



ECONOMICS OF PRODUCTION AND MARKETING OF ROSE FLOWERS IN KANNAUJ DISTRICT OF UTTAR PRADESH

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ABSTRACT : The study was conducted in rose growing pockets of Kannauj district of Uttar Pradesh with an objective of estimating the cost of production and marketing and margins in the trade of loose rose flowers by the farmers. The study indicated that cost of production is the highest in the first year as expenses on field preparation. Gross production cost per hectare is estimated to be ₹ 89550 in first year. The total cost of marketing of rose flowers is estimated to be ₹ 9.60 per kilogram. Labour charges, quantity loss, transportation, commission and packing are important constituents of marketing costs. Total cost including production and marketing was calculated to be ₹ 89550/ha. Producer got only ₹ 12.68/kg at the profit margin i.e. merely 26.66 per cent of the “consumer rupee”, wholesaler and retailers saved a large part of the price paid by the consumer. Profit year for farmers was also calculated and it was found that farmers start earning profit from the fourth year.

Keywords : Rose flowers, consumer rupee, profit, establishment, margin, labour charges.

Rose is one of the top selling flowers in the global flower trade and stands first among the commercial cut flowers. There is considerable demand for rose in the form of loose flower, dry petals, long stemmed flower and its by-products such as rose water, *gulkand*, perfume, etc. in domestic as well as export market. The cut rose account for nearly 60 per cent of cut flower trade in global market nearly one lakh hectare of land is estimated to be under production in India (Thakur, 6). The leading flower is jasmine which is grown in 6270 hectares followed by rose (5564 ha) and chrysanthemum (3870 ha). The major rose growing states are Maharastra, Karnataka, Tamilnadu, Rajasthan, Uttar Pradesh and West Bengal. As for as Uttar Pradesh state is concerned 612 hectares of land is under rose cultivation, which is nearly 10 per cent of the total cropped area under rose crop in India (Jaga, 2). In Sarai Meera block in Kannauj district (356 ha), Jasoda and surrounding area of Kannauj district, 750 metric tones of roses are produced in 530 hectares (Anon, 1). About 75 per cent of this produce is exported to West-Asian countries in the form of petals.

Ascertaining the importance of rose, its by products, present study was undertaken to examine the economics of production and marketing practices adopted by the farmers engaged in the field of activity. Such a study will be helpful in assessing the commercial importance of rose cultivation and will help in deciding appropriate strategies and programmes for the improvement and promotion of productions and

economics environment for rose crop and its by products.

The specific objective of the study were - To estimate the production and marketing cost for farmers, and To study the returns in the marketing of rose flowers.

MATERIALS AND METHODS

Rose cultivation in Sarai Meera in district Kannauj U.P. is carried out in approximately 356 hectares of land in 20 villages where as in surrounding Kannauj, area under cultivation is around 20 hectares in 6 villages. In Sarai Meera around 300 farmers and in Jasoda 30 farmers are engaged in rose cultivation. For the purpose of this study 25 per cent of the total farmers were selected and information was collected from them. 75 cultivators in Jasoda and 8 farmers in Sarai Meera were selected purposively for the study. Data was collected from farmers and traders regarding production and marketing costs and their margins.

RESULTS AND DISCUSSION

A. PRODUCTION COST OF ROSE FLOWERS

The farmers in Kannauj surroundings produce rose as a commercial crop. The farmers adopt traditional practices and method of cultivation. By adopting modern methods of production they can increase the yield and reduce the cost of production. Cost of production is calculated including cost of ploughing and field preparation, manures and

fertilizers, plant protection, irrigation, planting materials, labour and farm implements. Cost data is prepared taking one hectare as the basis for calculation.

1. Cost of ploughing and field preparation

From the figures obtained (Table 1) after survey it was found that on an average farmers do three ploughings, the cost of one ploughing is ₹ 600 per hectare and cost of three ploughings is ₹ 1800 per hectare. After ploughing of field the ridges are formed for planting which require 50 labourers. The wage of one labour per day is ₹ 50, so the total cost for the ridge formation is ₹ 2500 per hectare. So in the first year the total cost for ploughing and field preparation is ₹ 4300 and it is 4.8 per cent of the total production cost for the first year.

