Correlates of Adoption Behaviour of Kagzi Lime Growers in Western Vidarbha of Maharashtra State

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ABSTRACT   *The present research study of kagzi lime growers" was purposively conducted in three Panchayat Samities viz Akola, Barshitakli and Murtizapur Panchayat Samities of Akola district .of Akola district in western Vidarbha of Maharashtra State. For present study 120 respondents were selected from 12 villages. An exploratory research design was adopted for the study. The findings indicated that, the selected characteristics of kagzi lime growers viz., education, land holding and sources of information significantly correlated with the adoption behaviour at 0.05 level of probability. The variables such as area under kagzi lime cultivation, annual income and experience in kagzi lime cultivation were positively and significantly correlated with adoption behaviour at 0.01 level of probability. The selected variables under study, jointly explain a significant amount of variation in adoption behaviour of kagzi lime growers in kagzi lime cultivation.*

INTRODUCTION:

Kagzi limes (Citrus aurantifolia Swingle) are believed to have originated from south-east Asia. In India, Kagzi lime is grown commercially in states viz. Maharashtra, Andhra Pradesh, Karnataka, Gujarat, Rajsthan, Orissa, Jharkhand and Tamil Nadu. In Maharashtra, Beed, Parbhani, Osmanabad, Jalna, Aurangabad, Ahmadnagar, Pune, Solapur, Jalgaon, Buldhana and Akola districts are under a Kagzi lime cultivation. Kagzi lime in India, is one of the most predominant lime cultivars of commercial importance. Improved varieties of Kagzi lime viz. Pramalini, Vikram, Sai Sarbati, Phule Sarbati and Balaji have been introduced in Maharashtra state. The fruits of Kagzi lime are available at throw-away prices due to glut in the market in the months of August and September. However the fruit is valued not only for its nutritional and medicinal qualities but also extensively used for the preparation of value added products like squash, syrups, cordials, manufacture of citric acid, pickles, neutraceutical, cosmetic uses and for culinary uses in the daily diet of Indians. The area under citrus in India is 8.6 lakh ha. with production of 78.74 lakh million tons of fresh fruit, of which 34 per cent sweet Orange(Mosambi), 26 per cent mandarin(Santra), 34 per cent is acid lime and 5 per cent tangerine, lemon and grapefruit. In India, the Kagzi lime is mainly cultivated in arid and semi-arid climate. The cultivation of Kagzi lime fruit is in 3.16 lakh ha. area with the production of 25.71 lakh tons with productivity of 8.14 Mt./ha. in India. In Maharashtra state, Kagzi lime area is 53,800 ha. with 2,69,,000 Mt. production. In Akola district the area under Kagzi lime is 2024 ha, production is 12144 million tones and productivity is 60 q/ha. Thus, it was indicated that Kagzi lime is one of the most economically important fruit crop of Vidarbha region next to Mandarin.

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region next to Mandarin. In Maharashtra, Beed, Parbhani, Osmanabad, Jalna, Aurangabad, Ahmadnagar, Pune, Solapur, Jalgaon, Buldhana & Akola districts are under a lime cultivation. The area under Kagzi lime cultivation is increasing day by day in

Maharashtra State. If the various cultural practices and other scientific techniques of Kagzi lime area followed by the cultivators as a result per hectare yield of Kagzi lime may increased to its maximum level.

METHODOLOGY

The present study was conducted in Akola, Murtizapur and Barshitakali Panchayat Samities of Akola district in Vidarbha region of Maharashtra state being more concentration of Kagzi lime cultivation in this district (2024 ha).

Sample and sampling Procedure
Selection of Panchayat Samities

The selection of three Panchayat Samities were made purposively on the basis of increasing area under Kagzi lime cultivation in Akola district. In Akola district, Akola, Barshitakli and Murtizapur Panchayat Samities having high area under Kagzi lime cultivation, which is comparatively higher as compared to other Panchayat Samities. Hence, Akola, Barshitakli and Murtizapur Panchayat Samities were selected for the study.

Selection of villages

For the purpose of study before selection of villages, the list of villages where in Kagzi lime is grown on larger area was prepared by consulting Taluka Agiculture Officer working at taluka level in State Agriculture Department. Gramsevak and Talathi of respective villages in Akola, Barshitakli and Murtizapur Panchayat Samities were having larger area under Kagzi lime cultivation. Four villages from each Panchayat Samiti were selected purposively.

