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Utility perception of farmers towards PDKV Liquid Micro Grades

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Abstract

The present research study was conducted in Balapur and Akot talukas in Akola district of Maharashtra state. Twelve villages were selected on the basis of maximum number of farmers using PDKV Liquid Micro Grades. From these villages, those respondents were selected who had been using PDKV liquid micro grades from last two year. Thus, 120 farmers constituted the sample for the study. The data were collected on utility perception of farmers towards PDKV Liquid Micro Grades. The finding of the study observed that, majority (70.00%) of respondents held a medium-level perception regarding the utility of PDKV Liquid Micro Grades, followed by 20.00 per cent and 10 percent of respondents expressed a high-level perception and low-level perception concerning the usefulness of PDKV Liquid Micro Grades. Likewise, perception of farmers towards utility of PDKV Liquid Micro Grades under study.

Keywords: Utility perception, perception, micronutrients, soil fertility

Introduction

Overuse of fertilizer and keep adding fertilizer into the soil results in harmful effects on crop cultivation. In India, intensive agriculture has resulted in remarkable growth in food grain production powered by improved varieties of seeds, high yielding varieties (HYV), use of chemical fertilizer and assured irrigation. However, imbalanced use of chemical fertilizers and high yielding varieties (HYV), caused the removal of nutrients from soil which in turns resulted in decreases in soil fertility and decrease in organic matter content (which is called heart of soil) and decline of the soil health. The outcome of the unbalanced use of chemical fertilizer led to reduction in fertilizer response ratio and increase in fertilizer consumption ratio.

Micronutrients are the essential elements for plant growth, but it's relatively small amounts are needed for plants growth. Therefore, the term is used as "micro". It includes Boron (B), Chlorine (Cl), Copper (Cu), Iron (Fe), Manganese (Mn), Molybdenum (Mo), and Zinc (Zn). They are used in plant for catalysis, hormone production, green matter production, flower and fruit set support, and production. Mostly micronutrients are applied as foliar for achieving high crop growth as well as maximum economic yield. The present investigation was undertaken with specific objective viz., to study the utility perception of farmers towards the use of PDKV Liquid Micro Grades.

Micronutrient grades prepared by Dr. PDKV, Akola

There are three different types of the grades prepared by Department of Soil Science and Agricultural Chemistry, Dr. PDKV, Akola.

PDKV Liquid Micro Grade II

Used for vegetables, cereals, pulses and fruit crops.

Component: Iron-25%, Zinc- 2%, Boron- 0.5%, Manganese- 1%,
Copper-1%, Molybdenum- 0.1%

PDKV Liquid Micro Grade X

Used for pulses.

Component: Iron 2.5%, Zinc-5%, Boron-0.5%, Molybdenum-0.1%**PDKV Liquid Micro Grade XI**

Used for cotton crops.

Component- Iron- 2.5%, Zinc- 5%, Boron- 0.5

The present investigation was planned to assess perception of farmers towards utility of PDKV Liquid Micro Grades.

Methodology

The present investigation was conducted in Akola district of Maharashtra. On the basis of maximum number of farmers using PDKV Liquid Micro Grades, two tahsils namely, Balapur and Akot were selected for the present research study. For this study, a list of villages using PDKV Liquid Micro Grades was collected from Department of Soil Science and Agricultural Chemistry, Dr. PDKV, Akola. From this list, on the basis of maximum number of farmers using PDKV Liquid Micro Grades within a village were selected from Akot and Balapur taluka. Accordingly, 6 villages from each taluka were selected. From each village 10 farmers and thus, total 120 respondents selected for the study, who had been using PDKV Liquid Micro Grades from last two year. The exploratory research design of social research was used. Utility perception of farmers towards PDKV Liquid Micro Grades was measured with the help of schedule prepared in assistance of experts. Total 15 statements of the schedule were developed and responses of the respondents were measured on five-point continuum as strongly agree, agree, undecided, disagree and strongly disagree and it was scored as 5, 4, 3, 2 and 1, respectively. On the basis of mean and standard deviation respondents were categories in three categories as Low, Medium and High.

