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### Production and marketing of Udupi Mallige in Udupi District of Karnataka: An economic analysis

**Shreshail Rudrapur, Kiran Kumar R Patil and Chinnappa B**

#### Abstract

Udupi mallige is also known as Shankarapura mallige which enjoys a geographical indication (GI) tag, is all set to spread its fragrance, with efforts being made to market it far and wide. Most of the farmers are growing the crop on an average area of 0.25 acre. The study was conducted to know the economic viability of Udupi mallige cultivation in the study area. In order to work out economics, 30 sample farmers growing Udupi mallige were selected randomly. The budgeting technique was employed to assess economic viability of the crop. In addition, marketing aspects of Udupi mallige has got greater relevance. Hence, an attempt has also been made to identify the traders involved in marketing of Udupi mallige. The growers of Udupi mallige realizes stabilized yield from fourth year of its plantation. Hence, the expenditure made on the crop for three years was considered as establishment cost. The total establishment cost for three years was Rs. 3,01,721. The total yield realized during establishment period was 1,023.75 atte. The average price per atte was considered to work out gross returns. Accordingly, Rs. 300 during summer season and Rs. 500 during rainy and winter seasons were considered to obtain gross returns. The gross returns and net establishment cost came to Rs. 3,73,875 and Rs. 72,153, respectively. Fourth year onwards, cost incurred towards cultivation of mallige is considered as maintenance cost. The profit realized by farmer was Rs. 1,75,579. The economic viability of crop reflected in terms of BC ratio came to 2.04. The profit accrued to wholesalers was Rs. 16.10/atte and Rs. 13.86/atte during lean and flush seasons, respectively whereas the profit realized by retailers during winter and rainy seasons came to Rs. 79.27/atte and Rs. 25.18/atte during summer season. The study also revealed that the producer share in consumer rupee in summer season was found to be high (84.27 %) compared to rainy and winter seasons (74.19 %).

**Keywords:** Udupi mallige, Atte, net returns, price spread, PSCR

#### Introduction

Jasmine is considered as the "Queen of fragrance" as it is exquisitely scented to soothe and refresh. In different parts of India it is called by different names such as, Mogra, Motia, Chameli, Malli puvvu, Jaati, Mallige, Juhi, Moonlight in the grove. Several species of jasmine are grown in Karnataka such as Mysore Mallige (*Jasminum grandiflorum*), Hadagali Mallige (*Jasminum auriculatum*) and Udupi Mallige (*Jasminum sambac*). The cultivation of Udupi Mallige started in Shankarapura in Udupi district about 100 years ago. It is found extensively in Bhatkal, Udupi, Dakshina Kannada and Uttara Kannada, and has been found more economically viable among all the three varieties. The Udupi Mallige is in high demand in places such as Mumbai, besides the coastal region. Every home in this region has 0.25 to 1 acre of land in front of the house for Jasmine growing. The 'Udupi mallige' (Udupi jasmine) also known as 'Shankarapura mallige', which enjoys a geographical indication (GI) tag, is all set to spread its fragrance, with efforts being made to market it far and wide. Farmers have been growing this special variety of jasmine on 183 hectares of land at Shankarapura and surrounding villages, including Bantakal, Shirva, Heroor and Innanje in Udupi district for over a century. Though its fragrance is mild, this variety is attractive and often used for auspicious occasions. In order to retain its identity and quality, farmers growing Udupi mallige have formed a Udupi Jasmine Growers' Association, with the help of the Department of Horticulture. The association has applied to register Udupi mallige as a brand name, with a logo at the Trade Mark Registration office in Chennai. A brand name is also likely to push the export potential of the product and trigger demand in other parts of the country. Once quality

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is ensured, there will be a natural demand for this variety from people of this region living in the Gulf, and in western countries. With this backdrop the study was conducted to know the economic viability of production and marketing of Udupi Mallige.

### Methodology

The present study probe into economics of Udupi mallige cultivation in Udupi district of Karnataka. Udupi mallige is extensively cultivated in Udupi district and has gained intellectual property right i.e., geographical indication. In order to work out economics, 30 sample farmers growing Udupi mallige were selected randomly. The data pertaining to labour use pattern, resource use pattern, capital investment made on garden, yield realized across seasons were elicited from sample respondents using well-structured schedule. The budgeting technique was employed to assess economic viability of the crop. In addition to economics, marketing aspects of Udupi mallige has got greater relevance. Hence, an attempt has also been made to identify the traders involved in marketing of Udupi mallige. The peculiarity of Udupi mallige lies in price fixation at Shankarpura mallige market by wholesalers. In the present study, relevant information regarding marketing cost incurred and returns realized by wholesalers and retailers involved in marketing of Udupi mallige was elicited. The profitability of crop enterprise for different stakeholders was also assessed in the present study.

