge.

| (N=130) | | | |
|---------|-----------------------------|-----------|------------|
| Sr. No. | Level of Knowledge | Frequency | Percentage |
| 1. | Low level (below 3.74) | 14 | 10.77 |
| 2. | Medium level (3.74 to 8.33) | 94 | 72.31 |
| 3. | High level (above 8.33) | 22 | 16.92 |

\bar{X} 6.0299 S. D. = 2.3005

Knowledge

The data regarding knowledge of the respondents regarding soil sampling are depicted in Table 3.

3.3 Relationship between characteristics of the respondents and their knowledge and extent of adoption of soil sampling procedure

Table 4 : Distribution of the respondents according to their extent of adoption of soil sampling procedure (N=130)

| Sr. No. | Extent of Adoption | Frequency | Percentage |
|---------|-----------------------------|-----------|------------|
| 1. | Low level (below 3.11) | 28 | 21.54 |
| 2. | Medium level (3.12 to 7.78) | 70 | 53.85 |
| 3. | High level (above 7.78) | 32 | 24.61 |

\bar{X} 5.4478 S. D. = 2.3350

It is clear from the table that 72.31 per cent farmers had medium level of knowledge, followed by 16.92 per cent farmers who had high level of knowledge.

3.2 Extent of Adoption of Soil Sampling Practices

The data presented in Table 4 indicate that more than half of the

for the study, only education and social participation were positively and significantly correlated with the knowledge and adoption, while age was negatively but significantly correlated with knowledge. Knowledge and adoption level of It is evident from Table 5 that among the characteristics selected the farmers were also found significantly and positively correlated with each other.

Table 5 : Relationship between the personal and socio-economic characteristics of the respondents and their knowledge and extent of adoption of soil sampling procedure. (N=130)

| Sr. No. | Characteristics | Co-efficient of correlation (r) | |
|---------|----------------------|---------------------------------|----------|
| | | Knowledge | Adoption |
| 1. | Aga | - 0.286** | - 0.111 |
| 2. | Education | 0.372** | 0.216** |
| 3. | Occupation | 0.0011 | 0.0951 |
| 4. | Land holding | - 0.122 | 0.104 |
| 5. | Social participation | 0.331** | 0.337** |
| 6. | Knowledge | - | 0.808** |

3.4 Constraints in adoption of recommended soil sampling practices

It can be seen from the Table 6 that less interest in soil analysis,

analysis report received late, lack of understanding and analysis report was not received at all were ranked first, second, third and fourth respectively.

Table 6 : Constraints faced by the respondents in adoption of recommended soil sampling practices (N = 130)

| Sr. No. | Constraints | Weightage | Rank |
|---------|---|-----------|------|
| 1. | Less interest | 208 | I |
| 2. | Analysis report received late | 204 | II |
| 3. | Lack of understanding | 201 | III |
| 4. | Analysis report was not received at all | 194 | IV |
| 5. | Lack of explanation from extension agents | 185 | V |
| 6. | Unawareness of sampling procedure | 180 | VI |
| 7. | Lack of finance | 173 | VII |
| 8. | Change of crop afterwards | 130 | VIII |
| 9. | No trust in analysis | 127 | IX |
| 10. | Lack of irrigation facility | 112 | X |

Table 7 : Suggestions expressed by the respondents for improvement of soil testing services (N = 130)

| Sr. No. | Suggestions | Frequency | Percentage |
|---------|--|-----------|------------|
| 1. | Practical training in Sampling | 72 | 55.38 |
| 2. | Timely communication of analysis report | 65 | 50.00 |
| 3. | Use of simple language in analysis report | 62 | 47.69 |
| 4. | Wide publicity and propoganda about the soil testing lab. and its functions | 58 | 44.62 |
| 5. | VEW should explaine the analysis report | 52 | 40.00 |
| 6. | VEW should inform to the farmers about collection of soil samples before season | 44 | 33.85 |
| 7. | Establishment of soil testing laboratory at Taluka place | 27 | 20.77 |
| 8. | Anlysis of all fields through mobile laboratory | 23 | 17.69 |
| 9. | VEW/sarpanch should plan in a ways that mobile soil testing laboratory render its services at their villages | 18 | 13.85 |

3.5 Suggestions for improvement of soil testing services

The data in Table 7 reveal that practical training in sampling, timely communication of recommendation of analysis report, use of simple language in analysis report, wide publicity and propoganda about the soil testing laboratory and VEW should explained the analysis report were the important suggestins expressed by the farmers.

CONCLUSIONS

It can be concluded from the above findings that majority of the farmers had medium level of knowledge as well as

medium level of adoption. Further it can be ovserved that education is positively and significantly related with knowledge and adoption. Sameway knowledge is also positively and significantly related with adoption.

IMPLICATIONS

Extension agencies should increase the knowledge level of the farmers through practical training in soil sampling procedure, which will definately help in greater adoption of soil sampling techniques. Over and above timely commenication recommendations of analysis report and use of simple language in analysis report will also help in better adoption of soil analysis practices by the farmers.