

**Knowledge Domain of Respondents about ICM based IFS programmes in Raichur district – Analytical Study****G. N. MARADDI and MOULASAB****Assistant Professors (Agril. Extension Education)****Department of Agricultural Extension****University of Agricultural Sciences, Raichur-584 102, Karnataka state****ABSTRACT**

A Comparative study on ICM based IFS programmes in Raichur district was carried out during 2013-14. The purposive random sampling is being used, which constitutes the total sample size of 120 respondents. The ex-post-facto research design was used for the study. The data was elicited through personnel interview method and analyzed using mean, standard deviation, frequency, percentage and correlation. The major findings of the study were that, major proportion of the farmers before implementing IFS programme were identified in low to medium knowledge category (78.33%), whereas in case of the farmers after implementing IFS programme major proportion of the farmers belonged to medium to high knowledge level category (81.67%). Majority of farmers before implementing IFS programme had knowledge about the inter cultivation practices (74.17%) and proper time for FYM application (70.00%) followed by summer ploughing (68.33%), suitable month for redgram sowing (56.67%), recommended seed rate (54.17%), important pests in redgram cultivation (54.17%) and its management (51.67%). Whereas majority of the farmers after implementing IFS programme had knowledge about summer ploughing, intercultivation practices (79.17%) and recommended seed rate (76.67%) followed by recommended variety (74.17%), proper time of FYM application (74.17%), management of pests (67.50%), suitable month for redgram sowing (61.67%) and nipping practices (56.66%). Independent variable of farmers before implementing IFS programme and after implementing IFS programme *viz.*, education, farming experience, risk orientation, achievement motivation and innovative proneness exhibited positive and significant relationship with their knowledge status about ICM based IFS programmes.

**Key words:** Knowledge Domain, ICM based programme & Relationship with SES status

## Introduction

In agriculture 84 per cent of the land holdings are less than 2 acres. The per capita availability of land has declined from 0.36 ha and is projected to touch 0.2 ha by the turn of the century. Agriculture has been the basic source of subsistence for mankind over thousands of years and it provides livelihood to over half of the world's population. Indian economy is predominantly rural and agriculture oriented where the declining trend in the average size of the farm holding poses a serious problem. Majority of them are dry lands and even irrigated areas depend on the vagaries of monsoon. In this context, if farmers concentrated on crop production they will be subjected to a high degree of uncertainty in income and employment. Hence, it is imperative to evolve suitable strategy for augmenting the income of the small and marginal farmers by combining to increase the productivity and supplement the income. In the last 50 years, food grain production was increased by 159 million tonnes and in next 50 years, food grain production will be expected to increase by 203 million tonnes.

The income from cropping for an average farmer is hardly sufficient to sustain his family. The farmer has to be assured of a regular income for a reasonable standard of living by including other enterprises. The integration of farm enterprises often suggested as the means for rapid economic development in India. India achieved some success in rising crop production through various technological and institutional changes. Crops and livestock constitute the predominant land use system of these farms. Vertical expansion of the IFS system by integrating appropriate farming system components requiring less space and time is a novel feature for ensuring periodic returns to farmers.

Integrated farming system approach is not only a reliable way of obtaining fairly high productivity with substantial fertilizer economy but also a concept of ecological soundness leading to sustainable agriculture and also deriving maximum compatibility and replenishment of organic matter by way of proper recycling of organic residues/ waste obtained through integration of enterprises like fishery, poultry, goat, milch animal, mushroom and sericulture activities.

## Material and methods

The study was conducted in Raichur district of Karnataka during the year 2013. Raichur district was purposively selected for the study because the district has been identified under ICM based IFS programme under RKVY project of University of Agricultural Sciences, Raichur. In the present investigation, ex-post facto research design was employed. This design was appropriate because the phenomenon had already

occurred. Ex-post-facto research is the most systematic empirical enquiry in which the researcher does not have any control over independent variables as their manifestation has already occurred or as they are inherent and not manipulatable thus, inferences about relations among variable were made without direct intervention from concomitant variation of independent and dependent variables. Thus the total sample size constitutes 60 respondents for the study. The data was collected using pre-tested structured interview schedule. During interview collected information both before & after implementation of ICM based IFS programme. The collected information was analyzed with using appropriate statistical tools like frequency, percentage, mean, standard deviation and correlation to draw fruitful inferences.

