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Extent of utilization regarding eco-friendly farming practices among the tribal farmers of Baihar block of Balaghat district Madhya Pradesh

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Abstract

This study was conducted to find out the inherent pattern of utilization of eco-friendly paddy farming practices among the tribal farming community, which is generally characterized as a closest community with nature and due to their low economic and awareness status usually adopts low cost farming practices from their tradition and heritage. This research study is completely based on field level data collected through well prepared structured interview schedule. The study was conducted in tribal dominated Baihar block of Balaghat district, Madhya Pradesh during year 2015-16. Balaghat district comes under Chattishgarh plains a Rice zone of the state. Total 120 farmers were selected from 10 tribal villages of block through proportionate random sampling method. The results of this study shows that majority of farmers (52.5%) having low level of utilization followed by medium (33.33%) and high extent (14.17%) of utilization of eco-friendly farming practices among them.

Keywords: Eco-friendly farming practices, tribal farming community, level of utilization

Introduction

Eco-friendly and environmental friendly are synonyms used to refer the goods and services considered to inflict minimum or no harm on the environment. Promotion of eco-friendly agriculture does not means total replacement of the use of chemicals in fact, bio-fertilizers and organic manures should be used to supplement chemical fertilizer in increasing crop production for maintaining the health of soil. It works in harmony with nature rather than against it. It unifies under one umbrella the concepts of 'ecological' and 'economical' in the belief that unless agriculture was ecological it could not be economical. But at present situational most 40-60 per cent of agricultural crops are grown with the use of different types of chemical fertilizers (www.environment.co.za) which results in around 40 per cent of agricultural land has been strongly degraded over past 50 years by intensive use (World Resources Institute 2013) [8]. Indiscriminate use of high analysis fertilizers has caused several problems on farm as well as outside farm. Out of total terrestrial earth surface 36 per cent is suitable for crop production (Food and Agriculture Organization 2015) [11]. According to 5th Government report (2016) [5] a quarter of the land of India around 32 per cent going through land degradation due to deforestation and desertification therefore; the methods chosen for agriculture are making a great impact on the environment and natural life.

Under present scenario of climate change eco-friendly farming provides a most appropriate way to sustain or to manage the natural resources. Eco-friendly farming combines some agricultural approaches like Integrated Pest Management, Integrated Nutrient Management, Integrated Weed Management, Soil, Water and Residue Management practices. These approaches advocated for use of resistant crop varieties, balanced nutrient supply, use of cow dung, cow urine, use of vermi-compost, use of parasites and predators, use of traps, neem oil and extract, crop rotation, mulching, use of biodegradable pesticides etc.

Paddy is world's second most important crop and it contributes an important part in national economy of India. Around 65 per cent of total Indian population eat rice (Nipuna Rice Products 2009) [16]. So the practices which are adopted for paddy crop production make a greater impact in our nature and lives. Paddy is one of the major crop of Madhya Pradesh with area, Production, and productivity of 1882.6 thousand ha, 2775 thousand tones and 1474 kg/ha respectively (International Plant Nutrition Institute 2013-14) [14]. The socio cultural as well as the economic life of this region's tribal farming community is integrally associated with paddy

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farming, Hence this study was conducted at this Rice zone of Madhya Pradesh to get an insight in to the extent of utilization of eco-friendly farming practices among the tribal farmers of Baihar block of Balaghat district. The major findings of this study will provide an information regarding their pattern of farming, utilization level and barriers in adoption of this practices as well as their level of awareness towards eco-friendly farming, which may be helpful for designing different Agricultural extension strategies' and making govt. policies and programs for their welfare.

Research Methodology

The present study was conducted in Baihar block of Balaghat district (Madhya Pradesh) purposively because this block contains highest tribal's population than other blocks of Balaghat district. The block comprises of 330 villages out of which 10 villages namely Amgaon, Bhari, Birwa, Kohka, Mohbatta, Pipariya, Katangi, Singbagh, Newargaon and Mowala were selected. Through the use of proportionate random sampling (proportion of 22.8 of total population) a fixed proportion of respondents were selected from each village to make the total sample size of 120 respondents. The data were collected through well-structured interview schedule. The data were analyzed through mean and percentage. For the study of extent of utilization regarding these practices, 8 major management practices of eco-friendly

farming were selected which are using in paddy cultivation namely; Soil conservation, water conservation, Seed management, Integrated weed management, Integrated disease & pest management, Integrated nutrient management, Storage management and Residual management practices. The total score obtained by each respondent from all the eight practices was the utilization score of an individual respondent was calculated by using the index as described below:

$$\frac{\text{Total obtained score}}{\text{Total obtainable score}} \times 100$$

After thorough review of relevant literature and in consultation with experts of relevant field the potential an index was prepared for measuring their utilization regarding eco-friendly farming practices. The extent of utilization was classified in three groups viz. low, medium and high on the basis of percentage.

Result and Discussion

The major findings of the research study shown that the extent of utilization towards eco-friendly paddy farming practices among the respondents was highest for storage management practices, followed by seed management practices than for soil conservation practices while the utilization level was lowest for biological weed management practices (Table 1.).

Table 1: Extent of Utilization regarding major Eco-friendly Paddy farming practices

S. No.	Practices	Mean	Rank
1.	Soil conservation	1.95	III
2.	Water conservation	1.46	X
3.	Seed management	2.26	II
4.	Integrated weed management		
a.	Mechanical weed management	1.07	XII
b.	Cultural weed management	1.57	VII
c.	Biological weed management	1.2	XI
5.	Integrated disease and pest management		
a.	Cultural control	1.74	IV
b.	Mechanical control	1.54	VIII
c.	Biological control	1.66	V
6.	Integrated nutrient management	1.53	IX
7.	Storage management	2.82	I
8.	Residual management	1.63	VI
	Overall mean	1.69	

So from the respective mean scores of eight different eco-friendly farming practices it was concluded that majority of farmers which was 52.5 per cent had comes under low extent of utilization while 33.33 and 14.17 percent of farmers had respectively medium and high extent of utilization regarding these eco-friendly farming practices (Table 2.).

Table 2: Distribution of the respondents according to the extent of utilization towards eco-friendly farming practices of paddy crop

S. No.	Categories	No. of respondents	Percentage
1	Low (45 to 75)	63	52.5
2	Medium (76 to 105)	40	33.33
3	High (106 to 135)	17	14.17
	Total	120	100

This findings clearly indicates that the major part of selected 120 tribal respondents had found under low to medium level of utilization of these eco-friendly paddy farming practices. This was the results from an tribal rice farming community which are expected to a nature's friendly community, it means

that the concept of eco-friendly agriculture is still needs to extend among this type of areas where farmers only works with their traditional farming philosophy without any awareness about the broad problems of climate change as well as degradation of environmental resources. Hence this calls for hand on training programs for farmers by the experts in this field to improve their knowledge and skills towards eco-friendly farming technologies. This finding finds support with Vijayalayan (2001) [7], Pyasi (2009) [6], Pawar *et al.* (2012), Das (2015) [4], Indeche and Ondieki-Mwaura (2015) [13], Hari Krishna (2016) [12], Meshram *et al.* (2016) [15].

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