2. Manures and fertilizers

For proper growth and development of rose plant different kind of manures and fertilizers are required.

a. Farm yard manure

It is prepared from the dung of the cattle. From the survey it was found that on an average 100 quintal FYM is required for one hectare. The cost of one quintal of FYM is ₹ 280 and the total cost of 100 quintal FYM is ₹ 28000/-.

b. Chemical fertilizers

Among chemical fertilizers farmers use nitrogenous, potash and phosphatic fertilizers. On the basis of present study it was found that the cost of chemical fertilizers per year is ₹ 3000 per hectare. The farmers incur a total of ₹ 31000 per hectare per year in manure and fertilizers. This is 34.61 per cent of gross production cost of first year, while 53.21 per cent in second year and 61.8 per cent in third and fourth years, respectively.

3. Cost of planting materials

Under the present survey it is found that farmers plant approximately 8000 plants per hectare. The farmers purchase these plants from various sources @ ₹ 5 per plant, so that the cost of 8000 plant is ₹ 40000 in the first year. It is 44.66 per cent of the gross production cost in first year. It was found that 15 per cent plants are damaged so it is necessary to replace these. Plants by new plants, in the second year 1200 plants are required for this replacement. The total cost of these 1200 plants @ 5 per plant is ₹ 6000 and it is 10.30 per cent of gross production cost of second year.

4. Irrigation cost

It was found that farmers irrigate the rose plants on an average 40 times a year. The cost of each irrigation is ₹ 150. On the basis, the cost of 40 irrigations comes to ₹ 6000 a year. This cost is 6.7 per cent of the total gross production cost in the first year. In the second year it becomes 10.30 per cent and 4.82 per cent in the third and fourth year, respectively.

5. Cost of plant protection

The rose crop suffers from the attack of various diseases and insect pests. The proper control of these diseases and insect is very necessary for profitable cultivation of rose. In the present study it was found that on an average farmer spends ₹ 2000 for plant protection activities every year. It is 2.23 per cent of the total gross production cost in first year, while 3.43 per cent in third and fourth year, respectively.

a. Cost of labour

Various kinds of activities like weeding, hoeing, pruning, picking and establishment of plant require labour. The cost of labour is calculated as mentioned under.

b. Cost of weeding

Weeding activity is carried out minimum twice a year. 15 labours are required for this purpose. So the cost of weeding @ ₹ 50 per labour per day comes to Rs. 750 per year.

c. Cost of hoeing

There is no need for hoeing of rose plant in the 1st year. Hoeing is done from second year. One time hoeing required 50 labourers per hectare. At the wage rate of ₹ 50 per day. The cost of hoeing in the second year is calculated to be Rs. 2500.

d. Cost of pruning

The activity of pruning also starts from the second year. On an average 60 labourers are required for pruning the plants/ hectare. At the rate of ₹ 50/- day, ₹ 3000 has been added to labour cost in the second year.

e. Cost of plucking of flowers

Flowers are picked at the time of sunrise every third day. On an average 100 labour days are required @ ₹ 50 per day. This cost is calculated to be ₹ 5000 a year approximately.

f. Cost of plant establishment

Plants are established in the soil after ridge formation and manuring. In this activity, 100 labourers

Table 1: Production cost of rose flowers (per hectare).

S. No.	Particulars	I year		II year		III year		IV year	
		Cost	% of gross production	Cost	% of gross production	Cost	% of gross production	Cost	% of gross production
1.	Cost of plough & field preparation								
	a. 3 ploughings @ ₹ 600/ploughing ₹ 18000	89550	0.55	505	0.85	500	0.98	500	0.98
	b. ridge formation @ ₹ 50/labourer per day, 50 labour/₹ 2500	4300	4.80	58250	—	50750	—	50750	—
2.	Manure and fertilizers								
	a. Farm Yard manure 100 quintal	31000	34.61	31000	53.21	31000	61.08	31000	61.00
	b. Fertilizers ₹ 3000	—	—	—	—	—	—	—	—
3.	Planting material								
	I yr: 8000 plant/ha @ ₹ 5/- per plant	40000	44.68	6000	10.30	—	—	—	—
4.	Irrigation								
	40 irrigation per year @ ₹ 150/- labour per irrigation	6000	6.70	6000	10.30	6000	11.82	6000	11.82
5.	Plant protection (insect & disease) management	2000	2.23	2000	3.43	2000	3.94	2000	3.94
6.	Labour (weeding, hoeing, pruning etc.)	5750	6.42	12750	21.88	11250	22.16	4250	22.16

