Knowledge Level of Paddy Farmers in East Godavari District of Andhra Pradesh

R. Praveen Babu[*1], G. Sivanarayana[2] and T. Gopikrishna[3]

ABSTRACT: *Rice is the most important cereal crop in India. The study was conducted in four mandals in East Godavari district, a total of 120 paddy farmers were selected based on proportionate random sampling. Majority of the paddy farmers had medium level of knowledge followed by high (23.33%) and low (16.67%) level of knowledge. The correlation analysis revealed that education, social participation, extension contact, mass media exposure, innovativeness, risk orientation, market orientation and economic orientation were significant at 0.01 level of probability. Many of the paddy farmers had correct knowledge about the application of the nitrogenous fertilizers, green manure crops, recommended distance for formation of alley ways, recommended dosage of fertilizers, optimum stage of harvesting of crop. Further regression analysis revealed that all the selected 14 independent variables put together, explained about 89.80 per cent variation in knowledge of respondents.*

Key words: Paddy farmers, knowledge level, Innovativeness; Market orientation

India has the world's largest area devoted to rice cultivation. it is one of the important cereal crops of India which occupies 1/3rd of the total cultivated area and it occupies about 36.95 million hectares, with production of 80.41 million tonnes (*www.indiastat.com*). In Andhra Pradesh Paddy is grown over an area of 41.90 million hectares with annual production of 116.58 lakh tonnes with a productivity of 2782 Kg per hectare Though the area under paddy is more we could not meet the demand of people due to low production and productivity. This could be possible by educating farmers for making them to acquire better knowledge and skill as a prelude for successful adoption of scientific innovation which in turn will be converted to higher production. The present investigation is undertaken to measure the knowledge level of the farmers regarding various production recommendations in Paddy cultivation.

MATERIAL AND METHODS

The study was carried out in East Godavari district of Andhra Pradesh. Expost-facto research design was followed for the study. East godavari district was purposively selected because of its largest area, and productivity under paddy crop in coastal districts of Andhra Pradesh. Out of sixty mandals in district four mandals are selected purposively because of highest acreage of paddy crop in the district. from each of the selected mandal two villages each were selected based on random sampling the respondents were selected based on proportionate random sampling thus constituting a sample size of 120 respondents. The data was collected with a well structured interview schedule and obtained data was coded, classified, and tabulated. Finally statistical tools such as mean, standard deviation, frequency, percentage, correlation coefficient, and multiple linear regression were used.

RESULTS AND DISCUSSION

Table 1 showed that 60 per cent of the paddy farmers had medium level of knowledge followed by high (23.33%) and remaining with low (16.67%) level of knowledge. The plausible reason behind this might be due to their high literacy level and adequate

[1] Ph.D Scholar,
[2] Professor, Dept of Agricultural Extension, Acharya N.G Ranga Agricultural University,
[3] Professor Dept of Agricultural Extension, Acharya N.G Ranga Agricultural University
* *Email: praveenlkvm@gmail.com*

Table 1
Knowledge level of farmers about paddy farming

S.No.	Category	Respondents Frequency	Percentage
1.	Low (<68.4)	20	16.67
2.	Medium (68.5 to 88.51)	72	60
3.	High (> 88.52)	28	23.33
	Total	120	100.00
	Mean=78.49	S.D=10.01 (n=120)	

farming experience the respondents want to increase their farm income this would have motivated them to gain more knowledge on paddy cultivation The other reason for this trend could be due to majority of the farmers had medium extension contact, mass media exposure, innovativeness, scientific orientation, and risk orientation. Similar findings were reported by Shakya *et al.,* (2008).

Table 2
Knowledge of the paddy farmers with respect to individual recommended cultivation practices

