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Estimation of marketable surplus and post-harvest losses of guava (*Psidium guajava* L.) in Kaushambi district, Uttar Pradesh

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Abstract

In India, Uttar Pradesh lies second place after Bihar in case of area under guava and ranks third after Bihar and Maharashtra in case of production of guava. Guava has a specific significance among other horticultural crops grown in the state.Study indicates that on an average 99.04 percent of the total produce was estimated to be available for sale but the actual quantity sold was only 98.43 percent. Unlike food grains both the marketable and marketed surpluses in this case were very high. This was only because of the commercial nature of this product, which is produced mainly for sale. Total physical losses born by the farmer/PHCs up to first level of marketing came to 9.47 percent of the total fruits drawn. And the real figure against marketable surplus was 90.20 percent. Farm size group wise decomposition is shown that the proportion of marketable surplus in total fruits harvested goes on increasing with the size of farm while that of total physical losses goes on decreasing.The major constraints faced by produces were non-availability of skilled labour, lack of capital, hygienic conditions, high degree of competition, and lack of proper packaging material at reasonable prices.Non availability of scientific storage facility was one of the major factors contributing to lower returns from guava. Therefore, suitable storage facilities are essential to stabilize the return of guava growers by increasing the storage life of the fruit.

Keywords – Marketable Surplus, Post-harvest Losses, Packaging, Grading

Introduction

Guava is one of-the most important fruits grown in all over the world. It is now widely grown all over the tropics and subtropics and has become the most common in the newly introduced subtropical fruits in Israel. But, it originated in tropical America and it seems to have been widely found from Mexico to

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Peru. At present, major guava producing countries are Southern Asian countries, the Hawaiian Islands, Cuba and India. Guava is estimated to be the forth-important fruit crop after mango, banana and citrus, as far as area and production are concerned.

It has been in cultivation in India since nearly seventeenth century and gradually became a crop of commercial significance. In India, the major guava producing states are Uttar Pradesh, Bihar, Madhya Pradesh and Maharashtra. The main Guava producing belts in India are presented in Appendix-8. Total area under guava was estimated to be 150.9 thousand hectares (4.20 percent of total area under fruits) with the production of 1710.5 thousand tons (3.30 percent of the total production of fruits) and the productivity reported to be 11.3 MT per hectare during 2008-09. The highest productivity since 1999-2000, i.e.11.9 MT per hectare was attained during 2008-09.Keeping all the above facts in the mind, the study has been carried out with the specific objectives as to examine the marketable & marketed surplus of guava in different size group of farms and to identify the problems in the marketing of guava and to suggest suitable policy measures.

Materials and methods

The study was purposively carried out in Kaushambi district of Uttar Pradesh, which ranks second after Bihar in case of area under guava cultivation. However, district Kaushambi is famous for producing the best guava in the world. The list of all blocks of Kaushambi district were prepared and arranged in ascending order on the basis of area under guava cultivation, out of eight blocks, one block namely Kara block were selected purposively. This is having maximum area under guava cultivation about 45% of the total cultivated area.

20 percent villages i.e. 5 villages namely Baraithi, Chillashahavazi, Ibrahimpur, Kara khas and Chillauli of Kara block were selected randomly for the present study. About 120 farmers are present in 5 selected villages who either cultivate guava with their own finance or grown on contract basis. Especially farmers having orchards of age about 8 years old plants were selected randomly and all the farmers were studied to cover all the marketing channels.

However, the guava producers were categorized on the basis of guava production:

1. Small - upto100 Qt
2. Medium - from 101 to 300 Qt
3. Large - Above 300 Qt

Further, the winter crop of guava was the major produce sold by growers but rainy season crop also contributed to the marketing economy.Mundera 'A' grade wholesale secondary market was selected, which was fed by the maximum guava producing area of the fruit belt.The period of enquiry was the Agricultural year 2008-2009.

