



Analysis of Variations in Selling Price of Apple Fruit in Kashmir Valley:

A Case Study of District Shopian

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Abstract

Kashmir is said to be the apple bowl of India, famous for the unique and delicious production of apple varieties throughout the world. As a dominant crop of the valley “Apple” proudly represents the fruit industry of Kashmir. About 70 percent of apple in India comes from the state of Jammu and Kashmir. More than 97 percent of total apple production in the state is contributed by Kashmir division. Hundred and ten Varieties of apple are found in the state of Jammu and Kashmir. The chief varieties produced are Delicious, American, Ambri, Moharaji, Kesari and Hazaratbali. An attempt has been made to analyse the variations in selling price of apple between different varieties and regions. It has been found from the study that Kullou Delicious holds the first rank in terms of selling price followed by Delicious and American. Similar variations were found in selling price of apple between different blocks. The selling price of apple is 9741.13 Rupees in Shopian block where as it is 691.32 Rupees in Chitragam block and 689.18 Rupees in Imam Sahib block.

Key Words: *Apple orchards, Apple varieties, Horticulture production, Selling Price.*

Introduction

The Northern most state of India, Jammu and Kashmir State is predominantly an agrarian economy. Agriculture occupies an important place in the economy of the state and is basically an

agrarian economy in nature. During the last few years diversification from agriculture towards high value commercial horticulture commodities i.e. fruits, vegetables and livestock products and some world famous spices like saffron are taking place at a faster pace and is reflected in the higher share of high value commodities in the agriculture production in almost all the districts of the state. (Rather, et al., 2013). J&K State is well known for its horticultural produce both in India and abroad. The favorable agro-climatic conditions, fertile soil, sub-tropical climate are ideally suited for the cultivation of horticulture crops and thus offer immense scope for the development of horticulture sector in the state. The state offers good scope for cultivation of horticultural crops, covering a variety of temperate and sub tropical fruits. (Lone and Sen, 2014).

Among the various tropical and subtropical fruits, Jammu and Kashmir is the major producer of apple in India. As the dominant crops of the valley “*Apple*” proudly represents the fruit industry of state. About 70 percent of apple in India comes from the state of Jammu and Kashmir and the state has is known as “apple state of India” and has been declared as the “Agri. Export zone for Apples and Walnuts” (Darzi, 2016). Hundred and ten Varieties of apple are found in the state of Jammu and Kashmir. The chief varieties produced are Delicious, American, Ambri, Moharaji, Kesari and Hazaratbali (Sheikh and Tripathi, 2013). The apple in the state is limited to Kashmir division. However in Jammu division, apple cultivation is found in a limited scale in some areas of Doda district only (Singh, et. al., 2016). More than 97 percent of total apple production is contributed by Kashmir division.

In district Shopian of the Kashmir valley, the apple cultivation is found on a large scale as the district has suitable land for temperate fruits. During the year 2016-17, out of the total apple area of 162971 hectares in the state, 21663 hectares accounting for 13.31 percent was occupied by Shopian district. Out of the total apple production of 1726834 Metric tons in the state, 237001Metric Tons accounting for 13.72 percent was contributed by Shopian district. (Government of J&K, 2017).

Objectives of the study

- To examine the selling price of apple between different varieties
- To analyse the variations in selling price of apple between different regions.



Hypothesis

- The selling price of apple varies significantly between different regions

Methodology

The present study is based on secondary data as well as primary data. The secondary data has been collected from government official records, various published reports, books and journals. Primary data has been collected from the field survey through interview schedule. On the basis of high apple production, three blocks viz. Imam Sahib, Chitragam and Shopian blocks have been selected randomly from District Shopian. Respondents belonging to apple industry have been selected from each selected block on the basis of 15 per cent of the total orchardists which amounts to 200, comprising of 61 respondents from Imam Sahib block, 77 from Shopian block and 62 respondents from Chitragam block. In these blocks, selling price of apple “grade A” was worked out in order to find out the variations in selling price between different regions. In order to compare the selling price between different regions, average price of three varieties was worked out.

Statistical Analysis

Collected information was analyzed with the help of SPSS programming and Excel. Statistical package for social science (SPSS) adaptation 23.0 for windows 8.1 was used for data examination and hypothesis testing. The statistical techniques used in this study are Average, Standard deviation (S.D) and Analysis of variance (ANOVA).

