

Component Wise Knowledge of Respondents Regarding Fruits Processing and Preservation Activities

Abstract

The objective of the present study was to identify the component wise knowledge of respondents regarding fruits processing and preservation activities. The study was conducted in Badgaon and Girwa panchayat samities of Udaipur district of Rajasthan state. From each panchayat samiti, two villages were included in the study. The sample consisted of randomly selected 100 rural women, 25 from each village. Interview method was used for data collection. Frequency and percentage were used for analysis of data. Finding of the study reveals that respondents had poor knowledge in fruit processing and preservation activities namely-grading (36.75 MPS) packaging (26.29 MPS), marketing (22 MPS) and storage (16.30 MPS). This might be due to lack of knowledge among respondents regarding these components.

Key words: Knowledge, Rural women, Processing, Preservation and Activities.

Introduction

Fruits have great importance in human diet. It is stated that the standard of living of the people of a country can be judged by its production and per capita consumption in the world. Though India is second largest producer of fruits (46.60 million tonnes) in the world after China (60.00 million tonnes) (Anonymous, 2008-09).

Due to short life of horticultural crops, as much as 30-35 per cent of fruits and vegetables perish during harvest, storage, grading, transport, packaging and distribution, amounting to a revenue loss of Rs. 500 billion. In India only 2.2 per cent of fruits and vegetables are processed, whereas in countries like USA 65 per cent, China 23 per cent and Philippines 72 per cent are far ahead of India in reducing the wastage and enhancing the value addition and shelf life of the farm products. Hence there is a need for maximum commercial utilization of fruits and vegetables and to adopt production and marketing activities to the requirements of the world market and to cater to domestic demand which over the past year, has been increasing because of various socio-economic factors. If the nutritive value of the processed food products could be maintained, this sector will emerge as a major value-added food industry.

Women play a significant and crucial role in agricultural development and allied fields including crop production, livestock production, horticulture, post-harvest operations, agro/social forestry,

fisheries etc. The nature and extent of women's involvement in agriculture no doubt varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. They play major role in animal husbandry, horticulture and poultry which are their main source of income and it is noticed that they always involved in labor and tolerance intensive works like transplantations and weeding operations (Yashwant, 2011). The result of the research studies indicated that despite the dominance of the labor force, women in India are still facing extreme disadvantages; they have less knowledge, limited access to technology, low capital, low credit facilities etc. Thus, it is imperative and allied areas.



Material and methods

The study was conducted in Udaipur district of Rajasthan state. There are number of fruits grown in Udaipur district like- Mango, Lime, Banana, Papaya, Guava and Aonla. Out of which three fruits having highest production were selected purposively for the present study. Udaipur district consists of seventeen panchayat samities out of which two panchayat samities- *Badgaon* and *Girwa* were selected purposively on the basis of highest production of the selected fruits. A list of villages was prepared and two villages each from both the panchayat samities namely Badi and Madar from Badgaon panchayat samiti and Sesarma and Bujda from Girwa panchayat samiti were selected for the present study. A village wise list of rural women, who were growing one of the selected fruit in their orchards, was prepared. A sample of 25 rural women was randomly selected from each village making a total sample of 100 rural women from four villages. Data were collected with the help of interview schedule. Frequency, percentage and Mean Weighted Score were used for analysis of the data.

Results & Discussion

Knowledge of the Respondents Regarding Different Activities of Fruits Processing and Preservation

Knowledge is the most important component of behavior and as such it plays an important role in covert and overt behavior of human beings. Once knowledge is acquired it

produces changes in the thinking process of an individual. It helps to develop favorable attitude to take certain action in accepting an innovation. For making any programme to be effective, it is most important that people should be first aware and informed about it (Anshuman and Mistry, 2007).

To find out knowledge of the respondents about different activities of processing and preservation of fruits six activities were identified and knowledge of the respondents was judged in light of these practices. The results pertaining for the study are presented as under:-

Component Wise Knowledge of Respondents Regarding Fruits Processing and Preservation Activities

Fruit selection

Fruit selection is the first and most important task of fruits processing and preservation practices in which rural women should have appropriate knowledge about importance of selecting of proper fruit, types of fruits selected for processing and preservation and point to be kept in mind during processing and preservation.