### Results and Discussion

#### Establishment cost of Udupi mallige (Rs. /0.25 acre)

The growers of Udupi mallige realizes stabilized yield from fourth year of its plantation. Hence, the expenditure made on the crop for three years is considered as establishment cost. Its labour intensive nature has constrained farmers to restrict area under its cultivation to guntas. Majority of farmers were found to practice its cultivation on 10 guntas (100 plants). The details of total cost incurred and returns realized during establishment period are presented in Table 1. The variable cost item formed major chunk at Rs. 2,75,987 (91.47 %) and rest is formed by fixed cost at Rs. 25,734 (8.53 %). Of the variable cost, labour component alone occupied 53.71 percent of the total cost at Rs. 1,62,010 indicating the labour intensive nature of the crop. The operations such as formation of ring and basin, weeding, irrigating plants, harvesting and stringing of flowers and preparation of stringing material were found to be labour intensive. Cost incurred on inputs came to Rs. 95,922 (31.81 %). The cost incurred on farm yard manure was highest at Rs. 31,500 (10.44 %) followed by expenditure on neem and groundnut cake at Rs. 25,950 (8.60 %), reflecting the role of organics in cultivation of Udupi mallige. The use of organics is preferred in cultivation of mallige to maintain the quality of flowers and to enhance its shelf life. Among fixed cost components, rental value of land and interest on fixed capital worked out at 12 percent rate of interest formed the major chunk. The rental value of land was calculated considering its opportunity cost. Opportunity cost of land is the net returns foregone from paddy crop (competing crop) for two seasons. The total establishment cost for three years came to Rs. 3, 01, 721. Mallige start yielding flowers from six months of its planting. The yield of crop is more during summer season (flush season) and less during rainy and winter seasons (lean season). The total yield realized during establishment period was 1,023.75 atte. The average price per atte was considered to work out gross returns. Accordingly, Rs. 300 during summer season and Rs. 500 during rainy and

winter seasons were considered to obtain gross returns. The gross returns and net establishment cost came to Rs. 3, 73, 875 and Rs. 72,153, respectively.

#### Maintenance cost of Udupi mallige (Rs/0.25 acre)

Fourth year onwards, cost incurred towards cultivation of mallige is considered as maintenance cost. Maintenance cost inclusive of variable and fixed costs came to Rs. 1, 69, 420 (Table 2). Of the total cost, variable cost occupied major share at Rs. 1, 60, 842 (94.94 %) and rest is shared by fixed cost at Rs. 8,578 (5.06 %). Labour was considered as the major cost item in the cultivation of mallige. The expenditure made on labour came to Rs. 1, 04, 800 (61.86 %). This clearly reflects the labour intensive nature of the crop restricting its area expansion. Harvesting, stringing and preparation of stringing material are the labour intensive operations in mallige cultivation. In addition, cultural practices like ring and basin formation, irrigation and weeding are the other operations demanding more labour in its cultivation. The expenditure made on material inputs came to Rs. 45,520 (26.86 %). Among the material inputs, share of FYM, ground nut and neem cake occupied major share signaling their relative importance in cultivation of mallige to ensure quality and shelf life. The yield obtained was maximum during summer season at 750 atte and was relatively lower during winter (140) and rainy (100) seasons. The average price realized during summer season was Rs. 300 per atte which was relatively lower compared to that of price realized during winter and rainy seasons (Rs. 500/atte). The gross returns realized per annum from 10 guntas or 100 plants came to Rs. 3, 45, 000. The profit realized by farmer came to Rs. 1, 75, 579. The economic viability of crop reflected in terms of BC ratio came to 2.04. Though, crop is found to be highly remunerative but farmer cannot think of expansion of area under crop due to labour predicament. The results are in conformity with the findings of the Ingle (2009) <sup>[3]</sup> and Ashoka (2017) <sup>[1]</sup>