Selection of respondents:

List of Kagzi lime growers with 4-5 years old orchards was obtained from District Superintendent Agriculture Office (DSAO) and Taluka Agriculture Office (TAO) under study. Ten respondents from each village were selected randomly. Thus, total 120 respondents constituted a sample for the present study. The village wise list of Kagzi lime growers cultivating conventional Kagzi lime since 5 to 9 years was prepared by the help of Gramsevak and Talathi.

Table1: Village wise respondents selected for the study.

Sr. No.	Villages	No. of respondents
A	Akola Panchayat Samiti	
1	Borgaon Manju	10
2	Washimba	10
3	Sindakhed Moreshwar	10
4	Chikhalgaon	10
B	Barshitakli Panchayat Samiti	
1	Barshitakli	10
2	Nimbi	10
3	Rajanda	10
4	Mahagaon	10
C	Murtizapur Panchayat Samiti	
1	Mana	10
2	Hirpur	10
3	Hatgaon	10
4	Kharbadi	10
Total		120

Coefficient of correlation:

The relationship between independent and dependent variables was calculated with the help of following given formula of coefficient of correlation.

$$r = \frac{1/N\Sigma XY - XY}{\sqrt{[1/N \ \Sigma X^2 - X^2] - [1/N \ \Sigma Y^2 - Y^2]}}$$

Where,

r – Coefficient of correlation
ΣX – Sum of score of variable 'X'
ΣY – Sum of score of variable 'Y'
ΣXY – Sum of product of 'X' and 'Y' variables
ΣX^2 – Sum of square of 'X' variables
ΣY^2 – Sum of square of 'Y' variables
N – Total number of respondents

RESULTS AND DISCUSSIONS:

Adoption behaviour of the Kagzi lime growers were ascertained on the basis of knowledge, attitudes and adoption about kagzi lime practices

Correlates of selected characteristics of Kagzi lime growers with their knowledge

The correlation coefficients of knowledge of Kagzi lime growers towards the Kagzi lime cultivation practices with independent variables have been depicted in Table 2.

It could be seen from Table 2 that among the selected variables, annual income and experience in kagzi lime cultivation practices were positively and highly significantly correlated with the knowledge of Kagzi lime cultivation practices. The variables namely land holding and sources of information were positively and significantly correlated with the knowledge of cultivation practices of kagzi lime. Therefore, the null hypothesis was rejected for this variable. The variables such as age, education, area under Kagzi lime cultivation, innovativeness, risk preference and extension contact were having non- significant relationship with knowledge of recommended Kagzi lime cultivation practices. Therefore, the null hypothesis was accepted for these variables.

The findings with regards to annual income and knowledge were consistent with the findings of Ahire et al. (1999).

Table 2: Coefficient of correlation of selected characteristics of the respondents with their knowledge

Sr. No.	Variable	Knowledge 'r' value
1	Age	0.0111 NS
2	Education	0.1878 NS
3	Land holding	0.1982*
4	Area under Kagzi lime cultivation	0.0638 NS
5	Annual income	0.2137 **
6	Experience in Kagzi lime cultivation	0.2663**
7	Innovativeness	0.1308 NS
8	Risk preference	0.0354 NS
9	Extension contact	0.1148 NS
10	Sources of information	0.1995*

NS – Non-significant
*- Significant at 0.05 level of probability
**- Significant at 0.01 level of probability

3. Correlates of selected characteristics of Kagzi lime growers with their attitude

The correlation coefficients of attitude of Kagzi lime growers towards the Kagzi lime cultivation practices with independent variables have been depicted in Table 3.

Table 3: Coefficient of correlation of selected characteristics of the respondents with their attitude

Sr. No.	Variable	Attitude 'r' value
1	Age	0.0438 NS
2	Education	0.2075**
3	Land holding	0.0912 NS
4	Area under Kagzi lime cultivation	0.2114**
5	Annual income	0.2328**
6	Experience in Kagzi lime cultivation	0.0081 NS
7	Innovativeness	0.0758 NS
8	Risk preference	0.1523 NS
9	Extension contact	0.1773 NS
10	Sources of information	0.2015*

NS – Non-significant
*- Significant at 0.05 level of probability
**- Significant at 0.01 level of probability

It could be seen from Table 3 that among the selected variables education, area under kagzi lime and annual income were positively and highly significantly correlated with the attitude towards kagzi lime cultivation practices. The variable sources of information was positively and significantly correlated with the attitude toward kagzi lime cultivation practices. Therefore, the null hypothesis was rejected for these variables. The variables such as age, land holding, experience in kagzi lime cultivation, innovativeness, risk preference and extension contact were having non-significant relationship with attitude towards recommended kagzi lime cultivation practices. Therefore, the null hypothesis was accepted for the variables age, land holding, experience in kagzi lime cultivation, innovativeness, risk preference and extension contact.