With regard to knowledge of the respondents regarding fruit selection, Table 4.1- depicts that cent percent respondents knew about importance of selecting proper fruits. Data further shows that 77 per cent respondent knew about type of fruits selected for processing and preservation. Regarding point to be kept in mind while fruit selection, all the respondents knew that ripened fruits are best for processing and preservation and that fruits should not be infested with insects, pests and diseases, 34 per cent respondents knew that fruits should be free of foul smell and a few of them (13 %) knew about bruises and spots on fruits.

Washing

Washing of fruits helps to improve the appearance of fruit and to remove dust from it. Regarding washing it is evident from the Table 4.2 that majority of the respondents knew about necessity of washing fruits (90%) and importance of washing and washing fruits with plain water is known to 83-89 per cent of the respondents.

Grading

Grading is one of the important fruits processing and preservation practices as it determines the quality, shelf life and price of fruit. Grading is done by grouping of fruits on the basis of size, color and shape which was reported by 65 per cent respondents respectively.

Data in Table 4.3 further show that regarding importance of grading 35 per cent of the respondents knew that it is done by removing over ripened fruits, 20 per cent stated that it is helpful in removal of immature fruit which leads to decrease in shelf life and ultimately reduce the cost and earning profit.

Regarding method of grading 60 per cent respondents had knowledge that grading should be done manually so that proper removal of immature and over ripened fruits can take place. Whereas, 5 per cent of the respondents knew that grading should be performed with the help of semi-automatic grading machine which is very effective to save time, energy and money.

Since grading is one of the important steps, some considerations must be followed while grading is performed. In this respect 70 per cent respondents reported that size of the fruits should be appropriate while grading. More than one-third respondents (39%) said that rotten and over ripe fruits should be separated which not only creates unpleasant smell but harmful to other fresh fruits also. One fourth of the respondents (25%) had knowledge that grading of fruits should be done on the basis of color. A very few respondents (10%) knew that immature fruits should be separated while grading is performed.

Packaging – Packaging of fruits and vegetables is undertaken primarily to assemble the produce in convenient units for marketing and distribution. It is apparent from data presented in the Table 4.4 that 65 per cent respondents had knowledge about the concept of packaging.

Further it was found that 37 per cent respondents knew that packaging protects fruits from mishandling, 52 per cent said that it protects fruits from transport hazards while 21 per cent said that it increases shelf life of fruits. Regarding method of packaging 60 per cent respondents were familiar with manual method of packaging and a very few (5%) had knowledge about packaging of fruits through machines.

With respect to packaging material it was found that 52-56 per cent of the respondents were familiar with bamboo baskets and corrugated fiber boxes as packaging material for aonla and guava and use of wooden boxes as packaging material for mango was reported by 35 per cent of

respondents. Use of poly bags as packaging material for lime is reported by 20 per cent of the respondents. In packaging boxes fruit can be arranged in 2-3 layer and 3-4 layers according to the customer requirement was reported by 32-33 per cent respondents and fruits can be arranged in single layer was reported by only 10 per cent of the respondents respectively.

Less than half of the respondents (39-45%) knew that proper ventilation and protection from sharp edges of packaging material is needed to reduce physiological losses while packing the fruits. Whereas, more than one fourth (28%) of the respondents had knowledge about never pack loosely.

Data further revealed that 68 per cent respondents had knowledge about packaging of preserved products whereas, 36 per cent were not aware about it. Majority of the respondents 75 per cent had knowledge about packaging of preserved products in jars, 21 per cent knew that preserved products should be packed in pots and a very few 5 per cent of the respondents had knowledge that preserved products are packed in containers. None of the respondents had any kind of knowledge about commercial level packaging of preserved products.

Storage – The production of fruits is seasonal but its demand remains for longer time. From Table 4.5 it was reported by 34 and 30 per cent respondents that storage is very essential for regular supply to market and extend the consumption period of fruits. Data further reveals that 34 per cent respondents had knowledge storing fruits in cool chamber and more than one fourth 28 per cent knew of storing fruits in cupboard with wire gauge. Regarding storage temperature no one possessed knowledge about it.

Regarding precautions to be taken while storing the fruit, 14-32 per cent respondents knew that storage structure should be clean, completely dry, old and new stock should be separately stored to reduce the spoilage and proper air and ventilation be maintained in storage structure. Poor knowledge regarding this aspect was due to low participation of the respondents in this operation.

