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KNOWLEDGE LEVEL OF PADDY GROWERS ABOUT THE POST HARVEST TECHNOLOGIES IN NAGAPATTINAM DISTRICT OF TAMIL NADU, INDIA

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Abstract

Paddy (*Oryza sativa*) is the staple food for 65 per cent of the population in India. It is the largest consumed calorie source among the food grains. With a per capita availability of 73.8 kg it meets 31 per cent of the total calorie requirement of the population. It has been reported that about 9 percent of paddy is lost due to use of old and outdated methods of drying and milling, improper and unscientific methods of storage, transport and handling. To identify the knowledge level of post harvest technologies in paddy cultivation, the present study was conducted in Nagapattinam district of Sirkali block, Tamil Nadu where paddy is the main cereal crop, in which 6 villages were selected, among those 120 respondents were randomly selected. The study is expected to bring to limelight, the knowledge level of post harvest technologies in paddy cultivation.

***Keywords*:** Paddy growers, post harvest technologies, knowledge

Introduction

India is the second largest producer of rice in the world next to China. In India paddy occupies the first place both in area and production. Ninety percent of this total is grown in developing countries, mostly in Asia, while Latin America and Africa produce 3.8 and 2.8 percent, respectively (FAOSTAT, 2001). It is estimated that by 2025, 10 billion people will depend on rice as a main food and demand will reach about 880 Mt. Many Asian countries and international institutions agree to the strengthening of national programmes for policy and financial support to research, seed production and extension of hybrid rice (FAO, 2001). In fact, there has been an expansion of area under high-yielding varieties (HYV), and in 1998 more than 90 percent of irrigated areas in Asia were under HYVs (Evenson, 1998). Methodology on the impact of the improvement of productivity on postharvest operations has been developed by FAO for several crops including rice (Phan, 1998). As HYVs are increasingly used, the post-harvest system must be improved, including infrastructure development and also the dissemination of technologies, allowing small and medium farmers to prevent food losses and consequently to achieve the food security which is a priority of FAO in its fight against hunger (Mejia, 2000).

The rice post-harvest system requires improvement in the use of resources for research and development, particularly with regard to the level of post-harvest losses. These losses are attributed to a combination of factors during production and post-production operations (De Padua, 1999).The post-harvest system consists of a set of operations which cover the period from harvest through to consumption. An efficient post-harvest system aims to minimize losses and maintain the quality of the crop until it reaches the final consumer. When food losses are minimized, both food security and income increase, and this are of vital importance for small and medium farmers, particularly in developing countries. From a socio-economic point of view, the implementation of an efficient post-harvest system in any community must provide equitable benefit to all those involved in the system (Grolleaud, 2001).

To minimise post harvest losses, precautions should be taken to follow proper post harvest practices. They include timely harvest at optimum moisture percentage (20 percent to 22 percent), use of proper method of harvesting; avoid excessive drying, fast drying and rewetting of grains. Ensure drying of wet grain after harvest, preferably within 24 hours to avoid heat accumulation, uniform drying to avoid hot and wet spots and mechanical damage due to handling. The losses in threshing and winnowing can be avoided using better mechanical methods. Proper sanitation during drying, milling and after milling to avoid contamination of grains and protect from insects, rodents and birds and use of proper technique of processing i.e. cleaning, parboiling and milling helps in reduction in post harvest losses. To avoid storage losses maintaining optimum moisture content i.e. 12 percent for longer period and 14 percent for shorter storage period is essential (Patil, 2003).

This paper presents an overview of knowledge level of paddy growers about the post harvest technologies in Nagapattinam district of Tamil Nadu.

Materials and Methods

Nagapattinam district in Tamil Nadu was purposively selected for this study for the following reasons. Paddy is the most important commercial crop cultivated in this district. Majority of the farmers, farm women and agricultural labourers are directly or indirectly involved in rice crop cultivation which forms the basis for the agrarian economy of Nagapattinam district. Sirkali taluk was randomly selected for the study. A total number of 120 respondents were identified from the selected six villages by using the proportionate random sampling technique. To identify the knowledge level of paddy growers about the post harvest technologies, totally seventeen technologies were selected for this study and the percentage analysis were the statistical tools used in the study.

Results and discussion

Knowledge is defined as those behaviours and test situations which emphasized the remembering either by recognition or recall of ideas, materials or phenomena.

Knowledge about an idea or technology helps an individual to go for adoption. Hence, it is necessary to analyze the knowledge level of the farmers on post harvest technologies in paddy.

Table 1 : Distribution of respondents according to their overall knowledge level of post harvest technologies in paddy

(n=120)

Sl. No	Category	Number of respondents	Per cent
1	Low	26	21.67
2	Medium	26	21.67
3	High	68	56.66
	Total	120	100

It could be inferred from Table 1, that 56.66 per cent of the respondents had high level of knowledge on post harvest technologies in paddy followed by 21.67 per cent with medium and another 21.67 per cent with low level of knowledge. This might be due to old aged respondents who have high knowledge in post harvest technologies. This finding is in congruence to the findings reported by Ramsundar (2016).