4. Correlates of selected characteristics of Kagzi lime growers with their adoption

The correlation coefficients of adoption of Kagzi lime growers towards the Kagzi lime cultivation practices with independent variables have been depicted in Table 4.

Table 4: Coefficient of correlation of selected characteristics of the respondents with their adoption

Sr. No.	Variable	Adoption 'r' value
1	Age	0.0733 NS
2	Education	0.0333 NS
3	Land holding	0.2387**
4	Area under Kagzi lime cultivation	0.2198**
5	Annual income	0.1992*
6	Experience in Kagzi lime cultivation	0.2283**
7	Innovativeness	0.0147 NS
8	Risk preference	0.1780 NS
9	Extension contact	0.1429NS
10	Sources of information	0.2028*

NS – Non-significant
*- Significant at 0.05 level of probability
**- Significant at 0.01 level of probability

It can be seen from Table 4 that among the selected variables land holding, area under Kagzi lime cultivation and experience in kagzi lime cultivation practices were positively and highly significantly correlated with the adoption of recommended cultivation practices of Kagzi lime. The variables namely annual income and sources of information were also positively and significantly correlated with the adoption of recommended cultivation practices of Kagzi lime. Therefore, the null hypothesis was rejected for these variables and it indicated that the respondents had adoption about recommended cultivation practices of Kagzi lime. The variables namely age, education, innovativeness, risk preference and extension contact were having non-significant relationship with adoption towards Kagzi lime cultivation practices therefore, the null hypothesis was accepted for these variables.

5. Correlates and determinants of Adoption behaviour
An attempt was made to study the adoption behaviour comprising of knowledge, attitude and adoption. The correlation coefficient of adoption behaviour with independent variables have been depicted in Table 5

It could be seen from Table 5 that amongst selected variables area under Kagzi lime cultivation, annual income and experience in Kagzi lime cultivation were positively and highly significantly correlated with the adoption behavior at 0.01 level of probability. Therefore, the null hypothesis was rejected for these variables. The variables such as education, land holding and sources of information was positively and significantly correlated with adoption behavior at 0.05 level of probability. Therefore, the null hypothesis was rejected for these variables.

The variables age, innovativeness, risk preference and extension contact were having non-significant relationship with adoption behaviour of farmers towards cultivation practices of Kagzi lime. Therefore, the null hypothesis was accepted for these variables.

The findings with regards to the variables age and education are in consistent with the findings of Chaudhari and Kadam (2000) and Chikhale et al. (1996) respectively.

Table 5: Coefficient of correlation of selected characteristics of the respondents with their adoption behaviour

Sr. No.	Variable	Adoption behavior 'r' value
1	Age	0.0226 NS
2	Education	0.2012*
3	Land holding	0.1993*
4	Area under Kagzi lime cultivation	0.2759**
5	Annual income	0.2089**
6	Experience in Kagzi lime cultivation	0.2074**
7	Innovativeness	0.1145 NS
8	Risk preference	0.0705 NS
9	Extension contact	0.0567NS
10	Sources of information	0.1999*

NS – Non-significant
*- Significant at 0.05 level of probability
**- Significant at 0.01 level of probability

Conclusion:
The findings revealed that among the selected variables area under Kagzi lime cultivation, annual income and experience in Kagzi lime cultivation were positively and highly significantly correlated with the adoption behavior at 0.01 level of probability. The variables education, land holding and sources of information were positively and significantly correlated with adoption behavior at 0.05 level of probability. The variables age, innovativeness, risk preference and extension contact were having non-significant relationship with adoption behaviour of farmers towards cultivation practices of Kagzi lime. From these findings it can be concluded that the variables such as area under Kagzi lime cultivation, annual income and experience in Kagzi lime cultivation, education, land holding and sources of information were played vital role to know the adoption behaviour of Kasgzi lime growers whereas, the variables namely age, innovativeness, risk preference and extension contact were not important to know the adoption behaviour of Kagzi lime growers.

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