#### Cost incurred and returns realized by wholesalers of Udupi mallige per atte

Peculiarity of Price fixation: There are six wholesalers in Shankarpura mallige market who are responsible for price fixation. Each of them procure flowers every day from nearly 150- 200 jasmine growers at a common collection point situated at various locations commonly called as Katte. They employ labour to collect flowers and they even provide motor vehicle to facilitate the process of collection. They receive more than 50 percent of the daily arrivals around 10.30 a.m. Based on the previous day arrivals, they predict today's arrival. They do have 5-6 regular potential buyers from the same locality, nearby districts and other states. Based on the demand putforth by the potential buyers and estimate of arrivals (supply), they negotiate with buyers in discovering price of the commodity to have market clearance. The negotiation also takes place between wholesalers in the event of scarcity or surplus to meet the demand of their respective buyers. In case if one of the wholesalers falls short of supply, he may negotiate with other wholesaler who is having surplus to meet his demand from potential buyer. Ultimately six wholesalers through negotiation fixes price of mallige and is applicable throughout the market. Price fixation takes place around 11.45 a.m. Wholesalers incur costs on labour to procure flowers from farmers and to prepare them in tradable unit (atte) for market, fuel expenses and depreciation of motor vehicle, banana leaves as packing material and stringing

material made out of banana fibre for preparing procured flowers in tradable unit. The cost incurred per atte varied across seasons. Rainy and winter seasons are considered as lean season and summer as flush season. Arrivals of atte is relatively more in summer and correspondingly marketing cost per atte is less compared to lean seasons. The marketing cost incurred per atte came to Rs. 28.90 during lean season and 3.64 during flush season (Table 3). The returns accrued to wholesalers are from commission (Rs 10/ atte when price of atte is less than Rs. 400 and Rs. 20/atte when price is more than Rs.400) and rent seeking. Rent seeking is the income generated through gain in the form of additional atte prepared out of arrived atte. The returns realized per atte came to Rs. 45 during lean season and Rs. 17.5 during flush season. Corresponding profit accrued to wholesalers came to Rs. 16.10 and Rs. 13.86 during lean and flush seasons, respectively.

#### Cost incurred and returns realized by retailers of Udupi mallige per atte

Retailers are the other traders involved in marketing of mallige to the customers. The marketing cost incurred and margin realized by retailer per atte is presented in Table 4. The cost item includes rental value of shop inclusive of electricity charges used for refrigeration, labour and wastages encountered due to perishability of the crop or loss due to price fluctuation. The cost incurred per atte came to Rs. 20.73 during rainy and winter seasons and Rs. 9.82 during summer season. The margin (profit) realized during winter and rainy seasons came to Rs. 79.27 and Rs. 25.18 during summer season.

#### Annual transaction of wholesalers and retailers of Udupi mallige

On an average wholesaler transact 20 atte during rainy and winter seasons and 200 atte during summer season. The cost incurred by wholesaler per day across winter-rainy and summer season came to Rs. 578 and Rs. 728, respectively (Table 5). The cost differential is due to the expenditure made on labour and packing materials. Correspondingly, returns realized per day came to Rs. 900 and Rs. 3,500 during winter-rainy and summer seasons. The annual expenditure of Rs. 1, 40, 454 and Rs. 88,816 was incurred and returns of Rs. 2,18,700 and Rs. 4,27,000 was realized during winter-rainy and summer seasons, respectively. This clearly reflects the significant role of wholesalers in mallige marketing (Table 5). The retailers transacted 3 attes during winter – rainy season incurring an expenditure of Rs. 83.17 and realizing returns of Rs. 300 per day. During summer season they transacted 25 attes by incurring an expenditure of Rs. 287.18 realizing returns of Rs. 875. The annual turnover of retailer came to Rs. 72,900 during winter –rainy season and Rs. 1,07,625 during summer season.

#### Price spread in marketing of Udupi Mallige

Price spread and producer share in consumer rupee across seasons was analysed and depicted in Table 6. The producer share in consumer rupee in summer season was found to be highest (84.27 %) compared to rainy and winter seasons (74.19 %). The results are in conformity with the findings of the Jyothi (2003) [4] and Ganapathi (2015) [2].