Results and discussion

Marketable and Marketed Surplus

Marketable surplus refers to the quantity of produce available for sale, after meeting the family consumption, seed, feed, wages and social and customary needs. In case of fruits like guava, the requirement of produce against seed and feed is totally absent but that against social and customary

needs is very high. Marketable surplus is a theoretical surplus. It does not matter in practical sense. Practically farmers play with marketed surplus which refers to the actual amount of produce that has been sold. In case of fruits and vegetables the marketed surplus mostly remains less than the marketable surplus because of the additional losses during transportation to the market yard, grading, packing, and storage (i.e. due to over ripening or moisture loss during the gap between arrival and disposal).

Table-1. Marketable and Marketed Surplus of Guava on Different Size Group of Farms (Quintals/farm)

Size group (1)	Raw fruits (good quality) (2)	Marketable surplus (3)	Marketed surplus (4)	Difference [(3)-(4)]
Small Farms	31.72 (100.00) .	30.87 (97.32)	30.00 (94.58)	0.87 (2.74)
Medium Farms	100.33 (100.00)	99.40 (99.07)	98.88 (98.55)	0.52 (0.52)
Large Farms	138.25 (100.00)	137.14 (99.20)	136.52 (98.75)	0.62 (0.45)
All Farms	104.05 (100.00)	103.05 (99.04)	102.42 (98.43)	0.63 (0.61)

Note: Figures in parentheses are percentage to total production.

The above table-1 indicates that on an average 99.04 percent of the total produce was estimated to be available for sale but the actual quantity sold was only 98.43 percent. Unlike food grains both the marketable and marketed surpluses in this case were very high. This was only because of the commercial nature of this product, which is produced mainly for sale. It is obvious that absolute amount of total production, marketable surplus and the marketed surplus will be more with the larger size of farms because of the larger orchard area. Same trend could be observed again in proportion of total produce available for sale as well as that actually sold. For the sake of total physical loss calculation difference between marketable and marketed surplus and losses during first level of marketing i.e. till farmers or PHCs' disposal to the wholesalers or others in the market were added with the figures in last column of table. These results for different size group of farms are to present the trend of losses (physical) with marketable surplus.

Total physical losses born by the farmer/PHCs up to first level of marketing came to 9.47 percent of the total fruits drawn. And the real figure against marketable surplus was 90.20 percent. Farm size group wise decomposition is shown that the proportion of marketable surplus in total fruits harvested goes on increasing with the size of farm while that of total physical losses goes on decreasing.

Table -2: Farm size group wise availability of marketable surplus and total physical losses up to first level of marketing (Quintals/ farm)

Farm Size group	Total Fruits Drawn	Marketable surplus	Total Physical losses
Small farms	35.34 (100.00)	30.87 (87.35)	4.49 (12.71)
Medium farms	111.32 (100.00)	99.40 (89.29)	11.51 (10.34)
Large farms	150.70 (100.00)	137.17 (91.00)	13.07 (8.67)
All Farms	114.24 (100.00)	103.05 (90.20)	10.82 (9.47)

Note: Figures in parentheses show the percentage to total fruits drawn form the Orchard.

Identification of the problems in marketing of guava

Table- 3: Problems in marketing of guava (N=120)

S. No.	Particulars	No.of farmers (120)	Percent
1	Markets far away from farm	64	53.33
2	Storage problem	102	85.00
3	Price fluctuations	105	87.50
4	High commission	43	35.83
5	Lack of availability of market	56	46.66
6	Lack of skilled labour for packing	86	71.66
7.	Lack of finance/capital	95	79.16

From the table (3) it could be seen that all the respondents opined that markets for away from the farm. Over (53.33%) of the respondents opined that higher commission charges was another major problem in marketing of guava. The other problems were lack of availability of market information (46.66%) storage problem (85%), price fluctuations (87.50%), lack of skilled labour for packing (71.66%) and Lack of finance/capital (79.16%).

Conclusions

Based on the customer decision model, it was observed that the guava market is consumer's market. It is a seller's market for some rich consumers because there was much difference between the prices of fresh guava. The major constraints faced by produces were non-availability of skilled labour, lack of capital, hygienic conditions, high degree of competition, and lack of proper packaging material at reasonable prices.Non availability of scientific storage facility was one of the major factors contributing to lower returns from guava. Therefore, suitable storage facilities are essential to stabilize the return of guava growers by increasing the storage life of the fruit.

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