are required for a hectare. So in the first year, cost of plant establishment is calculated to be ₹ 5000 @ ₹ 50 per labour. In the second year 30 labourers are required and its cost @ ₹ 50/day is calculated to be ₹ 1500 and included in second year cost of labour.

6. Cost of farm implements

Machines and farm implements are also required for the purpose of rose cultivation, approximately, Rs. 500 are spent every year on farm implements, which is 0.55 per cent of gross production cost of first year, 0.85 per cent of second year, and 0.98 per cent of third and fourth year, respectively.

7. Total cost of production

The year wise production cost of rose flowers is presented as under:

First year

The cost of production is the highest in the first year as expanses on field preparation, plant establishment and other are done in first year only. Gross production cost is estimated to be ₹ 89550 in the first year. It included cost of ploughing and field preparation, which is ₹ 4300 and 48 per cent of the total

cost, ₹ 31000 are spent on manures and fertilizers that is 34.61 per cent of the total cost. Planting materials constitutes the major proportion (44.66 per cent) of production cost and is estimated to be ₹ 40000 per hectare.

Irrigation and plant protection activities constitute 6.7 and 2.23 per cent of total production cost, respectively. Cost of labour in the first year is calculated to be ₹ 5750 that includes cost of weeding and establishment of plants. Labour cost is 6.42 per cent of total production cost. Cost of farm implements is 0.55 per cent of total production cost.

Second year

All the above types of expanses are incurred in second year, except ploughing and field preparation. ₹ 31000 is spent on manures and fertilizers that is the highest and constitutes 53.21 per cent, ₹ 6000 is spent on planting material constituting 10.30 per cent of the total production cost ₹ 2000 is spent on the plant protection that is 3.43 per cent of the total production cost in the second year. ₹ 12750 are spent on labour activities like weeding, hoeing, pruning, plucking of flowers and establishment of plant constituting 21.88 per cent of the total production cost in the second year.

Table 2: Marketing cost incurred in the sale of rose flowers (₹/kg).

Particulars of cost	Cost born by							
	Producer (%)		Wholesaler (%)		Retailer (%)		Total cost (%)	
1. Transportation charges	0.48	(15.0)	0.92	(9.58)	0.30	(3.19)	1.70	(17.77)
2. Packing charges	0.18	(1.87)	0.72	(7.50)	0.15	(7.50)	1.05	(10.93)
3. Labour charges	0.15	(14.06)	1.95	(20.31)	0.70	(7.29)	2.80	(29.10)
4. Commission	0.35	(12.50)	—		—		1.35	(4.06)
5. Value of quantity loss	1.20	(35.0)	0.90	(9.37)	0.60	(6.25)	2.70	(28.12)
Total cost	3.36		4.49	(46.77)	1.75	(18.22)	9.60	(100.0)

₹ 500 is spent on farm implements constituting 0.85 per cent of the total production cost. The total cost of production of rose flowers in the second year is estimated to be ₹ 58250 per hectare.

Third and fourth year

They are taken together as expenditure on all the activities is same for both the year. No expenses are done on ploughing and planting material. ₹ 31000 is spent on manures and fertilizers constituting 61.08 per cent of the total production cost. ₹ 2000 and ₹ 11250 are spent on the plant protection and labour, respectively. ₹ 500 is spent on machine and farm implements constituting 0.98 per cent of total production cost. The total cost of production is calculated to be ₹ 50750 in the third and fourth year.