Standard Deviation

Standard deviation measures the absolute dispersion or variability of dispersion: the greater the amount of dispersion or variability, the greater the standard deviation, the greater will be the magnitude of the deviations of the values from their mean and vice-versa. Standard deviation is calculated by applying the following method.

$$\sigma = \sqrt{\sum x^2}$$

N

Where,

$$\bar{x} = (x - x)$$

N = Number of observations

Analysis of variance (ANOVA)

ANOVA is a parametric statistical technique used to compare means and relative variance between different groups. ANOVA is used when there are more than two groups within the each dimension. It is expressed in the following form.

$$SS_w = \sum d^2_1 + \sum d^2_2 + \sum d^2_3 + \dots + \sum d^2_n$$

Where d = deviation of every raw score of a category from its sample mean

$$SS_b = S[(\bar{X} - \bar{X}_t)^2_{xn}]$$

Where,

\bar{X} = any sample mean

\bar{X}_t = total mean

n = number of scores

SS_b = sum of squares between groups

SS_t = total sum of square of variations.

$$SS_t = SS_b + SS_w$$

Alternatively,

$$SS_t = S(X - X_t)^2$$

X = a raw score in any sample

X_t = the total mean

SS_t = the total sum of squares

Table 1.1: Selling Price of various varieties of Apple “Grade A”

| Varieties | Mean (Rupees) | Std. Deviation | Rank |
|------------------|---------------|----------------|------|
| Delicious | 723.25 | 88.886 | 2 |
| Kullou Delicious | 920.43 | 90.862 | 1 |

| | | | |
|----------|--------|--------|---|
| American | 486.13 | 67.290 | 3 |
|----------|--------|--------|---|

Source: Computed

It is clear from the table 1.1 that the mean selling price of various varieties of apple “grade A” is presented in table 4.3. It is clear from the table that among various varieties of apple “grade A”, Delicious was sold at 723.25 Rupees, Kullou Delicious at 920.43 Rupees and American was sold at 486.13 Rupees. Hence it is concluded that Kullou Delicious holds the first rank in terms of selling price followed by Delicious and American.

Table 1.2: Block of the Respondents and Selling Price

| Average Price of Apple | Sum of Squares | df | Mean Square | F | Sig. |
|------------------------|----------------|-----|-------------|--------|------|
| Between Groups | 123560.471 | 2 | 61780.235 | 17.211 | .000 |
| Within Groups | 707127.086 | 197 | 3589.478 | | |
| Total | 830687.555 | 199 | | | |

Duncan

| Block | N | Subset for alpha = 0.05 | |
|------------|----|-------------------------|--------|
| | | 1 | 2 |
| Imam Sahib | 61 | 689.18 | |
| Chitragam | 62 | 691.32 | |
| Shopian | 77 | | 741.31 |
| Sig. | | .838 | 1.000 |

Source: Computed

In order to find out the significant difference in selling price of apple “grade A” between different blocks one-way ANOVA statistic was carried out. It has been found from the ANOVA test that calculated F value is greater than the table value at 5 percent level of significance, $F(2,197) = 17.211$, $P < 0.005$. Since the p value is less than our chosen significance level $\alpha = 0.05$,



therefore the researcher accepts the hypothesis, “Selling price of apple varies significantly between different blocks”

The results from the one-way ANOVA do not indicate which block differs significantly from other block in terms of selling price of apple. Hence, the multiple comparison Duncan test has been conducted. It has been found from the Duncan test that the selling price of apple is significantly low (689.18 Rupees) in Imam Sahib block where as it is significantly highest (9741.13 Rupees) in the Shopian block. The mean selling price of apple in Chitragam block is 691.32 Rupees. Furthermore, it is evident from the table that, there is no significant difference in selling price of apple between Imam sahib and Chitragam blocks. The selling price of apple is significantly low in these two blocks than the Shopian block.

Conclusion

As the dominant crops of the valley “Apple” proudly represents the fruit industry of state. Hundred and ten Varieties of apple are found in the state of Jammu and Kashmir. There are wide variations in selling price of apple between different varieties. Kullou Delicious holds the first rank in terms of selling price followed by Delicious and American. Similar variations were found in selling price of apple between different blocks. The selling price of apple is 9741.13 Rupees in Shopian block where as it is 691.32 Rupees in Chitragam block and 689.18 Rupees in Imam Sahib block.

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