

# Correlation of adoption of onion growers about post-harvest techniques

■ VIJAY POSHIYA, D.M. THAKARAR AND KIRAN CHANDRAVADIA

**SUMMARY :** The present study was carried out onion grower's adoption and their relationship in post-harvest techniques in Bhavnagar districts of Gujarat. This study attempt to know adoption and their correlation of onion grower about post-harvest technology. From this study it was found that majority of the onion growers had medium level of adoption about post-harvest technique. It is envisaged that the extent of association between two variables (independent and dependent) provides the strength and direction and effects of one variable on the other variable and independent variables, which are included in present study. The variable like education, social participation, extension content, irrigation potentiality, onion crop intensity, risk orientation, extension participation, economic motivation, innovativeness and exposure to information sources were positive significant associated with the adoption of post-harvest techniques of onion.

**KEY WORDS :** Post-harvest technique, Adoption, Correlation, Age, Education, Social participation, Innovativeness

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Onion (*Allium cepa* L.) is one of the most important commercial vegetable crops grown in India. Popularly it is also known as "poor man Kasturi". It belongs to the family Alliaceae. Onion is an important underground vegetable bulb crop of tropical and sub tropical countries (Thompson and Kelly, 1979).

In order to minimize the post-harvest losses there is most need to educate farm families about scientific methods of onion harvesting, drying and curing of onion, sorting and grading and improved method of storage to enable them to make the maximum use of available produce in term of quality and quantity. Therefore, post-harvest techniques of onion must suit farmer to improve efficiency in post-harvest management and reducing drudgery in carrying out these activities.

Broadly technologies applied on the harvested crop which make it edible to human or preserve it for long period is term as a post-harvest techniques. According to the new concept, premature harvesting is recommended to minimize the harvesting losses. The moisture content of this premature harvested crop should be lowered down to the safe limit at which it can be stored for long time by the artificial drying.

## EXPERIMENTAL METHODS

For the purpose of measurement of extent of adoption a structured schedule including various recommended practices of onion post-harvest technique by the onion growers' was developed in consultation with the crop scientist and literature available and determined by adopting adoption quotient developed by Sengupta (1967).

$$\text{Adoption quotient} = \frac{\text{Number of practices used}}{\text{Number of adoption practices}} \times 100$$

The A.Q. was calculated for each respondent later on all onion growers were classified into three levels of adoption.

Low adoption group	= Mean - S. D.
Medium adoption group	= Mean ± S. D.
High adoption group	= Mean + S. D.

### MEMBERS OF THE RESEARCH FORUM

Author for Correspondence :

**VIJAY POSHIYA**, Department of Agriculture Economics, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

Coopted Authors:

**D.M. THAKARAR**, Department of Extension Education, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

**KIRAN CHANDRAVADIA**, Department of Agriculture Economics, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

To find out the relationship between dependent and independent variables, the Pearson's product moment method of computing correlation coefficient, which provided generally accepted means for measuring the relationship was used (Chandel, 1975). The formula for Pearson's product moment methods of correlation coefficient is given below :

$$r = \frac{SP(XY)}{\sqrt{SS(x), SS(y)}}$$

where,

- r = Co-efficient of correlation  
 X and Y = Two variables under study  
 SP(xy) = Sum of product of the deviations on x and y from their means  
 SS(x) = Sum of squares of deviations due to 'x' variable  
 SS(y) = Sum of squares of deviations due to 'y' variable

## EXPERIMENTAL FINDINGS AND ANALYSIS

The results of the present study as well as relevant discussions have been presented under following sub heads:

### Extent of onion growers about post-harvest techniques of onion:

From the perusal of the data in Table 1 it is clear that 55.00 per cent of the onion growers were medium adopters of post-harvest techniques of onion. A considerably less percentage of onion growers (25.00 %) and (20.00 %) were in low and high adoption group, respectively.

**Table 1 : Onion growers extent of adoption about post-harvest techniques of onion (n=100)**

Level of adoption	Frequency	Percentage
Low level of adoption (below 53.19 score)	25	25.00
Medium level of adoption (53.19 to 85.07 score)	55	55.00
High level of adoption (above 85.07 score)	20	20.00
Mean	69.13	100
S.D.	15.94	

### Relationship of dependent variable (adoption) with independent variable (selected characteristics of the onion growers) :

#### Age and extent of adoption :

It could be inferred from the Table 2 that there was negative and significant association between adoption of post-harvest techniques of onion by the respondents and their age.

The direction of association was negative and significant which indicated that adoption of post-harvest techniques by the respondents increased with decrease their age.

The probable reason for above finding might be that majority of the young onion growers were more educated and having more extension contact and social participation.

#### Education and extent of adoption :

It is concluded from the Table 2 that there was positive and significant association between adoption of post-harvest techniques of onion by the respondents and their education. The probable reason might be that educated respondents understand the new technology quickly and easily. They keep faith in new research and have higher change proneness.

