

# Adoption of Scientific Grain Storage Practices and Problems faced by Farm women in Vidarbha Region of Maharashtra State



## Education

**KEYWORDS :** Adoption, scientific grain storage, farm women, knowledge

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### ABSTRACT

The study on "adoption behaviour of farm women about scientific grain storage practices" was conducted in the year 2010- 2011 in Chandur-Railway Panchayat Samiti of Amravati district in Maharashtra state. The sample of study comprised of 120 farm women randomly selected from 12 villages of Chandur- Railway Panchayat Samiti. The findings revealed that highest numbers of respondents (64.17%) were in the middle level in respect of adoption behaviour followed by low level which comprised of 23.33 per cent respondents and only few (12.50%) respondents had high adoption behaviour. The major problems faced by farm women in adoption of scientific grain storage practices were non availability of separate place for storage of grains, dangerous and hazardous nature of chemical control, lack of knowledge about fumigants, lack of information about chemical control of stored grain pest and lack of knowledge of storage pests.

### INTRODUCTION

Natural contamination of food grains is greatly influenced by environmental factors such as type of storage structure, temperature, pH, moisture, etc (Sashidhar et al, 1992). Types of structure used, length and purpose of storage grain treatment (eg, parboiling) and pre-storage practices are all important variables affecting storage losses. The importance of these regional and crop variations immediately determines certain necessary characteristics of crop storage research (Greeley, 1978).

With several problems associated with traditional modes of grain storage some modifications have been done to offer improved grain storage structures to the farmers. For small-scale storage of grains the PAU bin, Pusa bin and Hapur tekka have been proposed. The PAU bin designed by Punjab Agricultural University is a galvanized metal iron structure. The capacity ranges from 1.5 to 15 quintals.

During storage, quantitative as well as qualitative losses occur due to insects, rodents and micro-organisms. A large number of insect pests have been reported to be associated with stored grains. The occurrence and numbers of stored grain insect pests are directly related to geographical and climatic conditions. Almost all species have remarkably high rates of multiplication and, within one season, may destroy 10-15% of the grain and contaminate the rest with undesirable odors and flavors. Insect pests also play a pivotal role in transportation of storage fungi (Sinha and Sinha, 1990). Hence, in view of the importance of the study the investigation was carried out with the objective as to study the problems faced by the users in adoption of scientific grain storage practices.

### METHODOLOGY

The present study was conducted in Chandur -Railway Panchayat Samiti of Amravati district of Vidarbha region in Maharashtra state. Out of 14 Panchayat Samities, in the district, Chandur-Railway Panchayat Samiti considering large area under food grain crops was purposively selected. There are 142 villages in Chandur-Railway Panchayat Samiti. Out of which, 12 villages were selected with the help of random sampling method and from the selected village 120 farm women as respondents were selected randomly. The randomly selected villages are Savangi, Baggi, Amla, Tembhurni, Palaskhed ,Ekpada, Dahigaon, Songaon, Jalka, Manjarkhed, Kalamgaon and Karala .

Adoption in the present study was conceptualized as the actual use of improved and scientific grain storage practices by the farm women. For assessing adoption, 20 questions related to improved scientific grain storage practices were structured. The responses obtained from the farm women to these ques-

tions were rated on the three point continuum i.e. Complete adoption, Partial adoption and No adoption with the numerical score of 2, 1 and zero respectively.

$$\text{Adoption index} = \frac{\text{Adoption score actually obtained by the respondents}}{\text{Maximum obtainable adoption score by the respondents}} \times 100$$

Considering the adoption indices the respondents were categorized into following categories on equal interval basis.

Sr. No	Adoption levels	Index range
i)	Low	Upto 33.33
ii)	Medium	33.34 -66.67
iii)	High	Above 66.67

### Results and Discussions

**Table 1: Distribution of the respondents according to their level of Adoption of scientific grain storage practices.**

SN.	Practices	Adoption		
		Complete	Partial	No
1)	Drying and cleaning of harvested food grains on threshing yard.	42 (35.00%)	78 (65.00%)	00
2)	Proper drying of food grains before storage to maintain moisture level.	90 (75.00%)	30 (25.00%)	00
3)	Sun drying of food grains followed at proper time	96 (80.00%)	24 (20.00%)	00
4)	Precautionary measures undertaken in godowns / storage structure.	2 (1.67%)	63 (52.50%)	55 (45.83%)
5)	Precautionary measures undertaken during reuse of old gunny bags for grain storage.	1 (0.84%)	55 (45.83%)	64 (53.33%)
6)	Scientific air tied grain storage structures (bins, drum, khotthi) used.	37 (30.83%)	47 (39.17%)	36 (30.00%)
7)	Prevention from moisture :			
	a) Use of stand.	21 (17.50%)	42 (35.00%)	57 (47.50%)
	b) Keeping gunny bags away from ceiling	16 (13.33%)	80 (66.67%)	24 (20.00%)
	c) Keeping gunny bags away from wall	29 (24.17%)	73 (60.83%)	18 (15.00%)

