

To Determination the Level of Knowledge of Respondents about Integrated Disease Management Practices of Rice Crop in Lailunga Block of Raigarh District (Chhattisgarh)

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ABSTRACT

A study on Adoption of integrated disease management practices in rice crop was conducted in Raigarh district of Chhattisgarh covering one block, six purposively selected villages and 120 randomly selected respondents to know the adoption of integrated disease management practices of the respondents as well as its associated correlates. A structured pre-tested interview schedule to measure the variables was prepared in consultation following standard methodology and review of literature and administered for the collection of primary data from the integrated disease management practices of rice crop by using extension personal interview technique. Thus, collected data were classified, tabulated, analyzed with application of suitable statistical tests, interpreted and logical conclusion was drawn in the light of objectives set forth. The findings inferred that 60.00 per cent of the respondents were middle aged, illiterates 30.83 per cent, up to 5 members 75.00 per cent in family size. Most of the respondents were marginal farmer 58.33 per cent land holding. Most of the respondents (50.00%) belonged to low category regarding annual income. Most of the respondents (69.17%) belonged to medium category of extension participation. Majority of the respondents had medium 72.50 per cent source of information. Majority of the respondents had medium 79.17 per cent level of social participation and had medium 67.50 per cent level of innovativeness. Most of the respondents had partially correct 66.67 per cent level of knowledge. Most of the respondents 75.83 per cent belonged to medium adopted category of adoption level. The study also revealed that socio-economic variables like, age, education, occupation, annual income, family type, family size, caste, mass media exposure, participation in extension activity, sources of information, innovativeness and knowledge were found significant at 5% level in influencing adoption behaviour of the rice crop growers.

Key words: Knowledge; Integrated disease management; Rice; Crop;

Rice (*Oryza sativa*) is grown in most of the tropical and sub-tropical regions of the world and contributes for the staple food of the millions of people. Total acreage of rice in the world is about 149.81 million hectares with a productivity of 3827 kg/ha (*Agric Stat, 1999*). India ranks second in the world, after China in rice production. India attained self-sufficiency in rice production in 1977. During 2015-16 the country has produced 87 million tons of rice. As per the estimates of ministry of Agriculture, India's estimated production in kharif 2015-16 in 73 million tons and for the whole of 2015-16, it is 87.8 million tons. The yield levels in India

are one of the lowest in the world. At present India's average yield of rice is around 2051 kg per hectare, which is much lower when compared to Egypt (8300), U.S.A. (6900), China (6300), Japan (6200), Indonesia (4260) and Vietnam (4000) (*www.Commodity India-com 2005*). In India, rice (*Oryza sativa L.*) is cultivated in 42 million hectares under four major ecosystems viz., irrigated (19 million hectares), rainfed lowland (14 million hectares), flood prone (3 million hectares) and rainfed upland (6 million hectares) ecosystems. Rice is a nutritional staple food which provides in instant energy as its most important component is Carbohydrate

(48.49gm), protein (13.5gm), fat (16.2gm), minerals (6.6gm), calcium (67mg), fiber (4.4gm), energy (393 kcal) (per 100 gram).

The rice is a rich source for many rice based products and is also used for treating many health-related problems such as diabetes, paralysis and give strength to pregnant mothers. Medicinal rice varieties like Banko (Chhattisgarh), Saraiphul (Orissa) are very common in India.

Integrated disease management: The IDM involves the need based use of fungicide only, when the disease incidence reach economic threshold level and this will promote the build- up of many bio-control agents in the crop ecosystem. Thus, IDM is most effective combination of farming techniques and limited use of fungicide

Components of IDM:

Host resistance : Resistance is the character of a plant which suppress pathogen and disease development. The use of resistance genotypes is a highly effective approach to suppress disease to tolerable levels. In resistant genotypes, disease appears late, build-up slowly and results in little damage to the crop. Its include

Biological control : In this method, the pathogen actively is reduced through the use of other living organisms example- hyper- parasites, resulting in a reduction of disease incidence and severity.

Cultural control: Included in this method are such practices as intercropping, crop rotation, field sanitation, manipulation of sowing dates etc.

Chemical control : In IDM programme chemical control implies the limited and need based use of pesticide (fungicides, insecticides, and herbicides). Chemical control is essential in areas where diseases appear in the early stage of plant growth and environmental conditions are likely to spread them.

METHODOLOGY

A study on Adoption of integrated disease management practices in rice crop was conducted in Raigarh district of Chhattisgarh covering one block, six purposively selected villages and 120 randomly selected respondents to know the adoption of integrated disease management practices of the respondents as well as its associated correlates. The Raigarh district situated in South Western part of Chhattisgarh state and lie at 21°53'60N latitude and 83°24'0E longitude with an altitude of meter above the sea level. It comes under

sub-tropical climate characterized by hot summer a monsoon rainfall followed by dry and cold winter season. The normal annual average of the district is 1531.3 mm. The maximum temperature goes as high as 42.6°C during the summer season and minimum temperature as low as 13.2°C during the winter season. Knowledge level of the integrated disease management practices in rice crop refers to the information they possess in respect of Rice crop cultivation. To measure knowledge level of the Integrated disease management practices in rice crop they were asked to reply different question about technology developed regarding Rice crop cultivation. The scoring was done on the basis of self-scoring method. This attribute have 15 statements. The responses of the integrated disease management practices in rice crop were obtained on 3-point continuum i.e. incorrect, partially correct and fully correct. The scoring was done in the order of 1, 2 and 3 respectively for positive statement and reverses for negative statement. On the basis of mean \pm S. D. it was categorized into three categories into three categories as below:

Category	Score
Low	Mean – S.D.
Medium	Mean \pm S.D.
High	Mean + S.D.

