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Analysis of Medicinal Plants and Senna Leaves in Kayattar Block of Tuticorin District

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Abstract

Medicinal plants are gaining prominence and promoted for commercial cultivation in India in order to meet the cumulative demand within the national and export markets.The present paper discusses the development and export of medicinal plants and senna leaves in Kayattar block of Tuticorin District.The present study is based on both primary and secondary data. The primary data relates to the month of December 2017.Secondary source of information are collected from the annual reports of the department of agriculture, Tamilnadu, books, journals and websites. Percentage analysis, averages, trend coefficient, compound growth rate, ranking method and standard deviation were used for the analysis.It is revealed that among the respondents, 18% of farmers had at least 5 years of farming experience and 69% had 10 years of experience in growing medicinal plants and senna leaves. 9% of respondents have cultivated the medicinal plants and senna leaves for a period of 10 to 15 years. Only 4% of the sample have cultivated for more than 15 years. Table

supplementary shows that a considerablenumber of the farmers are married. They constitute 84 per cent of the sample and the rest 16 per cent are unmarried.It is inferred that most of the sample farmers attributed the reason of high income for the choice of medicinal plants and senna leaves cultivation was ranked first followed by less investment. Drought tolerant crop were ranked third, less conservation ranked fourth and own interest for the reason of groundnut cultivation ranked fifth respectively. It shows a positive trend in the quantum of exports of medicinal plants and senna leaves in Tuticorin district. The trend is positive and significant at 5 per cent level. The trend coefficientis 0.069 and 0.076 for medicinal plants and senna leaves respectively.The export of medicinal plants and senna is growing at a compounded rate of 7.81 per cent per annum and 9.04 per cent per annum respectively.It is obvious that cultivation of medicinal plants and sennawas extremely profitable in the study area. As the crop is cultivated as a rainfed crop in the study area and the crop is a drought tolerant one, it can withstand drought conditions up to a certain level.

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Key words: medicinal plants, traditional health, trend coefficient, compound growth rate, microclimatic conditions

Introduction

Medicinal plants are gaining popularity globally as a source of raw material for pharmaceuticals and traditional health care system (Azaizeh et al 2003; Kandari et al 2012). More than 85% of herbal medicines used in traditional health care systems are derived from medicinal plants (Prasad and Bhattacharya 2003) and ensure the livelihoods of millions of people, especially in the Indian Himalayan region (Phondani et al 2011).

The wide altitudinal variation, different habitat types, and varying microclimatic conditions in the Himalayan region form an ideal environment for the growth and development of medicinal plants (Kala 2005). Medicinal plants have become a priority agenda as part of meeting the international obligations under the biodiversity convention (Rao et al 2003). As such, medicinal plants cultivation is emerging as a sector of self-employment (Maikhuri et al 2001) and an option for livelihood enhancement versus the cultivation of traditional food crops (Nautiyal and Nautiyal2004).

This is particularly important when demand for a variety of medicinal plants species is increasing with the expanding growth of human population (Maikhuri et al 2003). Tamil Nadu holds a mainpart in cultivation and export of more than 50 medicinal plants. Tamil Nadu has great possible for growth of medicinal plants as a commercially feasible venture. Its rich bio-diversity and varied agro-climate deliverconducive atmosphere for elevation of medicinal plants as a successful commercial undertaking.

In Tamil Nadu, the medicinal and aromatic plants are cultivated in 11684 hectares. In India, Andhra Pradesh and Karnataka, Pune (Maharashtra), Gujarat (Anand and Mehsana), Rajastan (Kodhpur) and Delhi are the major states are focussed on the cultivation of Senna. Senna is a medicinal plant which is commercially cultivated in thedry, coastal districts of Tamil Nadu in Thoothukudi, Tirunelveli, Ramanathpuram and Madurai. According to the Directorate of Horticulture and Plantation Crops the area, production and productivity of Senna in Tamil Nadu is 1718 ha, 1959 MT and 1.14 (MT/ha), respectively.The present paper discusses the development and export of medicinal plants and senna leaves in Kayattar blockof Tuticorin District.

Objectives of the present study

1. To analyze the socio economic conditions of medicinal plants and senna leaves farmers in Kayattar block of Tuticorin District.
2. To identify the reasons for the choice of medicinal plants and senna leaves cultivation in Kayattar block.

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3. To identify the years of experience of the sample respondents in cultivatingmedicinal plants and sennaleaves.
4. To evaluate the trend and export of medicinal plants and senna leaves for Tuticorin District

Methodology

The present study is based on both primary and secondary data. The present study has covered Kayattar blockfrom Tuticorin District selected for the study. The sample collected for the research was based on stratified random sample from different income categories of the study area has been used. The total household sample is 150.A separate interview schedule was designed, pilot tested and used for data collection. This is purely a descriptive study.The primary data relates to the month of December 2017.Secondary source of information are collected from the annual reports of the department of agriculture, Tamilnadu, books, journals and websites. Percentage analysis, averages, trend coefficient, compound growth rate, ranking method and standard deviation were used for the analysis.

Review of literature

Vaseeharan (1997) studied the economics of Senna cultivation and marketing in Tamil Nadu and reported that inadequate rainfall, shortage of labour and low yield were the major problems in Senna cultivation, high cost of transportation, monopoly of Senna traders and price fluctuations were the major marketing problems faced by the farmers and the major problems in Senna export was the poor quality of the produce due to the retention of pesticide residues in leaves and increase of afflotoxin content in pods.