B. COST INCURRED IN MARKETING

The details of cost incurred in the marketing of rose flowers are shown in Table 2. The total cost of marketing of rose flowers is estimated to be ₹ 9.60 per kilogram. Labour charges, quantity loss, transportation, commission and packing are important constituents of marketing costs. Individually these costs items accounted for 29.16 per cent, 28.12 per cent, 17.77 per cent, 14.06 per cent and 10.93 per cent, respectively.

Labour charges and loss in quantity due to spoilage is high as commission is charged from the producers @ 10 per cent of the value of flowers in *phool mandi* by commission agents. Out of this, ₹ 3.36 i.e. 35 per cent of total marketing cost is borne by producer.

Wholesaler in the channel incurs ₹ 4.49 i.e. 46.77% of total marketing cost. Retailers incur Rs. 1.75 i.e. 18.22% of total marketing cost.

C. COST AND MARGINS IN THE MARKETING OF ROSE FLOWERS

Table 3 shows that ultimate consumer paid ₹ 47.56 per kilogram of rose flower, out of it, producer got

only ₹ 12.68 per kilogram as the profit margin i.e. merely 26.66% of the “consumer rupee”.

The total cost incurred on marketing of rose flowers accounted for ₹ 20.18 per cent of the price paid by the consumer.

Wholesaler got ₹ 15.75 as profit margin i.e. 32.06% of consumer rupee. Wholesaler spent ₹ 4.49 as marketing cost. Retailer's profit margin is ₹ 10.03 i.e. 21.08% of consumer rupee and spent ₹ 1.75 as marketing cost. Wholesaler and retailer shared a large part of the price paid by the consumer.

D. MONTHLY AND YEARLY PRODUCTION OF ROSE

On the basis of information collected from farm farmers, monthly and yearly production data was calculated (Table 4 and 5).

First year

Traditional varieties do not give flowers in the first year. Flowering starts from the second year.

Second year

In the second year average production of rose was 40 quintal flowers per hectare. In the month of January, 100 kg flowers are produced per hectare. In February, pruning is done to rose bushes and so there is no production. 600 kg, 700 kg and 650 kg flowers are produced in the month of March, April and May, respectively.

Third year

Three year plant starts giving flowers in good volume. In the third year on an average 90 quintal flowers are produced per hectare. So the production is more than double as compared to second year.

Fourth year

In the fourth year production increases slightly as compared to third year. Average production in the fourth year was calculated to be 92 quintal per hectare.

Table 3 : Marketing costs and margins in rose flower production

S.No.	Particulars	₹/kg	Share in consumer Rupee (%)
1.	a. Net price received by producer	12.68	26.66
	b. Expenses incurred by producer	03.36	07.06
2.	a. Sale price of producer/purchase price of wholesaler	16.04	33.72
	b. Expanses incurred by the wholesaler	04.49	09.44
	c. Margin of wholesaler	15.25	32.06
3.	a. Sale price of wholesaler/purchase price of retailer	35.78	75.23
	b. Expanses incurred by the retailer	01.75	03.67
	c. Margin of the retailer	10.03	21.08
4.	Price paid by the consumer	47.56	100.00

Table 4 : Monthly and annual production of rose flowers per hectare (kg).

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av. Production /year
1 st year	—	—	—	—	—	—	—	—	—	—	—	—	—
2 nd year	100	—	600	700	650	350	400	2900	310	250	200	150	40.00
3 rd year	240	—	1350	1750	1600	1000	950	760	480	450	240	180	90.00
4 th year	260	—	1380	1765	1630	1020	970	775	490	470	255	185	92.00
5 th year	270	—	1400	1800	1645	1040	995	785	510	485	270	200	94.00

Fifth year

In the fifth year on an average 94 quintal flowers are produced per hectare. Flowering is more than previous years. Flowering capacity of rose plants remains static up to 10 years and they give ample volume of flowers. But there after production capacity keeps on decreasing and they do not remain profitable after 15 to 17. These findings partially confirm with the finding of Lordachescu (3) who reported that rose plantations have an economic life of 10-12 years.