## **Results and discussion**

### **Overall knowledge level of redgram growers about improved cultivation practices**

The overall knowledge level of farmers before implementing IFS programme presented in Table 1 indicated that major proportion of farmers were laying from low to medium knowledge category (78.33%), while only 21.67 per cent of farmers before implementing IFS programme were belonged to the high knowledge category. In case of the farmers after implementing IFS programme major proportion of farmers were laying from medium to high knowledge category (81.67%), while meager (18.33%) per cent of farmers were belonged to the low knowledge categories. Here the farmers after implementing IFS programme had more knowledge compared to farmers before implementing IFS programme, because majority of farmers after implementing IFS programme were actively participated in demonstrations conducted by KVK in addition to more sources of information consulted from subject matter specialist. These factors might have contributed more for possession of higher knowledge of ICM based IFS programme in redgram cultivation by farmers. The results are in line with the findings of Raghavendra (2010) and Ramakrishna (2013).

### **Practice wise knowledge level of redgram growers about improved cultivation practices**

An appraisal of Table 2 revealed that in case of farmers before implementation of IFS programme, a majority of the farmers had knowledge about intercultivation practices (74.17%), proper time for FYM application (70.00%) and summer ploughing (68.33). Nearly half of the respondents known about suitable month for redgram sowing (56.67%), recommended seed rate, important pest in redgram cultivation (54.17%) and its management. Whereas less least of them had known the recommended variety (23.33%)

and recommended spacing (22.50%) followed by important disease in redgram cultivation (20.00%). The possible reason for the farmers before implementation of IFS programme to be lower knowledge about the almost all method of cultivation practices might be the fact that, majority of farmers had lack of awareness, low education level, less participation in extension activities, less exposed to mass media utilization, less sources of information consultancy, also majority of the farmers were found to have low scientific orientation and achievement motivation. An appraisal of Table 2 revealed that in case of farmers after implementation of IFS programme, majority of the farmers had knowledge about seed treatment (85.00%), summer ploughing and intercultivation (79.17%) followed by recommended seed rate (76.67%), recommended variety (74.17%), proper time of application, important pests in redgram cultivation (74.13%) and its management (67.50%), suitable month for redgram sowing (61.67%), nipping practices (56.66%), recommended spacing (49.17%), important diseases in redgram cultivation (42.50%), recommended quantity of FYM application and optimum dose of NPK fertilizer (40.00%). Whereas less least of them had known about intercropping (32.50%) and yield obtained in redgram cultivation (30.00%) followed by gypsum as soil application (23.33%) and growth regulator (11.67%).

The possible reason for the farmers after implementation of IFS programme to be medium to higher knowledge about the almost all transplanting method of cultivation practices might be the fact that, participated in demonstration conducted and training given by KVK has created a positive impact on the knowledge level of demonstration farmers about ICM practices in redgram cultivation. The knowledge obtained through the participation in demonstration conducted and training provided by KVK was significant and had positive relationship with farmers about improved practices of redgram cultivation, which clearly indicates that demonstration and training improves the knowledge level of the farmers about method of redgram cultivation practices.

In addition to the other reasons which could have contributed to higher knowledge level may be the high level of education of farmers, their high extent of extension participation and exposed to high level of mass media utilization in addition to higher per cent of scientific orientation and achievement motivation which might have contributed to their higher knowledge level about the individual practices of redgram cultivation. Hence farmers before implementation of IFS programme had low level knowledge about improved method of redgram cultivation practices when compare with farmers after implementation of IFS programme. The results are in line with the findings of Raghavendra (2010).

