

Economics of turmeric production under conventional and modern methods in Belgaum district of northern Karnataka

■ SARFRAZ SHEIKH, RAGHAVENDRA CHOURAD, SHREYA AMARAPURKAR AND RAGHAVENDRA KONDAGURI

Received : 24.01.2014; Revised : 23.02.2014; Accepted : 19.03.2014

ABSTRACT

Turmeric, with its brilliant yellow colour, has been used as a dye, medicine and flavoring. Turmeric has been used medicinally throughout Asia to treat stomach and liver ailments. It also was used externally, to heal sores and as a cosmetic. The present study is an attempt for comparative study of traditional and modern method of turmeric production with reference to cost and returns structure in Belgaum district of Karnataka state. The study revealed that, cost of cultivation on modern farmers was less than that of traditional farmers. The cost of human labour, rhizomes, chemical fertilizers and cost of plant protection chemicals on turmeric cultivation were the major factors in the cost. In the total cost, variable costs accounted for a major share. The proportion of variable cost was more on traditional as compared to modern farmers.

KEY WORDS : Turmeric, Modern cultivation, Cost, Returns, Conventional

How to cite this paper : Sheikh, Sarfraz, Chourad, Raghavendra, Amarapurkar, Shreya and Kondaguri, Raghavendra (2014). Economics of turmeric production under conventional and modern methods in Belgaum district of northern Karnataka. *Internat. J. Com. & Bus. Manage*, 7(1) : 100-104.

Turmeric (*Curcuma longa*) strictly speaking is a condiment crop which has been used for colouring, flavoring and medicinal purposes. Turmeric occupies prominent position among the spices produced in India. It ranks fourth in area and second in production. In the area of

export, turmeric occupies second position in terms of quantity and fourth position in the export earnings among the spices. Turmeric the golden spice is widely cultivated in different countries such as India, China, Myanmar, Nigeria, Bangladesh, Pakistan, Sri Lanka, Taiwan, Indonesia etc. Among these countries, India occupies first position in area, and also in production. In India, turmeric is grown in 18 states and Andhra Pradesh, Tamil Nadu, Karnataka and West Bengal are the major turmeric producing states. According to the Bureau of Indian Standards (BIS), 63 spices were grown in India. The spices were grown throughout the country from tropical to temperate climate. India has the highest number of spice varieties in the world. As per the definition of International spice group "spices are any of the flavored or aromatic substances of vegetable origin obtained from the tropical or other plants, commonly used as condiments or employed for the other purposes on account of their fragrance preservation or medicinal qualities". The spice turmeric or *Haldi* constitutes boiled, dried, cleaned and

MEMBERS OF THE RESEARCH FORUM

Correspondence to:

SARFRAZ SHEIKH, Department of Agribusiness Management, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

Authors' affiliations:

RAGHAVENDRA CHOURAD, Department of Agricultural Economics, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

SHREYA AMARAPURKAR, Department of Agribusiness Management, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

RAGHAVENDRA KONDAGURI, Raitha Samperka Kendra, KOPPAL (KARNATAKA) INDIA

polished rhizomes (the underground swollen stem of plant) of *Curcuma longa*. The plant, a herbaceous perennial, 60-90 cm tall with a short stem and tufted leaves, is a native of India or possibly China and is now a commercial crop of tropics. India is by far the largest producer and exporter of turmeric in the world. Turmeric occupies about 6 per cent of the total area under spices and condiments in India.

Economic use of turmeric

Turmeric is one of the multi-use products which has many valuable properties and uses. It is extensively used in food, textile, medicine and cosmetic industries. The curry powder which is one of the indispensable ingredients in the Indian foods, contains minimum five per cent to maximum thirty per cent of the turmeric powder in its total content. Turmeric has colouring property because of the curcumin content, and hence it is used as natural colouring agent for food stuffs, jellies and fruit drinks. The dye made out of turmeric is used in the textile, paint and varnish industries. Turmeric is used in the cosmetic industries for its unique properties such as skin clearing property. It checks growth of hair and adds beauty to the face. Turmeric plays prominent role in the medicinal industries, serving as an ingredient for the preparation of valuable drugs for many of the disorders in human beings.

Global production scenario:

Turmeric can be cultivated in the tropical and subtropical countries. It is grown throughout the world particularly in the tropical countries. Though it is grown in many countries, yet it is not commercially exploited in most of the countries. Among these countries India occupies first position in area and also in total production.

