Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

Maddi Harshitha
Department Agricultural
Extension Msc (Ag) Agricultural
Extension, College-Sam
Higginbottom University of
Agriculture Technology and
Science. Andhra Pradesh, India

EPK Das
Department Agricultural
Extension Msc (Ag) Agricultural
Extension, College-Sam
Higginbottom University of
Agriculture Technology and
Science. Andhra Pradesh, India

Technology adoption gap in paddy in west Godavari district in Andhra Pradesh

Maddi Harshitha and EPK Das

Abstract
The study entitled, "Technology adoption gap in paddy in west Godavari district in Andhra pradesh" was purposively conducted in Chagallu mandal of west Godavari district in Andhra Pradesh. For present study, 150 farmers were selected from 6 villages by using N^{th} method of random sampling. The main objective to study the technological gap in paddy cultivation was as certained by using exploratory design of social research. High gap was established in recommended technology such as of improved hybrid varieties, seed and seed treatment, nursery management, transplanting, IPM, INM, etc. The main reason behind existence of gap were unavailability of labours, costly seeds of improved hybrids varieties, lack of irrigation facilities, unequal distribution of rainfall, high cost of fertilizer and weedicides as experienced by majority of the paddy grower The results of the relational analysis revealed that the variables namely land holding, annual income, social participation, socio-economic status, scientific orientation, economic motivation and sources of information had significant influence of knowledge.

Keywords: Adoption gap, paddy, Godavari

Introduction
Paddy is grown on 150 million hectares which is about 11 per cent of the worlds cultivated land, in 114 countries in major ecosystems, at altitudes ranging from more than 3000 meters mean sea level in Nepal and Bhutan to 3 meters below sea level in south Indian state of Kerala. In India, archaeological findings from the Ganga valley, Koldihwah (Neolithic) site suggest that paddy cultivation dates bade to 5000 B.C. Ancient Indian scriptures, the 'Yajurveda', the 'Atharva Veda' and Smritis make mention about paddy as not just a cereal for consumption as food but also as sacred offering to the deities especially during religious and social functions. However, the general consensus is that domestication of paddy took place independently in China, India and Indonesia, giving rise to Asia's three varietal groups Japonica, Indica and Javanica. When all developing countries are considered together, paddy (rice) provides 27 per cent of dietary energy supply and 20 per cent of dietary protein intake. Over 90 per cent of the world's paddy (rice) is produced and consumed in Asia with over 2 billion people obtaining 60 to 70 per cent of their energy intake from rice and rice products. Globally, the rice productivity has gone up by almost 2.4 times in over 50 years. India stands first in paddy area, over 40 million hectares and second in production. It almost tripled from 3.4 million tonnes (milled rice) in 1966 to record production of 93.3 million tonnes with average productivity being 2.08 tonnes per hectare in 2015-16. India's target is production of 106 million tonnes of rice by 2011 and 120-130 million tonnes by 2025. This calls for an annual increase of 2.0 million tonnes coming primarily with enhancement in resource use efficiency and productivity (Anonymous, 2006). Paddy (*Oryza sativa*) is a staple crop and main source of income for millions of people in the world, and is grown in all the continents of universe. It is India's most important food crop being grown on 45 million hectares of land with an annual production of 76 million tonnes.

Therefore, he present "technology adoption gap in paddy in west Godavari district in Andhra Pradesh" was planned with the following specific objectives.
To ascertain the personal, socio-economic, and psychological characteristics of the paddy growers
To determine the extent of adoption of improved paddy production technology.
To assess the extent of technological gap between recommended and actually adopted technologies by paddy

Research Methodology
The present study was carried out in Chagallu in West Godavari district of Andhra Pradesh state as this is one of the major paddy growing area of west Godavari district.

Correspondence
Maddi Harshitha
Department Agricultural
Extension Msc (Ag) Agricultural
Extension, College-Sam
Higginbottom University of
Agriculture Technology and
Science. Andhra Pradesh, India

The use of exploratory design of social research was made in the present investigation. There are 13 districts in Andhra Pradesh state. Out of these west Godavari district of Andhra Pradesh has been selected purposively for the present study, as paddy cultivation is prevalent there. There are 47 mandals in west Godavari district. out of 47 mandals in west Godavari district, selection of chagallumandal is selected purposively as maximum number of paddy growers are available there. There are 11 villages in the chagallu mandal only 6 villages with 25 respondents were selected i.e. unagatla, muppavaram, kalavalapalle, nelaturu, bhramanagudem, chagallu field areas were selected purposively for the present study as maximum number of paddy growers are available there.