**Table 1:** Establishment Cost of Udupi Mallige (Rs./0.25 acre)

Year	I year			II year			III year			Total		
	Qty	Rate	Value	Qty	Rate	Value	Qty	Rate	Value	Qty	Rate	Value
<b>Operations</b>												
<b>Labour (mandays)</b>												
1) Pitting	3.00	500	1500							3.00	500	1500 (0.50)
2) Planting	3.00	500	1500							3.00	500	1500 (0.50)
3) Ring and basin formation and weeding	24.00	500	12000	24.00	500	12000	20.00	500	10000	68.00	500	34000 (11.27)
4) Application of manures, oil cakes and fertilizers	12.00	500	6000	16.80	500	8400	18.00	500	9000	46.80	500	23400 (7.76)
5) Application of plant protection chemicals	2.40	500	1200	4.00	500	2000	4.00	500	2000	10.40	500	5200 (1.72)
6) Irrigation	17.50	500	8750	15.00	500	7500	15.00	500	7500	47.50	500	23750 (7.87)
7) Nipping of young flower buds	2.00	500	1000							2.00	500	1000 (0.33)
8) Plucking of flowers	4.95	500	2475	14.40	500	7200	21.60	500	10800	40.95	500	20475 (6.79)
9) Stringing into chende or atte	4.95	500	2475	14.40	500	7200	21.60	500	10800	40.95	500	20475 (6.79)
10) Preparation of stringing material	7.42	500	3710	21.60	500	10800	32.40	500	16200	61.42	500	30710 (10.18)
<b>Inputs</b>												
1) Planting material (no.)	100.00	50	5000							100.00	50	5000 (1.66)
2) Ground nut oil cake (kg)	54.75	40	2190	109.50	40	4380	109.50	40	4380	273.75	40	10950 (3.63)
3) Neem cake (kg)	270.00	20	5400	240.00	20	4800	240.00	20	4800	750.00	20	15000 (4.97)
4) Lime (kg)	30.00	10	300	20.00	10	200	20.00	10	200	70.00	10	700 (0.23)
5) Trichoderma (packets)	24.00	100	2400	24.00	100	2400	24.00	100	2400	72.00	100	7200 (2.39)

6) FYM (baskets)	250.00	30	7500	400.00	30	12000	400.00	30	12000	1050.00	30	31500 (10.44)
7) Fertilizers (q)												
a) Urea	0.80	600	480	1.00	600	600	1.00	600	600	2.80	600	1680 (0.56)
b) Rock phosphate	1.00	1000	1000	1.20	1000	1200	1.20	1000	1200	3.40	1000	3400 (1.13)
c) Potash	0.80	1000	800	1.00	1000	1000	1.00	1000	1000	2.80	1000	2800 (0.93)
8) Stringing material (unit)	124.00	8	992	360.00	8	2880	540.00	8	4320	1024.00	8	8192 (2.72)
9) Plant protection chemicals			1500			3000			5000			9500 (3.15)
10) Interest on working capital @ 7 % p.a.			4772			6129			7154			18055 (5.98)
Total variable cost			72944			93689			109354			275987 (91.47)
Land revenue			25			25			25			75 (0.02)
Land rent			3000			3000			3000			9000 (2.98)
Depreciation			3938			3938			3938			11814 (3.92)
Interest on fixed capital @ 12 % p.a.			1615			1615			1615			4845 (1.61)
Total fixed cost			8578			8578			8578			25734 (8.53)
Total cost			81522			102267			117932			301721 (100.00)
Yield (no. of atte)												
Summer season	90.00	300	27000	240.00	300	72000	360.00	300	108000	690.00	300	207000
Rainy season	33.75	500	16875	45.00	500	22500	68.00	500	34000	146.00	500	73375
Winter season			0	75.00	500	37500	112.00	500	56000	187.00	500	93500
Gross returns			43875			132000			198000			373875
Net establishment cost			-37647			29732			80068			72153

**Table 2:** Maintenance cost of Udupi mallige (Rs/0.25 acre)

Operations	Qty	Rate	Value
<b>Labour (mandays)</b>			
1) Ring and basin formation and weeding	20	500	10000 (5.90)
2) Application of manures, oil cakes and fertilizers	20	500	10000 (5.90)
3) Application of plant protection chemicals	6	500	3000 (1.77)
4) Irrigation	25	500	12500 (7.38)
5) Plucking of flowers	39.6	500	19800 (11.69)
6) Stringing into chende or ate	39.6	500	19800 (11.69)
7) Preperation of stringing material	59.4	500	29700 (17.53)
<b>Inputs</b>			
1) Ground nut oil cake (kg)	109.5	40	4380 (2.59)
2) Neem cake (kg)	240	20	4800 (2.83)
3) Lime (kg)	20	10	200 (0.12)
4) Trichoderma (packets)	36	100	3600 (2.12)
5) FYM (baskets)	500	30	15000 (8.85)
<b>6) Fertilizers (q)</b>			
a) urea	1.2	600	720 (0.42)
b) Rock phosphate	1.5	1000	1500 (0.89)
c) Potash	1.2	1000	1200

			(0.71)
7) Stringing material (unit)	990	8	7920 (4.67)
8) Plant protection chemicals			6200 (3.66)
9) Interest on working capital @ 7 % p.a.			10522 (6.21)
Total variable cost			160842 (94.94)
Land revenue			25 (0.01)
Land rent			3000 (1.77)
Depreciation			3938 (2.32)
Interest on fixed capital @ 12 % p.a.			1615 (0.95)
Total fixed cost			8578 (5.06)
Total cost			169420 (100.00)
<b>Yield (No. of atte)</b>			
Summer season	750	300	225000
Rainy season	100	500	50000
Winter season	140	500	70000
Gross returns (Rs.)			345000
Net returns (Rs.)			175579
B:C Ratio			2.04
Profit per atte (Rs.)			177.35