	Particulars	Correct knowledge	Percentage	Incorrect knowledge	Percentage
1	Shallow planting of paddy seedlings	95	79.2	25	20.8
2	Top dressing of nitrogenous fertilizers	98	81.7	22	18.3
3	Planting of high yielding varieties	112	93.3	8	6.7
4	Selection of matured grains by soaking in salt water	18	15.0	102	85.0
5	Benefit of potash application	77	64.2	43	35.8
6	Recommended seed rate for transplanted paddy	42	35.0	78	65.0
7	Recommended dose of chemical for seed treatment	36	30.0	84	70.0
8	No. of transplanted seedlings per hill	32	26. 7	88	73.3
9	Recommended spacing for paddy	26	21. 7	94	78.3
10	Knowledge about green manure crops	107	89.1	13	10.9
11	Recommended distance for formation of alleyways	102	85	18	15
12	Recommended quantity of fertilizers	101	84.1	19	15.9
13	Pest control	56	46.7	64	53.3
14	Disease control	62	51.7	58	48.3
15	Optimum stage of harvesting of crop	104	86. 7	16	13.3
16	Controlling of rodents	74	61. 7	46	38.3
17	Method of breaking dormancy	24	20.0	96	80.0
18	Knowledge about ETL	18	15.0	102	85.0
19	Recommended quantity of ZnSO4 per acre	53	44.2	67	55.8
20	Knowledge about bio control agents	46	38.3	74	61.7
21	Knowledge about seed germination tests	21	17.5	99	82.5
22	Preventive measure for stopping germination of submerged paddy seed	87	72.5	33	27.5
23	Clipping of leaf tips to reduce pest incidence	74	61. 7	46	38.3
24	Knowledge about of light traps	14	11. 7	106	88.3
25	Knowledge about friendly insects	58	48. 3	62	51.7

It is connoted from Table 2 that more than 90.00% of the paddy farmers had correct knowledge about the high yielding varieties , further 81.11 to 89.99% of the paddy farmers had correct knowledge about the application of the nitrogenous fertilizers, knowledge about green manure crops, recommended distance for formation of alley ways, recommended dosage of fertilizers, optimum stage of harvesting of crop. Knowledge of most of the farmers was high in the above said practices most of the farmers knew the application of nitrogenous fertilizers in split doses and potash as basal dose in single application.

Around 60.00 -70.00% of the farmers have correct knowledge about practices like shallow planting of seedlings, control of rodents, benefit of potash,

Preventive measure for stopping germination of submerged paddy seed, and clipping of leaf tips to protect from pests. The possible reason is farmers of the study area were involved in scientific cultivation of the crop since few years and their past experience in cultivating the crop must also added to their present levels of knowledge about recommended rice cultivation practices.

Less than 50.00 of the farmers did not have proper knowledge on selection of matured grains by soaking in salt water, recommended seed rate for transplanting, pest and disease control, method of breaking dormancy , knowledge about ETL, seed germination tests, bio-control agents, friendly insects and usage of light traps. This is due to fact that

complexity in understanding, lack of awareness of the practice, lack of extension contact and mass media participation in educating the farmers about these practices. These findings are in conformity with the findings of the past studies of Umar *et al* (2009)and Singha *et al* (2013) .

Table 3
Relationship between the selected independent variables and the knowledge of Paddy farmers about recommended practices

S.No.	Independent variables	'r' value
1.	Age	0.309**
2.	Education	0.799**
3.	Land holding	0.490**
4.	Farming experience	0.319**
5.	Annual income	0.211*
6.	Extension contact	0.867**
7.	Social participation	0.205*
8.	Innovativeness	0.369**
9.	Risk orientation	0.738**
10.	Mass media exposure	0.694**
11	Cropping intensity	- 0.195*
12	Cosmo politeness	0.502**
13	Market orientation	0.602**
14	Economic orientation	0.479**

It was evident from the Table 3 that computed 'r' values of education, farming experience, extension contact, mass media exposure, innovativeness, risk orientation and economic orientation were significant at 0.01 level of probability the variables annual income ,social participation were significant at 0.05 level of probability showed a significant correlation whereas cropping intensity found a significant and negative correlation with the knowledge of the paddy farmers about recommended practices.

The significant and positive relationship between innovativeness and knowledge was reported by Devarani *et al* (2014) and singha *et al* (2013).Since an innovative farmer would be more curious enough to use all new farming practices relatively earlier than others and look forward for latest information on paddy farming.

However, education too had a significant and positive relationship with knowledge level reveals that educated farmers know many things than less educated/ illiterates. Since highly educated farmers collect information's from various sources like mass media as well as through interaction with experts. Similar results were also reported by Thiyagarajan *et al* (2011) and Sarma *et al* (2013).

T he results further reveals that there was a significant and positive relationship between risk orientation and knowledge level shows that farmers

face certain difficulties in practicing new farming techniques , but proper knowledge enable them to tackle risks as earlier reported by Viresh *et al (2007)* and Thiyagarajan *et al (2011).*

However, economic orientation among farmers was due to reduction in cost of production which may increase their profits. Social participation too had a significant and positive relationship with knowledge level reveals that frequent discussion, interaction, meetings etc. with scientists, experts and extension personnel enhance their knowledge level as earlier reported by *Shakya (2008).* The results further reveals that there was a significant and positive relationship between market orientation and knowledge level. Market orientation among farmers indicate increase in their profit. Similarly extension contact enables farmers to attend a number of training programmes conducted by a number of organizations along with their discussion with experts, who besides provides training also visit successful farmers' fields.