### **Personal, socio-economic and psychological characteristics of the respondents**

The data presented in the Table 4 revealed that, majority (46.67 %) of farmers before implementation of IFS programme and 60.00 per cent of farmers after implementing IFS programme were belonged to the middle age group. Usually farmers of middle age groups are enthusiastic and have more work efficiency than the younger and older ones. The results are in line with the findings of Sidram (2008). Twenty five per cent of farmers before implementing IFS programme and 35.00 per cent of farmers after implementing IFS programme were educated up to high school. The education generally empowers the human being not only to understand the situation but also aware of problems and solutions to get out of the deprived situation. The findings were in conformity with the results of Raghavendra (2010). It was depicted that, 48.33 per cent of farmers before implementing IFS programme and 53.33 per cent of farmers after implementing IFS programme were belonged to medium experience category. The possible reason might be that majority of the respondent's belonged to middle age group. These results were in line with the results of Binkadakatti (2008).

It was revealed that, 30.00 per cent of farmers before implementing IFS programme and 46.67 per cent of farmers after implementing IFS programme were belonged to medium farmers category. The possible reason that could be attributed to this was these who had agriculture as the main occupation of the family, almost depend on their land for their living. So they always try to possess more acres of land. It could also be their ancestor's property. The results were in line with the findings reported by Binkadakatti (2008). More than one third (36.67%) of farmers before implementing IFS programme and 65.00 per cent of farmers after implementing IFS programme were belonged to high income category. The strong reason for this could be assured irrigation facility with the majority of the respondents. This would enable the farmers to cultivate more than one and diverse crops in a year earning better income. The similar findings were reported by Raghavendra (2010).

It was observed that, 45.00 per cent of farmers before implementing IFS programme belong to low innovativeness category whereas 55.00 per cent of farmers after implementing IFS programme belonged to medium innovativeness category. Innovativeness of individual depends upon so many factors mainly education level, income, risk bearing ability. The results were in line with the results of Suresh (2004).

It was revealed that, 58.33 per cent of the farmers before implementing IFS programme were belonged to low risk orientation category, whereas, 56.67 per cent of farmers after implementing IFS programme were belonged to medium level of risk orientation category. The risk bearing capacity of individuals depend upon the personal, psychological, socio-economic characteristics. The individuals with more farming experience, better land holding, and better income had medium risk orientation. The results are in conformity with the findings of Maraddi (2006). It was observed that, 55.00 per cent of farmers before implementing IFS programme were belonged to medium achievement motivation category, whereas, 51.67 per cent of farmers after implementing IFS programme were belonged to medium achievement motivation category. Achievement motivation is more of a psychological variable which differs from individual to individual. It is assumed that achievement motivation forces the individual towards reaching some goals, which he has set for himself. The findings are in accordance with the studies conducted by Raghavendra (2010).

It was revealed that, 50.00 per cent of farmers before implementing IFS programme belonged to low scientific orientation category, whereas, 43.33 per cent of farmers after implementing IFS programme were belonged to medium scientific orientation category. It is the logical thinking, foresight and rationality which help the individual to understand the object. The results were in consonance with the findings reported by Raghavendra (2010) and Ramakrishna (2013). It was observed that, 46.67 per cent of farmers before implementing IFS programme belonged to low mass media utilization category, whereas, 41.67 per cent of farmers after implementing IFS programme were belonged to medium mass media utilization category. The reason might be the mass media provides information on experiences of successful farmers through various channels like television, radio, newspaper, farm magazine *etc.*, which reinforces confidence in other farmers to take up similar activities or try out new innovations. The results were in conformity with the findings of Ramakrishna (2013).

#### **Zero order correlation between independent variables of Redgram growers with their knowledge level & Extent of adoption of improved cultivation practices**

It was observed from the Table 5, the relationship between independent variables of respondent with their knowledge & extent of adoption of improved cultivation practices, Education & Achievement motivation of respondents had shown positive & significant relationship with their knowledge level at 1 per cent level of probability. Whereas, farming experience, risk orientation & innovative proneness of respondents has shown positive & significant relationship with their knowledge domain at 5 per cent level

of probability. Other variables like land holding, scientific orientation, mass media participation & annual income of respondents had not shown any significant relationship.

With respect to extent of adoption, Risk orientation, Achievement motivation & Innovative proneness of respondents had shown positive & significant relationship with their extent of adoption at 1 per cent level of probability. Whereas education & farming experience of respondents had shown positive & significant relationship with their extent of adoption at 5 per cent level of probability. Other variables like age, land holding, scientific orientation, mass media participation & annual income of the respondents had not shown any significant relationship with their extent of adoption of improved redgram technologies.

