A study on adoption of scientific storage practices of food grains

S.H. GOTYAL, S.G. ASKI, M.B. PATIL AND R.H. HANUMANAIKAR

ABSTRACT
The study was conducted in Bijapur district of Karnataka state during the year 2008 with the objective to study the adoption level of scientific grain storage practices of food grains by the farmers and also to study the relationship between profile of farmers with their adoption level of scientific food grain storage practices. 160 farmers were randomly selected as respondents for the study and pre-structured schedule was used to collect the data. The results of the study revealed that majority of the farmers had medium level of adoption behaviour of food grains. The variables like education, annual income, mass media exposure and scientific orientation had positive and significant relationship with adoption of scientific storage practices. Regarding improved storage structures, use of fumigation and use of chemical measures for food grain storage, majority of farmers have not adopted these practices. This needs to be tackled by educating through different extension methods and transfer of scientific information.

INTRODUCTION
Food grains form an important part of the vegetarian Indian diet. Grain production has been steadily increasing due to advancement in production technology, but improper storage results in high losses in grains. The post-harvest losses in India amount to 12 to 16 million metric tons of food grains each year. The monetary value of these losses amounts to more than Rs 50,000 crores per year.

Grain storage plays an important role in preventing losses which are caused mainly due to weevils, beetles, moths and rodents. It is estimated that 60-70% of food grain produced in the country is stored at home level in indigenous storage structures. The percentage of overall food crop production retained at the farm-level and the period of storage is largely a function of farm-size and yield per acre, family-size, consumption pattern, marketing pattern, form of labour payment, credit availability and future crop expectations. The storage methods range from mud structures to modern bins. The containers are made from a variety of locally available materials differing in design, shape, size and functions. The present investigation was an attempt to ascertain the adoption of scientific grain storage practices by the farmers. Keeping this in view, the present study was carried out with the specific objectives as follows: to study the profile of respondents, study the adoption of scientific storage practices of grains and to study the relationship between the profile of respondents and adoption of scientific storage practices of grains.

METHODOLOGY
The study was conducted in Bijapur district during the year 2009. In order to determine the adoption behaviour of farmers about scientific storage practices of food grains, the study was conducted purposively selected Talukas of Bijapur district namely, Indi and Sindagi Talukas. From each Taluka eight villages were randomly selected 10 farmers from each village, thus constituting total sample size of 180 respondents.

The data were collected by using prestructured schedule. The data were analysed by using frequency and percentage and correlation.
RESULTS AND DISCUSSION

The birds eye view of Table 1 reveals that majority of the respondents (60.00) belonged to middle age group followed by old age (32.50%). More number of respondents (26.87%) had studied upto Primary School and only 3.13 per cent of respondents had College level education. Forty per cent of the respondents possessed medium land holding and had annual income of Rs.20,001 to 40,000. More than 60 per cent of respondents had medium level of socio-economic status, mass media exposure and scientific orientation. Similar findings were reported by Rasekar (1998).

Practice wise adoption of scientific food grains storage by the respondents:

The data presented in Table 2 reveal that cent per cent of the respondents adopted the practice of drying the food grains before storage in order to reduce the moisture content in the food grains to avoid the attack of pests in storage. This might be due to that there is no cost involved, and it is good practice and every farmer uses to practice before storage of the food grains and they also are aware about reducing moisture in food grains before storage which avoids major pests in storage thereby prolongs the storage period without affecting the quality of grains. Eighty nine per cent of the farmers were taken care while staking the gunny bags in storage. However, the adoption of other storage practices was found to be meagre among the majority of respondents such as fumigation, use of scientific grain storage structures, use of oil for controlling pests of pulses in storage and chemical control measures adopted in storage. The reason for this might be due to less knowledge about these practices and also fumigation may not be possible in the storage conditions of farmers as they store the grains in their living house. As, it is highly poisionous, so it is difficult to practice.
Similar results were observed by Rasekar (1998).

**Categorisation of respondents according to their adoption level of scientific storage pest control practices:**

The data presented in Table 3 reveal that majority of respondents were under medium adoption category (66.87%). A very meagre (13.13%) of respondents belonged to high adoption category. This might be due to the fact the practices like sun drying before storage, maintaining less moisture in the grain were in adoption by farmers since long time and they were aware of the benefits of these practices. Similar observations were made by Rasekar (1998).

**Table 3: Categorization of respondents according to their adoption level of scientific storage pests control (n=160)**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Adoption category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Low</td>
<td>32</td>
<td>20.00</td>
</tr>
<tr>
<td>2.</td>
<td>Medium</td>
<td>107</td>
<td>66.87</td>
</tr>
<tr>
<td>3.</td>
<td>High</td>
<td>21</td>
<td>13.13</td>
</tr>
</tbody>
</table>

**Correlation co-efficient between profile of respondents and their adoption level:**

The critical analysis of Table 4 indicates that the variables like education, annual income, mass media participation, scientific orientation had poor and significant with adoption behaviour of the farmers. However, the other variables viz., age, land holding, socio-economic status did not show any significant association. The season might be a significant correlation of education, annual income and mass media participation with adoption behaviour might be that education leads to seek more information from various mass media exposure and more mass media exposure leads towards gaining more knowledge about scientific grain storage practice knowledge which leads towards more adoption. Individual with better socio-economic status was offered to get exposed themselves towards seeking more information leading to adopt more and more practices. Similar results were also observed by Kulkarni *et al.* (1990) and Rasekar (1998).

**Conclusion:**

From the study it is concluded that majority of the farmers not adopted the scientific grain storage practices like use of scientific grain storage structures, chemical control measures to control storage pests and also use of oil for control of storage pest of pulses. This can be tackled by educating farmers by conducting trainings, demonstrations, and supply of chemicals at subsidized rates and constructing of “pukha kote” scientific grain storage structures in villages and transfer of scientific grain storage information to needy farmers.

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