**Table 3:** Cost incurred and returns realized by wholesalers of Udupi mallige per atte

Season	Particulars	Value (Rs.)
Rainy and winter season	Labour	22.50
	Fuel charges including depreciation of motor vehicle to collect chende from farmers	5.00
	Banana leaves to pack atte	0.60
	Stringing material	0.80
	Total marketing cost	28.90
	Commission	20.00
	Rent seeking	25.00
	Total marketing margin	45.00
	Profit	16.10
Summer season	Labour	2.75
	Fuel charges including depreciation of motor vehicle to collect chendu from farmers	0.50
	Banana leaves to pack atte	0.16
	Stringing material	0.23
	Total cost	3.64
	Commission	10.00
	Rent seeking	7.50
	Total returns	17.50
	Profit	13.86

Note: One atte consists of four chendu and each chendu consists of 800 flowers.

**Table 4:** Cost incurred and returns realized by retailers of Udupi mallige per atte

Season	Particulars	Value (Rs.)
Rainy and winter season	Rental value of building inclusive of electricity charges towards refrigeration	4.06
	Labour	13.67
	Wastage due to perishability or loss in the value due to price fluctuation	3.00
	Total marketing cost	20.73
	Marketing margin	100.00
	Profit	79.27
Summer season	Rental value of building inclusive of electricity charges towards refrigeration	0.49
	Labour	3.33
	Wastage due to perishability or loss in the value due to price fluctuation	6.00
	Total marketing cost	9.82
	Marketing margin	35.00
	Profit	25.18

Note: One atte consists of four chendu and each chendu consists of 800 flowers.

**Table 5:** Annual transaction of wholesalers and retailers of Udupi mallige

Particulars	Qty transacted per day in atte	Cost incurred per day (Rs.)	Returns realized per day (Rs.)	Cost incurred per season (Rs.)	Returns realized per season (Rs.)
<b>Wholesalers</b>					
Rainy & winter season	20	578	900	140454	218700
Summer season	200	728	3500	88816	427000
<b>Retailers</b>					
Rainy & winter season	3	83.17	300	20210	72900
Summer season	25	287.18	875	35036	107625

**Note:** One atte consists of four chendu and each chendu consists of 800 flowers.

**Table 6:** Price spread in marketing of Udupi Mallige (Rs./Atte)

Particulars	Summer	Rainy	Winter
Price received by the producer	300	500	500
Cost incurred by the wholesaler	3.64	28.9	28.9
Marketing margin of wholesaler	17.5	45	45
Cost incurred by the retailer	9.82	20.73	20.73
Marketing margin of the retailer	25.18	79.27	79.27
Price paid by the consumer (Retail price)	356.14	673.9	673.9
Total price spread	56.14	173.9	173.9
Producer Share in Consumer Rupee (%)	84.27	74.19	74.19

**Note:** One atte consists of four chendu and each chendu consists of 800 flowers.

**Marketing channel:** Producer-Wholesaler-Retailer-Consumer

### Conclusion

The economic analysis of Udupi mallige cultivation in terms of BC ratio (2.04) and profit per atte (Rs. 177.35) revealed its economic viability. Though, crop appears to be economically viable but farmers are constrained with labour availability restricting its area expansion. Ways and means to combat labour problem i.e., scope for mechanization in mallige cultivation need to be explored to benefit farmers to sustain their livelihood.

### References

1. Ashoka N, Shrinivasulu GB, Anupama G, Harshavardhan M, Kattimani KN. Economic analysis of production and marketing of jasmine in Hyderabad-Karnataka region: A case study in Koppal district, India, Int. J. Curr. Microbiol. App. Sci. 2017; 6(9):1702-1711.
2. Ganapathi R. A study on factors affecting marketing of jasmine in Dindigul district, Journal of Management Research and Analysis. 2015; 2(4):238-242.
3. Ingle SG, Pawar BR, Tawale JB, Jagde SA. Economics of production of jasmine in Maharashtra, Int. J. Comm. Busi. Mngt. 2009; 2(1):40-42.
4. Jyothi SH, Raju VT. Study on marketing of crossandra, jasmine and rose flowers in east godavri district of Andhra Pradesh, Agric. Marketing. 2003; 46(2): 2-4