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**Table 1: Overall knowledge level of redgram growers about improved cultivation practices**

n=120

Sl. No.	Categories	Before IFS programme (n <sub>1</sub> = 60)		After IFS programme (n <sub>2</sub> = 60)	
		F	%	F	%
1	Low (Mean- 0.425SD)	29	48.33	11	18.33
2	Medium (Mean ± 0.425SD)	18	30.00	30	50.00
3	High (Mean + 0.425SD)	13	21.67	19	31.67
Mean		14.42		25.60	
SD		4.03		1.67	

F-Frequency, %-Percentage

**Table 2: Practice wise knowledge level of redgram growers about improved cultivation practices**  
n=120

Sl. No	Particulars	Before IFS programme		After IFS programme	
		F	%	F	%
1.	Recommended variety (TS3R)	28	23.33	89	74.17
3.	Recommended seed rate (Kg/acre)	65	54.17	92	76.67
4.	Seed treatment (With Rhizobium @500gm)	18	15.00	102	85.00
5.	Summer ploughing	82	68.33	95	79.17
6.	Suitable month for redgram sowing	68	56.67	74	61.67
7.	Recommended quantity of FYM application	9	7.50	48	40.00
8.	Proper time for FYM application	84	70.00	89	74.17
9.	Recommended spacing	27	22.50	59	49.17
10.	Optimum dose of fertilizer (Kg/acre) NPK	3	2.50	48	40.00
11.	Soil application (Gypsum @ 45-50 kg/ ac)	12	10.00	28	23.33
12.	Growth regulator (NAA/ Planofix @.5 ml/lit. water)	0	0.00	14	11.67
13.	Intercultivation	89	74.17	95	79.17
14.	Nipping practices	12	10.00	68	56.66
15.	Important pest in redgram cultivation	65	54.17	89	74.13
16.	Management of pest	62	51.67	81	67.50
17.	Important diseases in redgram cultivation	24	20.00	51	42.50
18.	Management of disease	8	6.67	24	20.00
19.	Intercrop in redgram	12	10.00	39	32.50
20.	Yield obtained in redgram cultivation	18	15.00	36	30.00

**F-Frequency, %-Percentage**

**Table 3: Distribution of the respondents according to their personal, socio-economic and psychological characteristics**

Sl. No.	Characteristics	n=120			
		Before IFS programme (n <sub>1</sub> =60)		After IFS programme (n <sub>2</sub> =60)	
		F	%	F	%
<b>1. Age</b>					
1	Young (up to 30 yrs)	12	20.00	14	23.33
2	Middle (31 to 50 yrs)	28	46.67	36	60.00
3	Old age (>51 yrs)	20	33.33	10	16.67
<b>2. Education</b>					
1	Illiterates	11	18.33	3	5.00
2	Primary (1-4 <sup>th</sup> )	10	16.67	4	6.67
3	Middle (5 <sup>th</sup> -7 <sup>th</sup> )	14	23.33	7	11.67
4	High school (8 <sup>th</sup> -10 <sup>th</sup> )	15	25.00	21	35.00
5	College (11 <sup>th</sup> -12 <sup>th</sup> )	8	13.33	15	25.00
6	Graduate (12 <sup>th</sup> & above)	2	3.33	10	16.67
<b>3. Farming experience</b>					
1	Low (Mean- 0.425SD)	17	28.33	11	18.33
2	Medium (Mean ± 0.425SD)	29	48.33	32	53.33
3	High (Mean + 0.425SD)	14	23.33	17	28.33
Mean		18.48		18.60	
SD		8.28		8.68	
<b>4. Land Holding</b>					
1	Marginal Farmers (up to 2.5 acres)	5	8.33	0	0.00
2	Small Farmers (2.51 to 5.00 acres)	10	16.67	4	6.67
3	Semi Medium Farmers (5.01 to 10.00 acres)	12	20.00	8	13.33
4	Medium Farmers (10.01 to 25.00 acres)	18	30.00	28	46.67
5	Big Farmers (>25.00 acres)	15	25.00	20	33.33
<b>5. Annual Income</b>					