Indian scenario:

Turmeric is a seasonal product which is available in the market mainly in two seasons, commencing in mid February to May and second season is mid August to October. The important varieties used in India are: 'Alleppey Finger' (Kerala) Erode and Salem turmeric' (Tamil Nadu), 'Rajapure' and 'Sangli turmeric' (Maharashtra) and Nizamabad Bulb' (Andhra Pradesh) in Tamil Nadu, the important varieties in cultivation are Erode local, BSR-1, PTS-10, Roma, Suguna, Sudarsana and Salem local. Among these varieties, 70-75 per cent is occupied by the local varieties. Some of the important turmeric varieties exported from India is Alleppey Finger Turmeric, Rajapuri, Madras and Erode variety. The processed forms of turmeric exported are dry turmeric, fresh turmeric, turmeric powder and oleoresin.

Karnataka scenario:

Karnataka is the third largest producer of turmeric in

India after Andhra Pradesh and Tamil Nadu. The major districts which are producing turmeric in the states are Channarayana, Mysore, Bagalkot, Belgaum and Bidar. Hence the present investigation was planned with the objective to study the comparative study of traditional and modern method of turmeric production with reference to cost and returns structure Belgaum district of Karnataka state.

METHODOLOGY

Belgaum district was selected because of highest area and production. The tabular analysis (percentages, means, and ratios) was worked out to analyse the data. Multistage random sampling technique was employed for selection of sample respondents. Primary data were collected through personal interview from the farmers with the help of well structured and pre-tested schedule on turmeric samples from the farmers on conventional and modern methods. The primary data pertaining to 2012-13 were collected for the selected farmers. The study sample consisted of 60 farmers constituting 30 from conventional and 30 from modern method of cultivation of turmeric farmers.

ANALYSIS AND DISCUSSION

Per acre cost of cultivation of turmeric crop on traditional and modern farmers is presented in Table 1. The table indicated that the total cost of turmeric cultivation on modern farmers was less than that of traditional farmers. The average cost of cultivation per acre of turmeric on modern farmer was Rs. 67634.27 as against Rs. 74898.74 on traditional farmers. The cost of human labour, rhizomes, chemical fertilizers and cost of plant protection chemicals on turmeric cultivation were the major factors in the cost. In the total cost, variable costs accounted for a major share. The proportion of variable cost was Rs. 65719.25 and Rs. 58507.52 on traditional and modern farmers, respectively. In case of traditional farmers, the variable costs mainly comprised of cost of human labour, cost of rhizome and cost of fertilizers which was Rs. 13111.65, Rs. 35614.32 and Rs. 4319.27 accounting for 17.51 per cent, 47.55 per cent and 5.77 per cent of the total cost of cultivation, respectively. The other variable cost items such as cost of FYM, cost of bullock labour and interest on the working capital accounted for 1.25 per cent (Rs. 938.40), 3.31 per cent (Rs. 2475.53) and 6.50 per cent (Rs. 4868.09) of the total cost of cultivation of turmeric on traditional farmers, respectively. In the cost of cultivation of turmeric on modern farmers, the variable cost mainly comprised of cost of human labour, cost of rhizomes, cost of machine labour, cost of chemical fertilizers and cost of plant protection chemicals which were Rs. 11232.70, Rs. 31207.68, Rs. 2288.92, Rs. 3753.53 and Rs. 3671.48 accounting for 16.61 per cent, 46.14 per cent, 3.38 per cent, 5.55 per cent and 5.43 per cent of the total

cost of cultivation, respectively. The expenditure on machine labour was found to be an important item in the total cost of cultivation on modern farmers. The other variable cost items such as cost of FYM, cost of bullock labour and interest on working capital accounted for 1.90 per cent (Rs. 1282.82), 1.09 per cent (Rs. 736.51) and 6.41 per cent (Rs. 4333.89) of the total cost of cultivation of turmeric. The share of fixed cost in total cost of cultivation of turmeric on traditional farmers and modern farmers were Rs. 9179.49 and Rs. 9126.75, respectively. Among the items of fixed cost, the rental value of the land had a maximum share in the total cost of cultivation on both traditional and modern farmers. Similar findings were observed from the studies conducted by Sita Devi and Ponnarasi (2009) who made investigation on modern rice technology and its adoption behaviour in Tamil

Nadu. The study revealed that per hectare cost of cultivation was about 10 per cent lower in SRI than the traditional method.