E. PRODUCTION OF ROSE AND PRICE RECEIVED BY FARMERS

As mentioned earlier price received by the farmers is ₹ 16.04 per kg of rose flowers. On the basis of this price, gross production in rupees is estimated to be ₹ 64160, ₹ 144360, ₹ 147568, ₹ 150776 in the second, third, fourth and fifth years respectively. In the first year there is no production of rose flowers. The findings are in the line of results of Rault and Rasane (4).

F. COLLECTION OF PROFIT ON PRODUCTION AND MARKETING COST FOR FARMERS

Total cost including production and marketing was calculated to be ₹ 89550.00, ₹ 71690.00, ₹ 80990.00, ₹ 81662.00, ₹ 82234.00 for the first, second, third, fourth

and fifth years, respectively. Total marketing cost was calculated at the rate of ₹ 3.30 per kg as calculated earlier, price received by the farmer was calculated earlier to be ₹ 16.04 per kg. Gross production per year in rupee terms is estimated to be ₹ 64160.00, ₹ 144360.00, ₹ 147568.00, ₹ 150776.00 the second, third, fourth and fifth years, respectively. After comparing total cost with the price received, we find that profit of ₹ 32196.00 starts from fourth year. Total cost for the fifth year is ₹ 82334.00 and price received for the production is ₹ 150776.00 and so the profit for the fifth year is calculated to be ₹ 68442.00 per hectare. Suryavanshi and Kapse (5) had also reported the rural cost of cultivation, which included fixed and marketing cost to be around ₹ 53000.00 to ₹ 56000.00 per hectare.

Table 5 : Production and price of rose flowers.

Year	Production per hectare (quintal)	Price received per quintal (₹)	Gross returns per hectare (₹)
First	-	-	-
Second year	40	1604.00	64160.00
Third	90	1604.00	144360.00
Fourth	92	1604.00	147568.00
Fifth	94	1604.00	150776.00

Conclusions

The year wise, per hectare production cost of rose flowers was estimated and it was found to be the highest (₹ 89550.00) in the first year. Cost of planting material was found to be major cost item accounting for 44.66 per cent of gross production. Cost of manures and fertilizers were found to be another major cost item constituting 34.61 per cent of first year's total cost. High capital requirement in the initial years discourage farmers from taking up the venture. The marketing cost of rose flowers was estimated to be ₹ 9.60 per kg. Labour charges, quantity loss and transportation costs were found to be the important cost items.

Wholesaler had borne the highest marketing cost (46.77%) followed by producer (35%) and retailer (18.22%), respectively. However, wholesaler (32.06%) and retailer (21.08%) shared a large part of the price paid by the consumers (₹ 47.56 per kg). Producer's shares in consumer's rupee was calculated to be 26.66 per cent. Profit year for farmers was also calculated and it was found that farmers start earning profit from the fourth year as the production cost is high in initial years whereas volume of production is low.

Policy implications

The following suggestions have emerged out of the findings of the study:

1. During the survey it came to the surface that the rose cultivators was not aware of appropriate technology and management practices relating to flower cultivation resulting in over as well as under utilization of inputs, wrong selection and use of costly pesticides and chemicals besides improper post-harvest handling and treatment of planting material.

2. Rose cultivation has been found to be highly capital intensive and risky. It may not be possible for an ordinary farmer to bear the risk of crop failure. That may lead him to complete economic disaster.

3. Rose cultivation and its trade in Kannuj district of U.P. is its infancy stage and there is dearth of desired infra-structure both at the farm as well institutional level. Hence, it is emphasized that the subsidies on poly/green house, planting materials and specialized requirements should be provided.

4. The rose flower grower, comparative societies in the state need to be a developed and strengthen of both financially as well as functionally so that these could operate in the remote and for flung areas to expand production of rose to safeguard of the interests of rose cultivation

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Citation : Sachan A.K., Kumar A., Rajput M.M. and Katiyar A. (2014). Economics of production and marketing of rose flowers in Kannauj district of Uttar Pradesh. *HortFlora Res. Spectrum*, 3(1): 29-34.