1	High income (>51000)	22	36.67	39	65.00
2	Medium income (34001-51000)	17	28.33	14	23.33
3	Semi medium Income (17001-34000)	9	15.00	5	8.33
4	Low income (up to 17000)	12	20.00	2	3.33
Sl. No.	Characteristics	Before IFS programme (n <sub>1</sub> =60)		After IFS programme (n <sub>2</sub> =60)	
		F	%	F	%
<b>6. Innovativeness</b>					
1	Low (Mean- 0.425SD)	27	45.00	7	11.67
2	Medium (Mean ± 0.425SD)	21	35.00	33	55.00
3	High (Mean + 0.425SD)	12	20.00	20	33.33
Mean		15.23		17.68	
SD		2.38		1.72	
<b>7. Risk orientation</b>					
1	Low (Mean- 0.425SD)	35	58.33	10	16.67
2	Medium (Mean ± 0.425SD))	18	30.00	34	56.67
3	High (Mean + 0.425SD)	7	11.67	16	26.67
Mean		2.68		4.13	
SD		1.08		1.02	
<b>8. Achievement motivation</b>					
1	Low (Mean- 0.425SD)	33	55.00	10	16.67
2	Medium (Mean ± 0.425SD)	17	28.33	31	51.67
3	High (Mean + 0.425SD)	10	16.67	19	31.67
Mean		5.85		7.28	
SD		1.64		1.24	
<b>9. Scientific orientation</b>					
1	Low (Mean- 0.425SD)	30	50.00	13	21.67
2	Medium (Mean ± 0.425SD)	21	35.00	26	43.33
3	High (Mean + 0.425SD)	9	15.00	21	35.00
Mean		4.90		9.20	
SD		1.59		1.02	
<b>10. Mass media utilization</b>					
1	Low (Mean- 0.425SD)	28	46.67	15	25.00

2	Medium (Mean $\pm$ 0.425SD)	16	26.67	25	41.67
3	High (Mean + 0.425SD)	14	23.33	20	33.33
Mean		5.88		9.23	
SD		3.59		3.9	

F-Frequency, %-Percentage

Table 4: Distribution of the respondents according to their extension participation

n=120

Sl. No.	Category	Before IFS programme (n <sub>1</sub> = 60)						After IFS programme (n <sub>2</sub> = 60)					
		Regular		Occasional		Never		Regular		Occasional		Never	
		F	%	F	%	F	%	F	%	F	%	F	%
a)	Training	5	8.33	14	23.33	41	68.33	37	61.67	14	23.33	9	15.00
b)	Extension meeting	6	10.00	24	40.00	30	50.00	27	45.00	31	51.67	2	3.33
c)	Demonstrations	10	16.66	8	13.33	42	70.00	44	73.33	16	26.67	0	0.00
d)	Krishimela	16	26.67	31	51.67	13	21.67	30	50.00	23	38.33	7	11.67
e)	Field day	8	13.33	16	26.67	36	60.00	34	56.67	19	31.67	7	11.67
f)	Field visit	5	8.33	20	33.33	35	58.33	21	35.00	28	46.67	11	18.33
g)	Group discussion	5	8.33	33	55.00	22	36.67	20	33.33	31	51.67	9	15.00
h)	Educational tour	4	6.67	11	18.33	45	75.00	19	31.67	26	43.33	15	25.00

F-Frequency, %-Percentage

**Table 5: Zero order correlation between independent variables of Redgram growers with their knowledge level & Extent of adoption of improved cultivation practices**

n=120

Sl. No.	Independent variables	Correlation coefficients (r) with knowledge level	Correlation coefficients (r) with extent of adoption
1.	Age	0.068NS	-0.094 NS
2.	Education	0.365**	0.214*
3.	Land holding	0.142 NS	0.108 NS
4.	Farming experience	0.257*	0.206*
5.	Risk orientation	0.340*	0.312**
6.	Scientific orientation	0.134 NS	0.070 NS
7.	Achievement motivation	0.398**	0.267**
8.	Innovative proneness	0.256*	0.291**
9.	Mass media participation	0.168 NS	0.163 NS
10.	Annual income	0.026 NS	0.116 NS

\* - Significance at 5% level of probability

\*\* - Significance at 1% level of probability

NS – Non-significant