The marketing cost per quintal of turmeric has been explained in Table 2. The cost incurred by traditional farmers was seen high *i.e.* Rs. 207.97 whereas in modern farmers it was Rs. 158.24. The major difference in traditional and modern farmers was observed in storage losses and rent on shop and godown. The storage losses were seen higher which had 47.31 per cent and 29.78 per cent for traditional and modern farmers, respectively. Rent on shop and godown was the next highest having, 11.44 per cent and 16.58 per cent for traditional and modern farmers, respectively. Grading of the turmeric incurred highest share in modern farmers (Rs. 22.63) compared to traditional farmers it is Rs. 19.47. Similar results were observed by Ashok and Maheswari (2008) where

Table 1: Cost of cultivation in turmeric (Rs. per acre)

| Sr. No. | Particulars | Traditional | Per cent | Modern | Per cent | Over all | Per cent |
|-------------------------|------------------------------------|-------------|----------|----------|----------|----------|----------|
| I. Variable cost | | | | | | | |
| 1. | Human labour | 13111.65 | 17.51 | 11232.70 | 16.61 | 12172.17 | 17.08 |
| 2. | Bullock labour | 2475.53 | 3.31 | 736.51 | 1.09 | 1606.02 | 2.25 |
| 3. | Machine labour | 932.46 | 1.24 | 2288.92 | 3.38 | 1610.69 | 2.26 |
| 4. | Rhizome material | 35614.32 | 47.55 | 31207.68 | 46.14 | 33411.00 | 46.88 |
| 5. | Farm yard manure | 938.40 | 1.25 | 1282.82 | 1.90 | 1110.61 | 1.56 |
| 6. | Fertilizers | 4319.27 | 5.77 | 3753.53 | 5.55 | 4036.40 | 5.66 |
| 7. | PPC | 3459.53 | 4.62 | 3671.48 | 5.43 | 3565.51 | 5.00 |
| 8. | Interest on working capital @ 8% | 4868.09 | 6.50 | 4333.89 | 6.41 | 4600.99 | 6.46 |
| | Subtotal (I) | 65719.25 | - | 58507.52 | - | 62113.39 | - |
| II. Fixed cost | | | | | | | |
| 1. | Rental value of land | 7250.00 | 9.68 | 7250.00 | 10.72 | 7250.00 | 10.17 |
| 2. | Land revenue | 25.00 | 0.03 | 25.00 | 0.04 | 25.00 | 0.04 |
| 3. | Depreciation | 994.81 | 1.33 | 947.30 | 1.40 | 971.06 | 1.36 |
| 4. | Interest on fixed capital @11% | 909.68 | 1.21 | 904.45 | 1.34 | 907.07 | 1.27 |
| | Subtotal (II) | 9179.49 | - | 9126.75 | - | 9153.13 | - |
| | Total cost of cultivation (I + II) | 74898.74 | 100.00 | 67634.27 | 100.00 | 71266.52 | 100.00 |

Table 2: Marketing cost in turmeric

| Sr. No. | Particulars | (per quintal) | |
|---------|-------------------------------|---------------|--------------|
| | | Traditional | Modern |
| 1. | Transportation charges | 16.65(8.01) | 12.86(8.13) |
| 2. | Rent on shop and godown | 23.79(11.44) | 26.24(16.58) |
| 3. | Electricity charges | 4.76(2.29) | 8.56(5.41) |
| 4. | Value of storage losses | 98.39(47.31) | 47.12(29.78) |
| 5. | Packing charges | 37.42(17.99) | 31.09(19.65) |
| 6. | Grading charge | 19.47(9.36) | 22.63(14.30) |
| 7. | Loading and unloading charges | 7.49(3.60) | 9.74(6.16) |
| | Total | 207.97(100) | 158.24(100) |

storage losses were seen high in marketing cost. The transportation cost share was seen almost same, having around eight per cent each.

Marketing cost and net returns are presented in Table 3. The per acre average yield of turmeric on traditional farmer (23.14 quintals) was comparatively lower than that of modern farmer (27.68 quintals). The average per quintal selling price of traditional farmers turmeric was Rs.5500 which was found to be lower than that of modern farmers (Rs.5800). The average processing cost of traditional turmeric farmers was Rs. 9076.80 as against Rs. 6724.20 per quintal of modern farmers. The marketing cost paid during marketing of produce was Rs. 4812.43 per quintal in traditional, as against Rs. 4073.09 per quintal for modern farm produced turmeric. The return structure in turmeric clearly revealed that the gross return per acre was higher (Rs. 200129) on modern farmers compared to that of traditional farmers (Rs. 167765) with a positive net return on both the categories of the farmers. The net return on traditional farmer was Rs. 78977.03 and was Rs. 121697.43 on modern farmers. The B:C ratio was also higher on modern farmers (2.55) compared to traditional farmers (1.89) Lokesh and Chandrakanth (2003) also studied the economics of production, marketing and processing of turmeric in Karnataka.