Results and Discussion

Personal, socio-economic, communicational, psychological and situational characteristics of the farmers who used PDKV Liquid Micro Grades: The data presented in Table 1 that, majority (57.50%) of respondents belonged to middle age group (ranging from 36 to 50 years), followed by 25.00 per cent and 17.50 per cent of respondents belonged to young age group (Upto 35 years) and old age group (Above 50 years), respectively. Majority (35.00%) of the respondents had received education up to the secondary school level and 33.33 per cent had completed their education up to higher secondary school. Majority (33.33%) of the respondents had an annual income in range of Rs. 2,35,781 to Rs. 4,05,960, followed by 30.84 per cent of the respondents whose annual income fell in the range of Rs. 4,05,961 to Rs. 5,76,140. About 44.17 per cent of farmers had semi-medium sized land holdings, while 38.33 per cent possessed medium-sized land holdings. Majority (65.83%) of farmers follow both Kharif and Rabi season cropping pattern. Majority (56.67%) of the respondent relied on wells/ tube wells as their primary source of irrigation. Majority (44.17%) of the farmers possessed a medium level of information sources, followed by 30 per cent and 25.83 per cent of farmers had a low level of information sources and high level of information sources. Majority (66.67%) of the respondents reported that, they were having a medium level of extension contact, followed by high-level contact (17.50%) and low-level contact (15.83%). Majority of respondents (62.50%) exhibited a medium level of innovativeness, followed by 29.17 per cent of respondents who demonstrated a higher level of innovativeness and 8.33 per cent who displayed a low level of innovativeness. 59.17 per cent of respondents were demonstrated a medium level of scientific orientation, while 30.83 per cent of the respondents exhibited a high level of scientific orientation, while the remaining 10.00 per cent of respondents had a low level of scientific orientation.

Table 1: Personal, socio-economic, communicational, psychological and situational characteristics of the farmers who used PDKV Liquid Micro Grades

Sr. No.	Particulars	Frequency (n=120)	Percentage
1.	Age		
	Young (Upto 35)	30	25.00
	Middle (36 to 50)	69	57.50
	Old (Above 50)	21	17.50
2.	Education		
	Illiterate (No school)	00	00.00
	Primary school (1 st to 4 th)	06	05.00
	Middle school (5 th to 7 th)	12	10.00
	Secondary school (8 th to 10 th)	42	35.00
	Higher secondary school (11 th to 12 th)	40	33.33
	Graduate and above (Above 12 th)	20	16.67
3.	Annual income		
	Upto Rs. 2,35,780/-	19	15.83
	Rs. 2,35,781 to Rs. 4,05,960 /-	40	33.33
	Rs. 4,05,961 to Rs. 5,76,140/-	37	30.84
	Rs. 5,76,141 to Rs. 7,46,320/-	16	13.33
	Above Rs. 7,46,320/-	8	06.67
4.	Land holding		
	Marginal (Upto 1.00 ha)	06	05.00
	Small (1.01 to 2.00 ha)	09	07.50
	Semi-medium (2.01 to 4.00 ha)	53	44.17
	Medium (4.01 to 10.00 ha)	46	38.33
	Large (Above 10.00 ha)	06	05.00
5.	Cropping pattern		
	Kharif	36	30.00
	Kharif + Rabi	79	65.83
	Kharif + Rabi + Summer	05	04.17

6.	Sources of irrigation		
	No source	43	35.83
	River	00	00.00
	Well/ Tubewell	68	56.67
	Canal	05	04.17
	Farm pond	04	03.33
7.	Sources of information		
	Low (Up to 08.21)	36	30.00
	Medium (08.21 to 09.71)	53	44.17
	High (Above 09.71)	31	25.83
Mean = 8.96 SD = 0.75			
8.	Extension contact		
	Low (Up to 3.62)	19	15.83
	Medium (3.62 to 6.34)	80	66.67
	High (Above 6.34)	21	17.50
Mean = 4.98 SD = 1.36			
9.	Innovativeness		
	Low (Up to 9.72)	10	08.33
	Medium (9.72 to 14.76)	75	62.50
	High (Above 14.76)	35	29.17
Mean = 12.24 SD = 2.52			
10.	Scientific orientation		
	Low (Upto 17.13)	12	10.00
	Medium (17.13 to 21.54)	71	59.17
	High (Above 21.54)	37	30.83
Mean = 19.33 SD = 2.21			

Utility perception of farmers towards PDKV Liquid Micro Grades. In present study, utility perception is operationally defined as the degree to which a PDKV Liquid Micro Grades

perceived as useful by farmers. The information regarding the utility perception of farmers toward PDKV Liquid Micro Grades was collected, tabulated and analyzed.