Results and Discussion

Table 1: socio-economic profile of the respondents

S. No.	Age levels	Respondents (n=150)	
		Frequency	Percentage
1	Young	16	10.67
2	Middle	101	67.33
3	Old	33	22.00
2. Education			
1	Illiterate	0	0.00
2	Primary	12	8.00
3	Middle school	22	14.67
4	High school	56	37.33
5	Higher secondary school(Intermediate)	39	26.00
6	College(graduate and above)	21	14.00
3. Land holding			
1	Marginal	11	7.33
2	Small	42	28.00
3	Semi-medium	78	52.00
4	Medium	19	12.67
5	Large	0	0.00
4. Annual income			
1	Low	13	8.67
2	Medium	135	90.00
3	High	2	1.33
1	Up to 25,000	29	19.33
2	Rs. 25,001 to Rs. 50,000	48	32.00
3	Rs. 50,001 to Rs. 75,000	50	33.34
4	Above Rs.75, 000	23	15.33
5. Social participation			
1	Low	121	80.67
2	Medium	19	12.66
3	High	10	6.67
6. Socio-economic status			
1	Very low	8	5.33
2	Low	54	36.00
3	Medium	75	50.00
4	High	6	4.00
5	Very high	7	4.67
7. Scientific orientation			
1	Low	14	9.33
2	Medium	130	86.67
3	High	6	4.00
8. Scientific orientation			
1	Low	13	8.67
2	Medium	135	90.00
3	High	2	1.33

Table 2: Distribution of respondents according to their overall knowledge about recommended paddy cultivation technologies

S No.	Knowledge level	Respondents (n=150)	
		Frequency	Percentage
1	Low	12	8.00
2	Medium	94	62.67
3	High	44	29.33
	Total	150	100.00

Table 3: Distribution of respondents according to their extent of overall level of adoption of technological gap

S. No.	Technological gap level	Respondents (n=150)	
		Number	Percentage
1	Low (upto 33.33)	29	19.33
2	Medium (33.34 to 66.66)	48	32.00
3	High (above 66.66)	73	48.67
	Total	150	100.00

Socio –economic characteristics of the respondents
The data in Table 1 shows that majority (67.33percent) of the respondents were found in the middle age group of 36 to 50 years. This was followed by 22.0 per cent respondents who were observed in old age group (above 50 years). The respondents in young age group having age upto 35 years were found to be 10.67 per cent. Thus, it may be concluded that majority of the respondents (67.33%) were of the middle age i.e. between 36 to 50 years of age. These findings were in conformity with the findings of Yakub (1985) [9], Bodadias *et al*. (2002) [1], Dudhe (2002) and Mogal (2004) [8]. It could be that majority (37.33%) of the respondents were educated up to high school level. The percentage of respondents educated upto higher secondary school was 26 per cent, middle school (14.67%), college (14%) and primary school (8%). It was interested to note that none of the respondents were found to be illiterate. The respondents in majority had formal schooling upto high school level (37.33%). These findings did support the observations of Kude (1991) [6], according to which majority of respondents (40.00%) were found to be educated up to high school level. Land holding structure when critically It is observed that above half (52%) of the respondents belong to semi-medium category of landholding possessing land in between 2.01 to 4 ha, 28.00 per cent of respondents were belonging to small land holding category possessing land in between 1.01 to 2 ha; 12.67 per cent respondents belongs to medium land holding category and none of the respondent belongs to large land holding category. However, meagre percentage of respondents (7.33%) were belonging to marginal land holding category, have land up to 1 ha. From above findings, it may be inferred that the respondents in majority (65.00%) belonged to medium category of land holding. This finding therefore, supports findings of Gogoi and Phukan (2000) [5]. The data in respect of annual income of respondents that one third (33.34%) of the respondents having annual income in between Rs. 50,001 to Rs. 75,000, followed by 32.00 per cent of the respondents having annual income between Rs. 25,001 to Rs.50, 000 and 19.33per cent of respondents had up to Rs.25, 000. While, only 15.33 per cent of the respondents had annual income above Rs. 75,000. The data in respect of social participation of respondents presented in Table 5 indicates that great majority of respondents (80.67%) had low level of social participation. This was followed by 12.66 per cent of the respondents who had medium level of social participation and only 6.67 per cent of respondents had high social participation. Thus it may be inferred that above three forth of the respondents had low level of social participation. The position of respondents in respect of socio-economic status revealed that half (50.00%) of the respondents were belonging to medium socio-economic status category. There were 36.00% to 5.33 per cent of respondents

belonging to low and very low socio-economic status group. The percentage of respondents comes under very high and high categories were 4.67 and 4.00 per cent, respectively. By and large majority of paddy growers (50.00% were found in medium socio-economic status category.) The present findings were in conformity to the findings of Kude (1991) [6], Meshram (1995) [5] and Dhande (2003) [2] who reported that majority of paddy growers belonged to medium category of socio-economic status. The position of respondents in respect of their scientific orientation in Table 8 indicates that majority (86.67%) of the respondents belongs to medium scientific orientation category. A meagre percentage of respondents (4%) were belonging to high scientific orientation category. The percentage of respondents belonging to low category was 9.33 per cent. Thus, from the above findings, it may be inferred that respondents in majority (80.83%) had medium level of scientific orientation category. Similar findings were reported by Gawande (1991) [4]. The distribution indicates that great majority of respondents (90%) were included in medium category of economic motivation. Comparatively, a small percentage (8.67%) of respondents was found to be in low category and a meagre percentage of respondents (1.33%) were included in high category of economic motivation. It leads to conclude that higher percentage of paddy grower (90 percent) had medium level of economic motivation. These findings were confirmed by the observations of Yakub (1985) [9] who found that majority of farmers (72.05%) were in medium category of economic motivation.