RESULTS AND DISCUSSION

The socio-economic profile of the respondents were studied and the data have been given in Table 1.

Age - It was found that 19.17 % of the respondents were in the old age group followed by middle age group 60.00per cent and young age group 20.83 per cent respectively.

Education -It was observed that 30.83 percent of the respondentswere illiterate followed by middle school 19.17 percent. 19.17 per cent were educated up to Primary school, 12.50 per cent were Literate (can read only), 10.83percent up to High School, 08.33percent were educated up to Intermediate and04.17 per cent respondents were graduate and above. Similar finding is also repored by Poonam(2010)

Occupation –Majority (63.33%) of the respondents were having farming as their main occupation followed by 21.67% farming and services and 15,00% were in farming and business. It inferred that majority of the respondents depend on farming for their day to day

earning. It can be concluded that reasonable per cent of respondents were farmers and having farming as their main occupation. Similar finding is also reported by Venkataramalu (2003)

Annual income –Half of the respondents had their annual income between up to Rs. 30,000 – 60,000, 37.50 per cent respondents had between Rs. 61,000-90,000, and 12.50 per cent respondents had income Above Rs. 90,000 per annum. Similar finding is also reported by Raghavendra(2005)

Family type - It is clear from the table that 43.34 per cent respondents were belong to joint family where as 56.66 per cent respondent were from nuclear family

Table 1. Distribution of respondents according to their socio-economic status (N=120)

Category	No.	%
<i>Age</i>		
Young (20-35 years)	25	20.83
Middle (36-50years)	72	60.00
Old (51years and above)	23	19.17
<i>Education</i>		
Illiterate	37	30.83
Literate(can read only)	15	12.50
Primary school	17	14.17
Middle school	23	19.17
High school	13	10.83
Intermediate	10	08.33
Graduate and above	05	04.17
<i>Occupation</i>		
Farming	76	63.33
Farming and services	26	21.67
Farming and business	18	15.00
<i>Annual Income</i>		
Up to Rs. 30,000-60,000	60	50.00
Rs. 60,001-90,000	45	37.50
Above Rs. 90,000	15	12.50
<i>Family type</i>		
Joint	52	43.34
Nuclear	68	56.66
<i>Land holding</i>		
Marginal farmer(less than 1 hac.)	70	58.33
Small farmer (1-3hac.)	35	29.17
Big farmer (3-5hac.)	15	12.50
<i>Social Participation</i>		
Low (less than 0.76)	11	9.16
Medium (1-4)	95	79.17
High (above 5)	14	11.67

category respectively. Similar finding is also reported by Vathsala, (2005).

Land holding –Majority (58.33%) respondents were having less than 1 hac. Of land, 29.17 per cent respondents were having 1-3 hac.of land and 12.5 per cent were having 3-5 hac of land. Similar finding is also reported by Shriwas (2011).

Social Participation - Most of the respondents (79.17%) were in medium level of social participation category followed by 11.67 per cent respondent were in the high social participation category and 9.16 per cent were in low social participation category respectively. Similar finding is also reported by Rabari (2006)

Table 2. Distribution of the respondents according to their overall adoption level about integrated disease management practices of Rice crop (N=120)

Adoption Behaviour	No.	%
Low	20	16.67
Medium	91	75.83
High	09	7.50
Total	120	100.00

It is reveals from Table 2 that three fourth of the respondents (75.83%) were under medium category of adoption, followed by low level of adoption (16.67%) and only 7.50 per cent of the farmers were found in high level of adoption of integrated disease management practices. These finding is similar the finding of Singh et al. (2011), Badodiya et ai. (2009).

The knowledge of respondent about Integrated Disease Management practices in Rice crop, the scores were divided in to three categories viz. low, medium and high.

Table 3. Level of knowledge wise distribution of respondents (N=120)

Level of Knowledge	No.	%
Incorrect (less than 15)	21	17.50
Partially correct (16 to 21)	80	66.67
Fully correct (above22)	19	15.83
Total	120	100.00

The data in the Table 1 showed that most of the respondent 66.67 per cent were found to be partially correct whereas 17.50 per cent had incorrect level of knowledge followed by 15.83 per cent of respondents who processed fully correct knowledge of Integrated Disease Management practices in Rice crop.

Table 4. Relationship between socio-economic Characteristics and adoption of Integrated Disease Management Practices in Rice crop

Characteristics	“r” value
Age	0.163*
Education	0.295*
Occupation	0.123*
Annual Income	0.062*
Family type	0.312*
Land holding	0.035 ^{NS}
Social Participation	0.012 ^{NS}
Knowledge	0.232*

* = Significant at $p = 0.005$; NS = Non Significant

Relationship between socio-economic characteristics and adoption of Integrated Disease Management Practices in Rice crop: The result of correlation analysis in above Table 4 revealed that characteristics namely Age (0.163*), Education (0.295*), Occupation (0.123*), Annual income (0.062*), Family type (0.312*), participation in extension activity and level of knowledge (0.232*) were positively and significantly related to adoption of Integrated Disease

Management Practices in Rice crop respectively. It may be due to their background. The socio-economic characteristics namely land holding (0.035^{NS}) and social participation (0.012^{NS}) were found to positively but non-significant related to adoption of integrated disease management practices in rice crop respondents respectively.

CONCLUSION

It was concluded that majority of the respondents were middle in age group literate, low level of annual income, marginal farmers, medium level of social participation, low level of innovativeness, overall medium level of knowledge. Majority of the respondents have medium level of adoption of Integrated Disease Management practices. most of the respondents 66.67 per cent had partially correct level of knowledge followed by 17.50 per cent had in correct level of knowledge whereas 15.83 per cent had fully correct level of knowledge Proper training should be provided to the respondents regarding Integrated Disease Management practices for better adoption.

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