The results on the knowledge level of respondents on the selected post harvest technologies in paddy are furnished in Tables2.

Table 2 : Distribution of respondents based on knowledge level of post harvest technologies (n=120)

Sl. No	Technologies	Number	Per cent
1.	Direct sowing methods yields early	120	100.00
2.	Storage of grains in gunny bags	120	100.00
3.	Gunny bag is the ideal packing of grains for distance market	118	98.33
4.	Grain colour is used to identify the maturity of the crop	115	95.83
5.	Harvesting by machines	115	95.83
6.	Duration taken for maturity of grain is 120 days	112	93.33
7.	Storage of grain in closed and ventilated rooms	111	92.5
8.	Care during packing(transport)	111	92.5
9.	Storage in gunny bag of 60-70 kg capacity	100	83.33
10.	Mechanical harvesting is done to reduce the post harvest losses	93	77.50
11.	Draining of water for harvesting (Before 1-2 weeks)	85	70.83
12.	Straw removal and use(pick up and bundling)	87	72.50
13.	Identifying the maturity of the grain by dipping in salt water	60	50.00
14.	Chemicals used to avoid pathogens	51	42.5
15.	Processing of rice for storage and milling	25	20.83
16.	Transportation of grains for distance places by train	21	17.5
17.	Pre harvest sprays	5	4.16

It is seen from the Table 2 that cent per cent of the farmers had knowledge that direct sowing method yields early. Storing of grains in gunny bags is also known to all the respondents (100.00per cent). The reasons for the above results may be the traditional nature of these practices.

The respondents ranging from 80.00 to 99.99 per cent of the farmers had knowledge on in seven post harvest technologies viz., 'gunny bag is the correct for packing of grains for distance market', (98.33 per cent), 'grain colour to identify maturity of grain',(95.83 per cent), 'harvesting by machines', (95.83 per cent), 'duration taken for maturity of grains', (93.33 per cent),'storing grains in closed and ventilated rooms', (92.50 per cent), 'care during packing', (92.50 per cent) and 'storing in gunny bags of 60-70 kg capacity', (83.33 per cent).

The respondents ranging from 50.00 to 79.99 per cent of the farmers had knowledge on in four post harvest technologies viz., 'mechanical harvesting is done to reduce the post harvest loss', (77.50 per cent), 'straw removal and use (pick up and bundling)', (72.50 per cent), 'draining of water before harvesting (70.83 per cent) and 'identifying the maturity of grain by using water solution', (50.00 per cent).

The respondents ranging from 01.00 to 49.99 per cent of the farmers had knowledge on in four post harvest technologies viz., 'chemicals used to avoid pathogen',(42.50 per cent) ,'processing of rice for storage and milling', (20.83 per cent), 'transportation of grains for distance places by train', (17.50 per cent) and 'pre harvest spraying', (4.16 per cent).

Conclusion

The results conclude that, more than 50 per cent of the respondents (56.66 per cent) had high level of knowledge on post harvest technologies in paddy. Cent percent of the paddy growers had knowledge that direct sowing method yields early. Storing of grains in gunny bags is also known to all the respondents. More than 80 per cent of the respondents had knowledge on in seven post harvest technologies viz., gunny bag is the correct for packing of grains for distance market, grain colour to identify maturity of grain, harvesting by machines, duration taken for maturity of grains, storing grains in closed and ventilated rooms, care during packing, and storing in gunny bag of 60-70 kg capacity.

References

De Padua, D. (1999). Rice post-harvest handling in Asia. Available online at www.fftc.agnet.org/library/article.

Evenson, R. (1998). Crop genetic improvement and agricultural development. In Charting the CGIAR's

future - a new vision for 2010. Mid-Term Meeting 2000, Dresden, Germany, May 21-26, p. 2.

FAO. (2001). Workshop on policy support for rapid adoption of hybrid rice on large-scale production in Asia, Hanoi, Viet Nam, 22-23 May. FAO Final Report, p. 10.

FAOSTAT. (2001). FAO Statistical Databases. Available online at www.devtest.fao.org/cgi-bin/nph-db.pl. Accessed Feb. 2002.

Grolleaud, M. (2001). Post-harvest losses: Discovering the full story overview of the phenomenon of losses during the post-harvest system. Rome, FAO.

Mejia, D.J. (2000). An overview of rice post-harvest technology: use of small metallic silos for minimizing losses, FAO, Rome, Italy.

Patil, R.T. (2003). Post-Harvest Technology of Rice Central Institute of Post Harvest Engineering and Technology, PAU Campus, Ludhiana.

Phan, K. (1998). Study on the impact of the improvement of productivity on post-harvest operations. Final Report, FAO.

Ram, S.T. (2016). A study on sustainable sugarcane initiative (SSI) among the cane growers of cuddalore district, Unpublished M.Sc. (Ag.) Thesis, Annamalai University, Annamalai Nagar.