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To examine the level of production, productivity and income from guava orchard in study area district –Kanpur Nagar, (U.P.)

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Abstract

Guava (*Psidium guajava*) belong to family *Myrtaceae*, the apple of tropics, has been cultivated in India since early 17th century and is one of the most common fruit in India. It is now cultivated all over the tropics and sub-tropics. In India, it is successfully grown in Karnataka, Uttar Pradesh, Bihar, Madhya Pradesh, Maharashtra, West Bengal, Orissa and Tripura. The fruit is a good source of vitamin C, pectin, calcium and phosphorus. The fruit is used for the preparation of processed products like jams, jellies. The study has been undertaken in district Kanpur Nagar, Uttar Pradesh. Data pertained for the year 2015-16. A multi-stage purposive sampling technique was adopted to select the district, development blocks. A list of all villages of Kalyanpur block practicing guava cultivation was prepared. The productivity of guava in district Kanpur Nagar was 20.08 tons/ha. The total cost of guava plantation was Rs.55500 per hectare. The study of economics of production reveals that during establishment period the total cost came Rs. 105700/ha of which 64.33% i.e. Rs. 68000 incurred during first year with average cost Rs. 67233.33/ha for first three years. The average fruiting period cost came Rs. 35740 for different age group orchards.

Keywords: Cost, fruiting period, plantation, productivity, production

Introduction

Sampling Technique: A multi-stage purposive sampling technique was adopted to select the district-Kanpur Nagar, development blocks Kalyanpur, 10 villages and 100 guava growers. The details of the sampling technique at various stages are given as under.

Method of Enquiry and Collection of Data

The collected data were got verified from experienced persons and villages leaders of the sample villages. Every possible care taken to ensure the accuracy and reliability of the information received by respondents and properly edited through personal check and cross check, by the help of Block Development officer, Assistant Development officer and Village level officer, Lekhpals, Gram Pradhan and Villages leader was sought for obtaining correct and reliable data.

Location: The district Kanpur Nagar, is situated in the east part of Uttar Pradesh. The district lies between 25°25' to 25°54' North latitude and 79°34' to 80°34' East longitude. Kanpur Nagar covers an area of 3155 sq.km. It is bounded in north by district Kannauj and Hardoi, in east district Unnao, in south district Fatehpur, Hamirpur and in west Kanpur Dehat. The population of district Kanpur Nagar as per census 2011 is 4581268 with sex ratio 862. The district consists of 3 tahsils namely Kanpur Nagar, Ghatampur and Bilhaur. There are 10 Block namely Bhitargaon, Bidhanu, Bilhaur, Chaubeypur, Ghatampur, Kakwan, Kalyanpur, Patara, Sarsaul and Shivrajpur. There are 1003 revenue villages, 10 Blocks and 590 Gram panchayat in district Kanpur Nagar.

Soil & Climate

The soil of the district is alluvial with pH normal to sodic and containing organic matter from least to medium quality. The district comes under humid sub-tropical climate. The maximum and minimum temperature recorded during 2015-16 was 47.2° & 4°C respectively while average annual rainfall was reported at 863 mm

The varieties of guava mainly raised by the farmers are Allahabad safeda, L-49, and Lucknow safeda in block Kalyanpur.

Cost of Establishment of guava Orchard

It included costs like fencing, preparation of land and digging

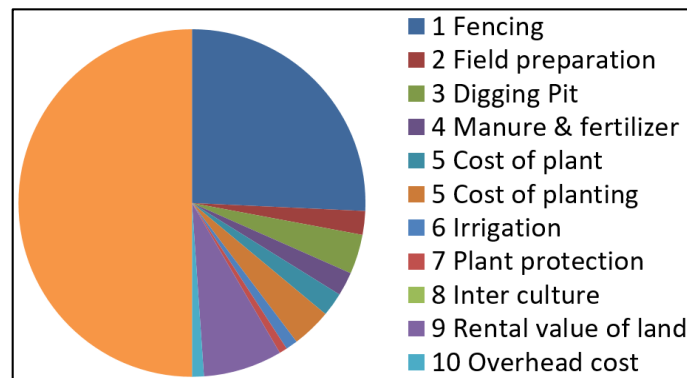
of pits, cost of plants, planting, irrigation, inter-cropping costs etc. The gestation period in guava was taken for three years.

Table 1: Input cost incurred during establishment period on per hectare basis in Rupees.

S. No.	Particulars	I year	II year	III year	Total	Average
1	Fencing	35000	-	-	35000	35000
2	Field preparation	3000	1400	1400	7200	1800
3	Digging Pit	5000	-	-	5000	5000
4	Manure & fertilizer	3000	2000	2200	7200	2400
5	Cost of plant	3000			3000	3000
5	Cost of planting	5000	-	-	5000	5000
6	Irrigation	1500	1000	1500	4000	1333.33
7	Plant protection	1000	1000	1000	3000	1000
8	Inter culture	-	1500	1500	3000	1000
9	Rental value of land	10000	10000	10000	30000	10000
10	Overhead cost	1500	1500	1500	4500	1500
	Total (Rs)	68000	18400	19300	105700	67233.33

In absolute figures the first year cost came to Rs. 68000 per hectare, while in remaining three year, it varied from Rs.18400 to Rs. 19300 per hectare per year respectively. During gestation period the guava orchard needed only manuring, irrigation, plant protection and interculture operation, it was the reason that in last three years of gestation period the total cost was lower than first year where fencing,

pit making and plantation cost emerged as additional cost. If average of four year gestation is taken into account the average cost came to Rs. 67233.33 per hectare. Out of this total, rental value of land accounted for the highest cost, followed by Digging of pit, cost of plants and manure and fertilizers etc.



