

# METHODS OF PADDY STORAGE IN RURAL AREAS OF ASSAM

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## ABSTRACT

The study was designed to investigate the existing storage structures along with storage practices followed by farm household of Assam. The study was conducted in six villages of upper Brahmaputra valley zone, Assam, India. The total samples comprised of 130 farm households, which were selected through multistage random sampling technique. The finding of the study showed that all the households stored paddy. Majority of the households (72%) had permanent storage structure (granary). The most important storage structures used by the respondents were locally made bamboo structures, granary and bag. *Tum* was used by the majority of the respondents for storing paddy for seed purpose. Scientific method of storage practices were never adopted by any the farm households.

## INTRODUCTION

It is well known that paddy are stored for long period before consumption. In storage the maximum losses of paddy are caused by insect, mites, microorganisms, birds, rodents, and an environmental factor i.e., moisture. And thus the losses of paddy is around 10% of the total production. The paddy retained at farm level are stored in indigenously made storage structures such as granary, locally made bamboo structures (*mar<sup>1</sup>*, *dully<sup>2</sup>* and *pachi<sup>3</sup>*), sack etc. which cannot protect the paddy completely from insect, pests, rodents, birds etc. This sort of unscientific stroing account for wastage, which is sufficient enough to feed at least 60 million people. The present situations call for the scientific storage of paddy so that post harvest losses is reduced to minimum. Keeping it in view, the present study is planned to investigate the existing storage structures along with storage practices followed by farm households of Assam.

## METHODOLOGY

The study was conducted in six villages of the upper Brahmaputra valley zone, Assam, India which were selected through multistage random sampling technique. Then percent families were selected randomly from each village and thereby all together 130 farm households constituted the sample. An elderly lady of the family, who actually participated in storing paddy was the unit of inquiry.

An interview schedule was developed in consultation with the concerned specialists and it was got pretested and validated before data collection. The background information of the respondents was also collected to establish the homogeneity of the group and also to determine the extent to which some the variables influence the difference in storage practices.

## RESULTS AND DISCUSSION

### Demographic characteristics

It was observed that 57% families were nuclear family and more than 45 per cent families belonged to large family. Most of the family (43%) belonged to backward classes. It was found that 61% belonged to the age group of 36–50 years. Educationwise, the sample was highly heterogeneous. Majority of the respondents (72%) were literate. It was revealed that 48% households solely depended on cultivation, whereas remaining 52% reported to have cultivation as secondary occupation. Economically, 51% families respondents' annual income varied between Rs. 30,000.00 to Rs. 60,000.00 and 58% families belonged to small farmer.

### Storage of Paddy

It was observed that paddy was the only food grain stored by all the respondents irrespective of farm size, locality, caste etc.

### Types and Kinds of Granary

Granary is the most important storage structure as reported by 72% households. Remaining 28% households reported to have no permanent storage structure/granary. Consequently they stored paddy in some locally made bamboo structures, bag etc. It was further observed that 51% households had *kutcha* granary and about 96% households had detached granary (Table 1). Significantly high preference for detached granary might be due to its raised platform and for multipurpose use for rearing goat, piggery etc. Rearing of piggery and poultry was found in schedule tribe and schedule caste farmer only.

Table 1. Types and kinds of granary

Types of granary	N = 93		Kinds of granary	N = 93	
	F	P(%)		F	P(%)
<i>Kutcha</i>	47	50.53	Detached	43	46.23
			Attached	4	4.30
<i>Pucca</i>	1	1.08	Detached	1	1.08
			Attached	—	—
<i>Semi pucca</i>	45	48.39	Detached	45	48.39
			Attached	—	—
Total	93	100.00		93	100.00

### Mode of Storing Paddy

It was revealed that 52% respondent families stored paddy only after threshing, 17% stored with straw, 31% stored paddy either with straw or without straw. Majority of the families

who stored paddy with straw belonged to tribal farmer, where it is a sort of tradition to thresh paddy for daily consumption. Most of the respondent families stored paddy after threshing to minimize tension in the rainy season and to remain free from threshing for the whole year.

### Storage Structures Used for Paddy and Their Seed

Findings also showed that majority of the households (88%) stored paddy in locally made bamboo structures which was followed by granary (72%) and bag (52%). It is also a custom among Assamese farm households that they do not open granary in the month of *Magh* (15 Jan. —14 Feb.). Majority of the respondents (91%) reported that paddy was separated and subsequently stored for seed purpose. It was observed that *Tum* was used by 84% households (Table 2).

**Table 2. Storage structures used for paddy and their seed**

Storage structure	N = 39			
	Paddy		Seed	
	F	%	F	%
Granary	93	71.55	—	—
Locally made bamboo structures ( <i>mar, dully, pachi</i> )	115	88.47	2	1.70
Bag	68	52.30	36	30.50
Metallic bin	—	—	—	—
<i>Pucca kothi</i>	—	—	—	—
<i>Tum</i>	—	—	99	83.90
Earthen pot	—	—	3	2.54

Note : Here N is more than 130 because one family used more than one structure.

### Measures Adopted for Storing Paddy

Storing paddy bag on dunnage, mopping of the threshing floor, sieving of paddy, sifting of paddy were very common activities invariably practiced by majority of households. Further it was observed that paddy kept for seed purpose were separated manually without using sieve to provide maximum protection to the embryo. Other activities such as using trapping method, winnowing, stored paddy immediately after sundrying, covering top of the storage structure (*mar, dully*) with straw and cowdung were rarely practiced among the farm households. It was further observed that households who considered rats and rodents as a gift of Siva did not bother for trapping method to control rats and rodents. Scientific method of storage practices were never adopted by any of the households. Thus it indicates that there is strong need for educating and motivating the farm households towards scientific storage, so as to minimize the post harvest losses.

**Table 3 Measures adopted for storing paddy**

Measures	N = 130	
	F	%
1. Sweeping of the threshing floor	130	100.00
2. Sun-drying the paddy after threshing	130	100.0
3. Smearing the wall and floor of storage structures with cowdung	127	97.69
4. Separation of old and new paddy for storing	127	97.69
5. Storing paddy bag on dunnage	114	87.70
6. Mopping of the threshing floor	113	86.92
7. Sieving of the paddy	100	76.92
8. Sifting of paddy	77	59.23
9. Using trapping method	40	30.77
10. Winnowing of paddy	33	25.93
11. Stored paddy immediately after sundrying	25	19.20
12. Covering top of the storage structures ( <i>mar, dully</i> ) with straw and cowdung	12	9.00
13. Impregnation of old jute bag in nuvan solution	—	—
14. Fumigation of paddy with E. D. B. solution	—	—
15. Introducing neem leaves to the paddy as an insecticide	—	—
16. Using anticoagulant in the store for rat control	—	—
17. Using white wash to the granary before storing	—	—
18. Mixing of inert dust with paddy for storing	—	—

1. *Mar* : Indigenous bamboo structure locally called *mar*. It is longer than *dully*. Both inner and outer walls are smeared with cowdung and mud.
2. *Dully* : It is also a bamboo structure. It is not as long as *mar* and only inner wall are smeared with cowdung and mud.
3. *Pachi* : It is also called as bamboo basket. *Pachi* is mainly used for carrying and stacking.
4. *Turn* : Specially made bamboo structures which is lined with dry paddy straw.
5. Granary (*Bhoral*) : This is the most important storage structure of Assamese people for storing paddy. It is usually constructed at raised platform. Locally this is called as *bhoral*.