Marketing – Data in the Table 4.6 reveals that majority of the respondents (64%) knew about direct sale as marketing channel and 21 per cent respondents were familiar with the wholesaler as marketing channel and none of the respondent had knowledge regarding retailers as a channel for marketing. Regarding place of marketing 54 per cent of the respondents knew that selling the produce outside the village is best place to get good amount of money for the produce. Whereas, only 5-10 per cent of the respondent knew about the marketing of fruits in local as well as in

Krishi Upaj Mandi. None of the respondent had knowledge about marketing of fruits in private market chain.

Tables

Table 4.1:- Knowledge of the respondents regarding fruit selection.

n=100

S. No.	Items	f/%
1.	Importance of fruit selection	100
2.	Types of fruits selected for processing and preservation	77
3.	Points kept in mind while fruits selection	
a)	Ripeness	100
b)	Should not be infested with insects, pests and diseases	100
c)	Should not have bruises and spots	13
d)	Should not have fowl smell	34

Table 4.2:- Knowledge of the respondents regarding washing of fruits.

n=100

S.No.	Items	f/%
1.	Necessity of washing fruits	90
2.	Importance of washing	
a)	To remove dust	83
b)	To remove chemical	0
3.	Washing of fruits with plain water	89

Table 4.3:- Knowledge of the respondents regarding grading of fruits

n=100

S. No.	Items	f/%
1.	Concept	65
2.	Importance	
a)	To remove immature fruits	20

b)	To remove over ripened fruits	35
3.	Method of grading	
a)	Manually	60
b)	Mechanically	5
4.	Points kept in mind while grading	
a)	Size should be appropriate	70
b)	Color should be uniform	25
c)	Immature/damaged fruits should be separated	10
d)	Over ripened fruits should be separated	39

Table: 4.4: Knowledge of the respondents regarding packaging

n=100

S. No.	Items	f/%
1	Concept	65
2	Importance of packaging	
A	Protect product from miss handling	37
B	Reduce transport hazards	52
C	Increase shelf life of product	21
3	Method of packaging	
A	Manually	60
B	Mechanically	5
4	Material use for packaging	
	Mango	
A	Wooden boxes/corrugated fiber boxes (CFB)	35
	Guava	
B	Corrugated fiber boxes (CFB)	56
	Lime	
C	Poly bags	52
	Aonla	

D	Bamboo basket	52
5.	Packaging of fruits	
A	Single layer	10
B	2-3 layers	33
C	3-4 layers	32
6	Consideration while packaging	
A	Never pack loosely	28
B	Keep proper ventilation	39
C	Protect from sharp edges of packaging material	45
7	Packaging of preserved products	68
8	Types of packaging	
A	Jars	75
B	Containers	5
C	Pots	21
D	Cannes	0
9	Commercial level packaging of preserved products	0
10	Types of commercial level packaging	
A	Vacuum packaging	0
B	Gas packaging	0
C	Aseptic packaging (tetra packaging)	0
D	Modified atmosphere packaging (MAP)	0
E	Controlled atmosphere packaging (CAP)	0
F	Active packaging	0

Table: 4.5: Knowledge of the respondents regarding storage

n=100

S. No.	Items	f/%
1	Need of storage	
a)	Extend the consumption period of fruit	30
b)	Off season availability/make round the year availability	0

c)	Regular supply to market	34
2	Storage temperature	
a)	Storage of fruits in normal temperature	0
b)	Storage of fruits in cold storage	0
3	Method of storage	
a)	Refrigerator/cool chamber	34
b)	Freezer	0
c)	Cupboard with wire gauge	28
d)	Zero Energy Cool Chamber (ZECC)	0
4	Point to be kept in mind while storing fruits	
a)	Clean storage structure	14
b)	Complete dryness of storage structure	20
c)	Separate new and old stock	32
d)	Proper air ventilation in storage structure	20

Table: 4.6: Knowledge of the respondents regarding marketing

n=100

S. No.	Items	f/%
1	Different channels of marketing	
a)	Direct sale	64
b)	Wholesaler	21
c)	Retailer	0
2	Places of selling	
a)	Local market	10
b)	Outside village	54
c)	Krishi Upaj Mandi	5
d)	Private market chain	0

Conclusions

On the basis of findings, it could be concluded that the respondents had **average** knowledge about processing and preservation activities of fruits. Based on the findings it can be concluded that respondents having good knowledge about fruit selection and washing. Data further revealed that respondents possessed poor knowledge in other components namely-grading, packaging, marketing and storage. This might be due to lack of knowledge of the respondents regarding these components.

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