Table 2: Statement wise distribution of respondents according to their utility perception

Sr. No.	Statement	SA	AG	UD	DS	SD
1.	Use of PDKV Liquid Micro Grades helps in proper growth of crop	53 (44.17)	49 (40.83)	18 (15.00)	00 (00.00)	00 (00.00)
2.	Use of PDKV Liquid Micro Grades helps in increasing the crop yield	56 (46.67)	35 (29.17)	25 (20.83)	04 (03.33)	00 (00.00)
3.	Application of PDKV Liquid Micro Grades leads to good quality of produce	59 (49.17)	61 (50.83)	00 (00.00)	00 (00.00)	00 (00.00)
4.	Application of PDKV Liquid Micro Grades enhance the flowering of crop	44 (36.67)	56 (46.67)	20 (16.67)	00 (00.00)	00 (00.00)
5.	Application of PDKV Liquid Micro Grades enhance fruiting bodies of the crop	40 (33.33)	46 (38.33)	27 (22.50)	07 (05.83)	00 (00.00)
6.	Application of PDKV Liquid Micro Grades is easy	46 (38.33)	58 (48.33)	16 (13.33)	00 (00.00)	00 (00.00)
7.	Application of PDKV Liquid Micro Grades is eco-friendly	48 (40.00)	52 (43.33)	20 (16.67)	00 (00.00)	00 (00.00)
8.	Application of PDKV Liquid Micro Grades recovered the deficiency symptoms observed on leaves	49 (40.83)	57 (47.50)	14 (11.67)	00 (00.00)	00 (00.00)
9.	PDKV Liquid Micro Grades gives better result as compare to other way of fertilizer application	29 (24.17)	65 (54.17)	26 (21.67)	00 (00.00)	00 (00.00)
10.	PDKV Liquid Micro Grades is cheaper than other available micronutrient	59 (49.17)	45 (37.50)	16 (13.33)	00 (00.00)	00 (00.00)
11.	PDKV Liquid Micro Grades is easily available	42 (35.00)	54 (45.00)	21 (17.50)	03 (02.50)	00 (00.00)
12.	PDKV Liquid Micro Grades usage is economically feasible	43 (35.83)	57 (47.50)	20 (16.67)	00 (00.00)	00 (00.00)
13.	PDKV Liquid Micro Grades is available in required quantity	47 (39.17)	50 (41.67)	19 (15.83)	04 (03.33)	00 (00.00)
14.	There is no adverse effect of using the PDKV Liquid Micro Grades for regular crops	63 (52.50)	46 (38.33)	11 (09.17)	00 (00.00)	00 (00.00)
15.	PDKV Liquid Micro Grades is a quality product to be used for crops	71 (59.17)	49 (40.83)	00 (00.00)	00 (00.00)	00 (00.00)

SA- Strongly Agree, AG- Agree, UD- Undecided, DS-Disagree, SD-Strongly Disagree (Figures in parenthesis indicates percentage)

The data in Table 2, observed that, 59.17per cent, 52.50per cent, 49.17per cent, 46.67per cent and 44.17per cent of respondents are strongly agreed to the statements like, PDKV Liquid Micro Grades is a quality product to be used for crops, There is no adverse effect of using the PDKV Liquid Micro Grades for regular crops, PDKV Liquid Micro Grades is cheaper than other available micronutrient, Use of PDKV Liquid Micro Grades helps in increasing the crop yield and Use of PDKV Liquid Micro Grades helps in proper growth of crop, respectively.