Knowledge and adoption of the respondents in paddy
Majority of the respondents (62.67%) possessed medium level of knowledge. As much as 29.33 per cent had high and remaining 8.00 per cent of respondents had low level of knowledge about recommended paddy cultivation technology. Nearly two third (62.67%) of paddy growers had medium level of knowledge about paddy cultivation practices.
Nearly half of the respondents (48.67%) were observed under high category of technological gap of recommended paddy cultivation practices, followed by 32.00 per cent of the respondents who were mediocre as observed in middle level of technological gap. A sizeable percentage of the respondents (19.33%) were observed in low category of technological gap.
The extent of awareness knowledge possessed by an individual's had influence on its adoption and also useful for narrowing the technological gap. Hence, practice wise awareness knowledge of the respondents about paddy cultivation technology was ascertained and the findings pertaining to these are depicted.

Table 4: Relationship of selected socio-economic characteristics of the respondents with their knowledge

S. No.	Characteristics	Coefficient of correlation `r' value
1	Age	0.060 NS
2	Education	0.333**
3	Land holding	0.434**
4	Annual income	0.505**
5	Social participation	0.404**
6	Socio-economic status	0.625**
7	Scientific orientation	0.284**
8	Economic motivation	0.220**
9	Source of information	0.419**

NS – Non significant
** Significant at 0.01 level of probability

Among selected characteristics of respondents viz. education, land holding, annual income, social participation, socio-economic status, irrigation potential, scientific orientation and sources of information were found to be positively and significantly correlated with knowledge at 0.01 level of probability. Therefore, the null hypothesis was rejected for these characteristics as significant relationship was found between these characteristics and knowledge possessed by the farmers about recommended paddy cultivation practices.
The variable namely age and family size did not show any significant correlated relationship with knowledge possessed by the respondents. Therefore, the null hypothesis for this variable was accepted.

Table 5: Relationship of selected characteristics of the respondents with their technological gap

S. No.	Characteristics	Coefficient of correlation `r' value
1	Age	0.002 NS
2	Education	-0.551**
3	Land holding	-0.597**
4	Annual income	-0.645**
5	Social participation	-0.503**
6	Socio-economic status	-0.732**
7	Scientific orientation	-0.239*
8	Economic motivation	-0.290**
9	Knowledge	-0.682**
10	Sources of information	-0.586**

It could be seen from Table 19 that among selected variables education, land holding, annual income, social participation, socio-economic, irrigation potential, economic motivation, knowledge and sources of information were negatively but significantly correlated with the technological gap at 0.01 level of probability. Therefore, the null hypothesis was not accepted and research hypothesis, for these characteristics shows that these exists significantly relation with technological gap of recommended paddy cultivation practices. However, the variable economic motivation was negatively and significantly correlated with technological gap at 0.05% level on probability. Therefore, the null hypothesis for these variables was also rejected.

Conclusion
From the present study the following conclusions were drawn. Majority of the respondents were of middle aged, educated (primary and high school level),nuclear family as agriculture as main occupation, having income ranged above Rs. 50, 001–75,000, 2-4 hectare land holding of semi medium farmer, radio as source of information, respondents had medium socio-economic status, medium adoption gap about recommended paddy cultivation practices. The various factors i.e. age and education has positive effect on knowledge whereas income did not show any effect on knowledge. age, education and income did not show any impact on adoption gap.

References
1. Bodadias K, KK Shrivastava, ML Lakhera. Technological gap in chickpea cultivation technology. Agril. Extn. Rev. 2002; 14(3):25-27.
2. Dhande HN. Adoption of university recommended rice production technology by rice growers. M. Sc. (Agri.) Thesis (Unpub.) Dr. PDKV, Akolam, 2003, 28-30.
3. Dudbe VH. Adoption of paddy technology by the farmers. M. Sc. Thesis (Unpub.) Dr. PDKV, Akola, 2002.

4. Gawande GS. Attributes of improved varieties of major crop influencing their adoption of major crop influencing their adoption. M. Sc. Thesis (Unpub.) PDKV, Akola, 1997.
5. Gogoi M, Phukan. Extent of adoption improved rice cultivation practices by farmer. Maha. J Extn. Educ. 2000; 19:190-193.
6. Kude NR. Constraints for low yield of paddy ion West Godavari district. *Ph.D. Thesis* (Unpub.) Dr. PDKV, Akola, 1991.
7. Meshram MD. Constraints in adoption of paddy cultivation practices improved varieties. *M.Sc. Thesis* (unpub.) Dr. PDKV, Akola, 1995.
8. Mogal SD. Constraints in production and marketing of soybean. M. Sc. Thesis (Unpub.), Dr. PDKV, Akola, 2004.
9. Yakub Moho, Yunus Moho. Technological gap between recommendation and adoption of dry wheat technology by wheat grower. M. Sc. Thesis (Unpub.) Dr. PDKV, Akola, 1985.