Input cost incurred during establishment period on per hectare basis in Rupees. I year

Fruiting period costs**Table 2:** Total cost & its break up during fruiting period (in Rs per hectare)

S. No.	Input items	Orchard categories				Total	Average
		4-9 years	10-14 years	15-19 years	Above 20 years		
1	Human labour	8400	8800	8800	8800	34800	8700
2	Tractor power	840	840	840	840	3360	840
3	Manure & fertilizer	7200	8000	8000	8000	31200	7800
4	Irrigation charges	1700	2400	2600	2600	9300	2325
5	Plant protection	1600	2100	2400	2400	8500	2125
6	Rental value of land	10000	10000	10000	10000	40000	10000
7	Overhead charges	3400	4000	4200	4200	15800	3950
	Total (Rs)	33140	36140	36840	36840	142960	35740

The fruiting of guava starts after IIIrd year in the study area and it reaches its maximum during 15-19 years age group. In this context the table 1 shows the cost incurred on guava orchards for different plantation periods.

In the orchards of 4 to 9 years duration, the average total cost, came to Rs. 33140 per hectare. Out of this total cost, rental value of land accounted for the highest being 30.17 per cent closely followed by human labour 25.34 per cent. In the orchards of 10 to 14 years age group, the average cost was worked out at Rs. 36140 while in 15 to 19 years age group and 20 and above years it came to Rs. 36840 per hectare. In

all these groups, land rent accounted for the highest cost followed by human labour. It may also be noted that manure and fertilizers and plant protection measures gave a rising trend with the increase in period of plantation of guava orchards. It was due to higher requirement of these inputs in later periods.

As regards average total cost for the above plantation periods, it worked out at Rs. 35740 per hectare. Out of this total cost rent on land accounted for highest closely followed by human labour. The next important inputs were plant protection measures followed by irrigation charges.

Table 3: Returns from guava orchard (in rupee per year)

S. No.	Particular	Orchard categories				Total	Average
		4-9 years	10-14 years	15-19 years	Above 20 years		
1	Input cost(Rs)	33140	36140	36840	36840	142960	35740
2	Yield (q/ha)	170	190	180	175	715	178.75
3	Rate (Rs/q)	2100	2200	2150	2150	8600	2150
4	Gross income(Rs)	357000	418000	387000	376250	1538250	384562.50
5	Net income(Rs)	323860	347210	314960	303810	322460	128984
6	Benefit cost ratio	1:10.77	1:11.56	1:10.50	1:8.24	1:10.76	1:10.76

The benefit-cost analysis of guava orchard given in Table 2 shows that the net income came highest in the guava orchard of 10-14 years age group, indicating that the yield was at maximum in this period. At the age of 4-9 years duration when fruiting started (after five years) the net income was low being Rs. 3.23 lakh per hectare. After this it increased to Rs. 3.47 lakh in 10 to 14 years shows decline to Rs. 3.14 lakh in 15-19 years aged orchards. After this age it gave a declining trend and the net income reduced to Rs. 3.03 lakhs (20 years & above) due to decline in yield level. The benefit-cost ratio in guava orchard was 10.77 in the 4 to 9 years age group (at the start of fruiting) 11.56 during 10-14 years age group, after when it declined to 8.24 during 20 years and above. It concludes that net income gave an increasing trend with the increase in length of plantation period, reaching maximum in 15 years age group, after which it declined.

Reference

1. Kakadia BH, Shyani RL, Antani KL. Cost and return of guava production in South Sourashtra zone of Gujarat. Ind. J Agril. Mktg. 1999; 13(2):11.
2. Khunt KA. Economics of production and marketing of Pomegranate Ind J Agrit Econ. 2003; 17(1):100.
3. Kumar N, Suresh J, Anbu S. Problems and prospect of guava cultivation under Tamilnadu condition. Acta Horticulture. 2007, 735.
4. Malaviya PK, Sirothia NN. Post harvest handling damage in guava. College of Agril. Engg. & Tech., Allahabad Agricultural Institute (Deemed University), Allahabad, India. New Agriculturist. 2002; 13(1/2):35-40
5. Malik SH, Saraf SA. Economic analysis of processing of guava (*Psidium guajava* L.) in Uttar Pradesh state of India. Journal of Agricultural Science (Toronto). 2013; 5(6):44-57
6. Manjeet Kaur, Sekhon MK, Joshi Anuradha. Remove from marked Records Marketing pattern and price spread of guava in Punjab. Indian Journal of Economics and Development. 2014, 10(1).
7. Ramchandra, Mehra B. Economics of guava production in Kaushambi district of Uttar Pradesh. College of Forestry, Allahabad Agricultural Institute (DU), Allahabad – (U.P), New Agriculturist. 2009; 20(1/2):71-74
8. Rotchanapasodsuk N, Wanichakul K. Status of guava (*Psidium guajava* L.) production in Sam Phran district, Nakhon Pathom provinc Proceedings of the 50th Kasetsart University Annual Conference, Kasetsart University, Thailand. 2012, 2.