The statements like PDKV Liquid Micro Grades gives better result as compare to other way of fertilizer application,

Application of PDKV Liquid Micro Grades leads to good quality of produce, Application of PDKV Liquid Micro Grades is easy, Application of PDKV Liquid Micro Grades recovered the deficiency symptoms observed on leaves and PDKV Liquid Micro Grades usage is economically feasible are agreed with the percentage of 54.17per cent, 50.83per cent, 48.33per cent, 47.50per cent and 47.50per cent, respectively.

Also, the statements like Application of PDKV Liquid Micro Grades enhance the flowering of crop, PDKV Liquid Micro Grades is easily available, Application of PDKV Liquid Micro Grades is eco-friendly, PDKV Liquid Micro Grades is

available in required quantity and Application of PDKV Liquid Micro Grades enhance fruiting bodies of the crop are agreed with percentage of 46.67%, 45%, 43.33%, 41.67% and 38.33per cent, respectively.

Table 3: Distribution of respondents according to their level of utility perception towards PDKV Liquid Micro Grades

Sr. No.	Category	Respondents (n=120)	
		Frequency	Percentage
1.	Low (Up to 61.76)	12	10.00
2.	Medium (61.76 to 65.90)	84	70.00
3.	High (Above 65.90)	24	20.00
Total		120	100.00
Mean = 63.83 SD = 2.07			

The data presented in Table 3 that, majority (70.00%) of respondents held a medium-level perception regarding the utility of PDKV Liquid Micro Grades, followed by, 20.00 per cent of respondents expressed a high-level perception and 10 percent had a low-level perception concerning the usefulness of PDKV Liquid Micro Grades.

Based on the findings, it can be inferred that, the majority of respondents held a medium-level perception regarding the utility of PDKV Liquid Micro Grades.

These results closely align with those reported by Charel (2018) [2], Rodhe (2020) [6], Kawade (2021) [4].

Relationship of characteristics of farmers with utility perception towards the use of PDKV Liquid Micro Grades

From Table 4, it is depicted that, education, cropping pattern, innovativeness and scientific orientation of farmers were found positive and highly significant with utility perception at 0.01 level of probability, whereas sources of information and extension contact were found positively significant with utility perception at 0.05 level of probability. The positive significant relationship shows that, when the level of the variables viz. education, cropping pattern, sources of information, extension contact, innovativeness and scientific orientation increases then the utility perception of farmers towards PDKV Liquid Micro Grades will also increases. The variables age, annual income, land holding, and sources of irrigation were determined to have no significant relationship with the utility perception.

This finding strongly suggests that, the majority of the chosen independent variables exhibit a notable and positive correlation with utility perception of farmers towards PDKV Liquid Micro Grades.

Table 4: Relationship between personal, socio-economic, communicational, psychological and situational characteristics of respondents with their utility perception

Sr. No.	Characteristics	Correlation coefficient
1.	Age	0.149 ^{NS}
2.	Education	0.254**
3.	Annual income	0.147 ^{NS}
4.	Land holding	-0.020 ^{NS}
5.	Cropping pattern	0.291**
6.	Sources of irrigation	0.126 ^{NS}
7.	Sources of information	0.185*
8.	Extension contact	0.217*
9.	Innovativeness	0.369**
10.	Scientific orientation	0.273**

**Significant at 0.01 level of probability

*Significant at 0.05 level of probability

NS- Non-Significant

Conclusion

The findings of the present study revealed that, a majority of the respondents had medium level of utility perception towards the use of PDKV Liquid Micro Grades, followed by high level and low level of utility perception towards the use of PDKV Liquid Micro Grades. The education, cropping pattern, sources of information, extension contact, innovativeness and scientific orientation had significant relationship with utility perception of farmers towards PDKV Liquid Micro Grades. Whereas, age, annual income, land holding and sources of irrigation had non-significant relationship with utility perception of farmers towards PDKV Liquid Micro Grades. Utility perception of respondents regarding PDKV Liquid Micro Grades maximum number of the farmers (90.00%) strongly agreed with the quality parameters, its applicability, its effect and its utility in increasing crop production. Accordingly, it can assume the important place in the market. Hence, necessary efforts should be made to popularize this product among the general farmers by the concern agencies.

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