Conclusion:

Study revealed that among the two categories of farmers the total cost incurred by the traditional farmers was high as compared to modern farmers. This may be attributable to the fact that traditional farmers used highest rhizome material and

applied more fertilizers than their counter parts. Marketing cost was the major cost component. The per quintal cost incurred by traditional farmers was seen highest in case of modern farmers. The major difference in traditional and modern farmers was observed in storage losses and rent on shop and godown. Because of lack of storage facilities, the storage loss was seen highest 47.31 per cent and 29.78 per cent for traditional and modern farmers. Rent on shop and godown was the next highest having 11.44 per cent and 16.58 per cent for traditional and modern farmers, respectively. The cost of grading and standerdisation of turmeric incurred highest share in modern farmers compared to traditional farmers. The per acre average yield of turmeric on traditional farmers was comparatively lower than the modern farmers because of improved harvesting methods. Modern farmers got highest price for their produce because they used good post harvesting management which increased quality of the turmeric. Because of reduced human labour and quick machine labour, the average processing cost of traditional turmeric farmers was highest against modern farmers. The total marketing cost paid during the period of traditional was more per quintal, as compared to modern farmers. The cost of turmeric rhizomes was high. Turmeric rhizome of high quality should be made available to the farmers at affordable rates to increase the use by farmers and to increase their profitability. Turmeric farmers were more educated and education level of the farmers played a crucial role in adopting the turmeric cultivation and increasing the returns from value addition and increase in their profit. The role of public extension system need to be stressed upon for capacity building of farmers for

| Sr. No. | Particulars | Traditional | Modern | Over all |
|---------|--|-------------|-----------|-----------|
| 1. | Total cost of cultivation | 74898.74 | 67634.27 | 71266.52 |
| 2. | Total cost of processing | 9076.80 | 6724.20 | 7900.50 |
| 3. | Total cost marketing | 4812.43 | 4073.10 | 4442.76 |
| 4. | Total A+B+C | 88787.97 | 78431.57 | 83609.77 |
| 5. | Gross returns including by-products (Rs./ha) | 167765.00 | 200129.00 | 183606.50 |
| 6. | Net return | 78977.03 | 121697.43 | 99996.73 |
| 7. | Cost of production (Rs./qtl) | 3836.99 | 2833.51 | 3290.43 |
| 8. | Selling price (Rs./ qtl) | | | |
| I. | Dry turmeric | 5500 | 5800 | 5650 |
| ii | Mother Rhizome | 6500 | 6500 | 6500 |
| 9. | Profit (Rs./qtl) | 3413.01 | 4396.58 | 3935.33 |
| 10. | Yield (qtl/ac) | | | |
| i. | Main product | 23.14 | 27.68 | 25.41 |
| ii.. | Mother rhizome | 6.23 | 6.09 | 6.16 |
| 11. | B:C ratio | 1.89 | 2.55 | 2.20 |

optimum harnessing of the benefits of new generation technologies like mechanised value addition.

REFERENCES

- Anand, S.K. (2011). Supply chain management in arecanut – A comparative study of co-operative and private processing units in Uttara Kannada district. MBA Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).
- Ashok, K.R. and Maheswari, R. (2008). Post-harvest losses in banana in Tamil Nadu. *Indian J. Agric. Mktg.*, **22** (3) : 38-46.
- Chandrashekar (1993). Production and marketing of rainfed groundnut in Chitradurga district, Karnataka. MBA Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).
- Jaiswal, Ankit (2009). Economics of production and value addition to soybean in Madhya Pradesh. MBA Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).
- Kumar, Anil and Arora, V. P. S. (1999). Post-harvest management of vegetables in Uttar Pradesh hills. *Indian J. Agric. Mktg.*, **13**(2): 6-14.
- Lokesh, G.B. and Chandrakanth, M. G. (2003). Economics of production, marketing and processing of turmeric in Karnataka. *Indian J. Arecanut, Spices & Medic. Plants*, **5** (2) : 55-60.
- Sita Devi, K. and Ponnarasi, T. (2009). An economic analysis of modern rice production technology and its adoption behaviour in Tamil Nadu. *Agric. Econ. Res. Rev.*, **22**: 340-347.

7th
Year
★★★★★ of Excellence ★★★★★