**Table 2: Correlation between the selected characteristics of the respondents and their extent of adoption of post-harvest techniques of onion (n=100)**

Sr. No.	Selected characteristics	"r" value
1.	Age	-0.2034*
2.	Education	0.2715**
3.	Size of family	0.1015 <sup>NS</sup>
4.	Social participation	0.2256*
5.	Extension contact	0.2088*
6.	Annual income	0.0938 <sup>NS</sup>
7.	Size of land holding	0.1241 <sup>NS</sup>
8.	Irrigation potentiality	0.2590**
9.	Onion crop intensity	0.2187*
10.	Risk orientation	0.2016*
11.	Extension participation	0.2619**
12.	Innovativeness	0.2239*
13.	Economic motivation	0.2854**
14.	Exposure to information sources	0.2120*

NS = Non-significant , \* Significant at 0.05 level of probability = ± 0.195  
 \*\* Significant at 0.01 level of probability = ± 0.254

#### Size of family and extent of adoption :

It could be inferred from the Table 2 that there was negative and non-significant association between adoption of post-harvest techniques of onion by the respondents and their size of family.

It can be summarized that family size had no bearing with adoption. It means extent of adoption of post-harvest techniques of onion and family size of respondents was independent of each other.

#### Social participation and extent of adoption :

From Table 2, it is clear that the association was positive and significant in social participation and adoption so it can be concluded that the respondents had significant association with their adoption of post-harvest techniques of onion.

The possible reason for this might be that onion growers who participated in various organizations may have been in close contact with various sources of information and they might have availed credit and input facilities from the co-operative society.

#### Extension contact and extent of adoption :

It can be concluded from Table 2 that there was significant

relation between onion growers' adoption of post-harvest techniques of onion and their extension contact. The positive direction of relationship revealed that the adoption increased with an increase of extension contact of the respondents.

This might be due to the fact that due to participation in extension activities the respondents acquired higher knowledge and other facilities like credit, input supply at a time, to disseminate latest post-harvest techniques of onion which facilitate in higher adoption.

#### *Annual income and extent of adoption :*

It could be inferred from Table 2 that there was positive and non-significant association between adoption of post-harvest techniques of onion by the respondents and their annual income and so onion growers' adopt the post-harvest techniques for higher price of product.

This might be due to the fact that the farmers are not adopting complete post-harvest practices, so they believe that the variation in income is not due to the onion production technology resulted into no significant association with adoption of post-harvest techniques of onion.

#### *Size of land holding and extent of adoption :*

It could be observed from the Table 2 that there was non-significant association between adoption of post-harvest techniques of onion by the respondents and their size of land holding.

It can be concluded that land holding of the respondents had non-significant association with their adoption of post-harvest techniques of onion.

#### *Irrigation potentiality and extent of adoption :*

It can be concluded from the Table 2 that there was positive and significant association between adoption of post-harvest techniques of onion and their irrigation potentiality. The positive sign indicated that with increase in irrigation potentiality the adoption level of onion growers also increased.

This might be due to the fact that with increase in irrigation potentiality the respondent might have irrigated their crop at different critical stages of crop which resulted in higher yield and income.

#### *Onion crop intensity and extent of adoption :*

It can be said from the Table 2 that there was positive and significant association between onion grower's adoption of post-harvest techniques of onion and onion crop intensity. The positive direction of relationship indicated that onion growers' adoption increased with an increase in their onion crop intensity.

The probable reason might be that onion is *Rabi* cash crop. Due to the increase in crop intensity the respondents might have received more production per unit area which might

have generated more income. Thus, they can get facility of input supply and technical know-how about post-harvest techniques of onion.

#### *Risk orientation and extent of adoption :*

It can be observed from the Table 2 that there was positive significant association between onion growers adoption of post-harvest techniques of onion and risk orientation. The positive direction of relationship indicated that with increase risk orientation the adoption is increased. The probable reason for this result could be that onion growers secure benefits of high production while taking risk in adoption of post-harvest practices for onion.

#### *Extension participation and extent of adoption :*

It is concluded from the Table 2 that there was positive and significant association between post-harvest techniques of onion by the respondents and their extension participation.

The probable reason might be that due to more participation in extension activities the respondents acquired more knowledge and other facilities like credit, input supply at a time which facilitated higher adoption of different post-harvest practices for onion.

#### *Innovativeness and extent of adoption :*

It can be said from the Table 2 that there was positive significant association between onion growers' adoption of post-harvest techniques of onion and their innovativeness.

The probable reason might be that due to more innovative they tried out different post-harvest practices for onion crop.

#### *Economic motivation and extent of adoption :*

It can be inferred from the Table 2 that there was positive significant association between onion growers' adoption of post-harvest techniques of onion and their economic motivation.

The probable reason might be that due to the fact that well to do, farmers could easily invest in inputs and they also take risk easily. Further, farmers, who had more interest in improved onion quality by adopting different post-harvest practices, also had high economic status and high standard of living.

#### *Exposure to information sources and extent of adoption :*

It can be said from Table 2 that there was positive significant association between onion growers' adoption of post-harvest techniques of onion and their proximity to information sources.

#### **Conclusion :**

For the above discussion the onion growers had medium level of adoption about post-harvest technique. From the correlation analysis total eleven independent variables had

shown significant association with the extent of adoption regarding onion post-harvest techniques. Age was negative and significantly associated with the adoption of post-harvest techniques of onion while education, social participation, extension content, irrigation potentiality, onion crop intensity,

risk orientation, extension participation, economic motivation, innovativeness and exposure to information sources were positive significant associated with the adoption of post-harvest techniques of onion.

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