Table 4
Multiple regression analysis of profile characteristics and knowledge level of Paddy farmers

S.No.	Independent variables	Regression coefficient	Standard error	't' value
1	Age	-0.075	.049	-1.518NS
2	Education	2.140	0.411	5.209**
3	Land holding	1.444	0.434	3.325**
4	Farming experience	1.109	0.344	3.223**
5	Annual income	.008	0.426	0.018NS
6	Extension contact	1.019	0.165	6.172**
7	Social participation	-0.076	0.094	-0.809NS
8	Innovativeness	-0.335	0.127	-2.637NS
9	Risk orientation	1.180	0.223	5.298**
10	Mass media exposure	0.479	0.162	2.960*
11	Cropping intensity	-0.171	0.653	-0.262NS
12	Cosmopoliteness	-0.074	0.208	-0.358NS
13	Market orientation	0.197	0.176	1.121NS
14	Economic orientation	0.162	0.105	1.546NS
	a = 24.912	R^2 = 0.898		

* Significant at 0.05 level of probability NS - Non-significant
** Significant at 0.01 level of probability

It was observed from table 4 that the fourteen independent variables taken on MLR analysis gave the output value R^2 as 0.898. It could be indicated that all fourteen independent variables put together have contributed to the extent of 89.8 per cent of variation in the knowledge of farmers, leaving the rest (11.2%) to extraneous effect.

Out of fourteen variables, education, extension agency contact, land holding, risk orientation and farming experience were found to be significant at

one per cent level of probability. whereas mass media exposure was found to be significant at five per cent level of probability. This means , education, extension agency contact, land holding, risk orientation farming experience and mass media exposure were contributed significantly to the prediction of the knowledge of recommended practices of Paddy cultivation. Similar assumptions were also made by earlier researchers and the present finding is in conformity with the results obtained by Thiyagarajan *et al* (2011).

CONCLUSION

Knowledge level of the farmers about paddy cultivation was found to be medium. The characteristics like innovativeness, market orientation, extension orientation and mass media exposure were significant with knowledge level of paddy farmers. Knowledge of most of the farmers was high in the practices like application of the nitrogenous fertilizers at recommended dosage, green manure crops, alley ways formation. Many of them did not have proper knowledge about ETL, seed germination tests, bio-control agents, friendly insects and usage of light traps they have to be educated and trained regarding these practices in order to increase their knowledge level. Training institutions, NGOs and extension functionaries who are in constant contact with farming community need to take into account the profile characteristics while planning and executing the agricultural development programmes as these characteristics were found to influence their knowledge about paddy cultivation.

REFERENCES

Devarani L and K. Bandhyopadhyay (2014), Development of gender-disaggregated knowledge test For measuring knowledge level of farmers In improved rice cultivation *Indian research Journal of. Extension. Education.* 14 (1):17-19

Sarma H, Talukdar and P. Mishra (2013), Impact of training on knowledge level of integrated Rice-fish farming practices *Indian research Journal of. Extension. Education.* 13 (1):23-27.

Shakya M.s., Patel M.M. and Singh V.B (2008), Knowledge level of chickpea growers about chickpea Production technology *Indian research Journal of Extension. Education.* 8 (2&3):23-27.

Singha A.K. and Sony Devi (2013), Analysis of Factors Influencing Farmers' Knowledge on Resource Conservation Technologies (RCTs) in Rice (*Oryza sativa* L.) Cultivation *Journal Agricultural Sciences*, 4(1): 13-19

Thiyagarajan, M. 2011. Impact analysis of System of Rice Intensification (SRI) among the paddy farmers of Coimbatore District. *M.Sc. (Ag.) Thesis.* Tamil Nadu Agricultural University, Coimbatore.

Umar, S. I., Ndanitsa, M. A. and Olaleye, S. R. (2009), Adoption of Improved Rice Production Technologies among Youth Farmers in Gbako Local Government Area, Niger State Dept of Agric. Economics & Extension Technology, F. U. T. Minna *Journal of Agricultural Extension June*, Vol. 13 (1) .

Viresh, K and Kiran, M. (2007), Knowledge level of the Paddy farmers on integrated management practices in Sindhudurga district of Maharashtra. *M.Sc. (Ag.)Thesis.* University of Agricultural Sciences, Dharwad, India.