	d) Cleaning of storage place regularly	75 (62.50%)	40 (33.33%)	5 (4.17%)
	e) Using polythene sheet for storage at the bottom.	30 (25.00%)	53 (44.17%)	37 (30.83%)
8)	Care taken during stacking of grain bags	19 (15.83%)	51 (42.50%)	50 (41.67%)
9)	Use of chemicals for control of pest for grain stored in bags	2 (1.66%)	38 (31.67%)	80 (66.67%)
	a) Malathion 50% sprays for 100 sq.m.area.			
	b) Malathion 50% spray on ceiling, walls, empty bins / storage structure and empty gunny bags.	1 (0.83%)	30 (25.00%)	89 (74.17%)
10)	Keeping proper air space in storage materials.	42 (35.00%)	71 (59.17%)	7 (5.83%)
11)	Precautionary measures undertaken for retaining the viability of the grains to be used as seed.	39 (32.50%)	62 (51.67%)	19 (15.83%)
12)	Use of chemicals for management of stored grain pests of cereals.	33 (27.50%)	78 (65.00%)	9 (7.50%)
13)	Fumigants used ( EDB) @ 3ml/Qtl.	3 (2.50%)	54 (45.00%)	63 (52.50%)
14)	Control of rats by using chemicals ( Malathion 50% spray or Zinc phosphide bets.)	82 (68.33%)	32 (26.67%)	6 (5.00%)
15)	Precautionary measures for managements of rats. ( Traps / rearing cats)	55 (45.83%)	57 (47.50%)	8 (6.67%)

(Figures in parenthesis indicates percentage)

The data in Table 1 reveals that farm women respondents in majority completely adopted the practice i.e. sun drying followed at appropriate time (80.00%), proper drying of food grains before storage to maintain moisture level (75.00%) and used recommended chemicals for control of rats at the places of grain storage (68.33%).

As regards partial adoption of scientific grain storage practices, keeping gunny bags away from ceiling practice was partially adopted by 66.67 per cent respondents, drying and cleaning of harvested food grain on threshing yard and use of chemicals for management of store grain pests of cereals was partially adopted by 65.00 per cent respondents each. Other major scientific grain storage practices partially adopted by above half of the respondents were keeping proper air space in storage materials (59.17%), precautionary measures under taken in godowns/ storage structure (52.50%) and precautionary measures under taken for retaining the viability of the grains to be used as seed (51.67%). It is also surprising to note that the practices i.e. use a Melathion (50%) on ceiling, walls, empty bins, storage structure and empty gunny bags and use a chemicals for control of pest for grain stored in bags (Melathion 50%) were not adopted by about three fourth and two third respondents respectively.

**Table 2: Distribution of the respondents according to their Adoption of scientific grain storage practices.**

Sr. No.	Adoption index levels	Respondents (n=120)	
		Number	Percentage
1.	Low	16	13.33
2.	Medium	72	60.00
3.	High	32	26.67
	Total	120	100.00

The data in Table 2 revealed that the higher proportion of farm women respondents (60.00%) had medium level of adoption of scientific grain storage practices followed by (26.67%) respondents who were belonged to high adoption category and a few 13.33 per cent respondents found to have low level of adoption of improved and scientific grain storage practices.

Thus, from the present study on adoption of scientific grain storage practices, it may be inferred that the farm women are mediocre in respect of adoption of scientific grain storage practices.

Problems faced by users in adoption of scientific grain storage practices

The information on Problems faced by respondent farm women while in adopting various improved scientific grain storage practices was collected and presented in Table 3.

**Table 3: Distribution of respondents according to problems faced by them in adoption of scientific grain storage practices**

Sr. No.	Problems	Respondents (N=120)	
		Number	Percentage
1	Lack of knowledge of stored grain pest.	88	73.33
2	Lack of complete information about chemical control of stored grain pest.	90	75.00
3	Lack of guidance for use of improved storage structures.	75	62.50
4	Lack of finance for construction of improved storage structures.	70	58.33
5	Dangerous and hazardous nature of chemical control.	100	83.33
6	Non availability of separate place for storage of grains.	107	89.16
7	Lack of knowledge about fumigants.	99	82.50
8	Small quantity of grains available for storage.	41	34.16
9	Costliness of construction of improved storage structure.	39	32.50

It was observed from Table 3, that major problems expressed by the majority of farm women in adoption of scientific grain storage practices were non availability of separate place for storage of grains (89.16%), dangerous and hazardous nature of chemical control (83.33%), lack of complete knowledge about fumigants (82.50%), lack of information about chemical control of stored grain pest (75.00%), lack of knowledge of stored grain pest (73.33%). Above fifty per cent respondents expressed lack of guidance for use of improved storage structure (62.50%) and lack of finance for construction of improved storage structure (58.33%) as problem faced by them. The other problems faced by about one third of the respondents were small quantity of grains available for storage (34.16%) and costliness of construction of improved storage structure (32.50%).

**Conclusion:**

Findings related to the adoption of scientific grain storage practices revealed that majority of the farm women had medium level of adoption. It was, thus, implied that the adoption of scientific grain storage practices should be made effective from productive point of view. The advantages of adoption of scientific grain storage practices should be made known by extension worker to others. It would facilitate the dissemination and the application of scientific grain storage practices more effectively by the farm women. The findings related to problems faced by the farm women in adopting various scientific grain storage practices indicates that lack of knowledge about stored grain pests, chemical control measures and fumigants, lack of guidance, dangerous and hazardous nature of use of chemicals etc. were the major problems reported by respondents. These findings emphasize the need of equipping the farm women about the knowledge of scientific grain storage practices through training and guidance. There is also a need to create awareness about the importance of control of post harvest grain losses through mass media.

## REFERENCE

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