Patel et al. (2013) assessed the economics and marketing of Senna crop in Kutch district of Gujarat and identified the only one marketing channel of Senna which is the Producer-Wholesalers in the city and also studied the price spread.

Kumar and Venkatesan (2011) focused on the economic analysis of Senna cultivation in the Tirunelveli District. The economics has been worked out by comparing costs and returns at different stages by the conventional method and linear function has been fitted to evaluate resource use efficiency in the production of Senna cultivation. The overall Benefit-Cost ratio which indicates higher profit for farmers on less investment in Senna cultivation. High input cost, erratic supply of electricity, lack of adequate information, infrastructural facilities and regulated markets were the vital problems faced by the farmers.

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Socio-personal characteristics of respondents (n=150)

Variable	Categories	Percentage
Sex	Male	54
	Female	46
Age	20-40 years	67.1
	40-60 years	32.9
Education	Illiterate	8
	Primary	26
	Secondary	18
	Hr. Sec	36
	Graduate	12
Family Size (years)	Less than 3	10
	Low (3-6)	20
	Medium (6-9)	10
	Large (9-12)	20
	More than 12	40
Family Type	Nuclear Family	90
	Joint Family	10
Land Holdings	Small Farmers	66
	Medium Farmers	20
	Large Farmers	10
	Landless	4
Livestock	Goat	30
	sheep	12
	Cattle	20
	buffaloes	38
Experience in years	Below 5	18
	5-10	69
	10-15	9
	Above 15	4

Marital Status	Married	84
	Unmarried	16

Source: Primary Data

Results and discussion

The socio-economic characteristics of respondents were analyzed and presented in the above table.

From the 150 respondents, 54 percent respondents are male for the study. From the table, it is revealed that the percentage of 20-40 years respondents is more i.e., 67%. As per the survey young and middle age group's involvements is higher than that of old aged groups and mean age of the family worked out to be 48.36 years and standard deviation was 36.14 in the study area.

It is evident from the results that 26% of the respondents had primary education, about 18% had high school education, about 36% possessed higher secondary level education and only about 12% had pursued degrees. Further, 8% remained illiterate. Results on family size categories indicate that majority of the respondents i.e., 40 percentage of families are having more than 12 size ranging from members and mean size of the family worked out to be 10 years and standard deviation was 7.3549.

Results on family type revealed that 90 percent of the respondents belonging to the nuclear family. This clearly indicates the declining of the joint family system. Results on land holding revealed that the number of small farmers forms the majority (66%). The next bigger group is the medium farmers (20%). The numbers of large farmers are quite few (10%), while the landless are almost insignificant (4%).

Further, results exposed that cattle, goat, sheep and buffaloes are the major livestock in the area. About 30% of the sample farmers had goat, about 38% of them maintained buffaloes and about 20% of them had cattle. Poultry is widely prevalent in the area.

Among the respondents, 18% of farmers had at least 5 years of farming experience and 69% had 10 years of experience in growing medicinal plants and senna leaves. 9% of respondents have cultivated the medicinal plants and senna leaves for a period of 10 to 15 years. Only 4% of the sample have cultivated for more than 15 years. Table supplementary shows that a considerablenumber of the farmers are married. They constitute 84 per cent of the sample and the rest 16 per cent are unmarried.

Reasons for the choice ofmedicinal plants and senna leavecultivation

Reasons	Weighted Average	Rank
Less investment	59.68	II
Drought tolerant crop	52.02	III
Less conservation	48.63	IV
High income	67.01	I
Own interest	41.59	V

Source: Primary Data

It is inferred from the table that most of the sample farmers attributed the reason of high income for the choice ofmedicinal plants and senna leaves cultivation was ranked first followed by less investment. Drought tolerant crop were ranked third, less conservationranked fourth and own interest for the reason of groundnut cultivation ranked fifth respectively.

Trend in export of medicinal plants and senna leaves for Tuticorin District

In order to assess the trend in the export of medicinal plants and senna leaves in Tuticorin district a trend line is fitted: Trend Equation: Log y = a +bt

Trend and growth of quantity of exports of medicinal plants and senna leaves from Tuticorin District

Particulars	Trend Coefficients		R^2	CGR (percentage)
	a	b		
Medicinal Plants	6.91	0.069*(14.68)	0.63	7.81
Senna Leaves	6.22	0.076*(9.82)	0.77	9.04

* Significant at 5 per cent level.

Note: CGR = Compound Growth Rate

Figures in parentheses indicate t-values.

The above table shows a positive trend in the quantum of exports of medicinal plants and senna leaves in Tuticorin district. The trend is positive and significant at 5 per cent level. The trend coefficientis 0.069 and 0.076 for medicinal plants and senna leaves respectively.

The export of medicinal plants and senna is growing at a compounded rate of 7.81 per cent per annum and 9.04 per cent per annum respectively.

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Conclusion

It is obvious from the above case that cultivation of medicinal plants and sennawas extremely profitable in the study area. Even though, a huge amount of cash was needed for cultivation of this crop, farmers could obtain higher amount of profit. As the crop is cultivated as a rainfed crop in the study area and the crop is a drought tolerant one, it can withstand drought conditions upto a certain level. The crop needsnegligible care with the application of manures andfertilizers, weeding, etc. Since the crop is a medicinal plant usage of manures and fertilizersisless but the practice of pesticides is more in the study area to control pest incidence. Side by side advanced technology (high yielding variety, disease and pest management) could be modified to increase production of this crop. It tends to suggest that the research for the development of improved varieties of medicinal plants and sennashould be undertaken in the long run. Education should be one of the top priorities to develop the necessary human capital for sustainable development. Younger farmers need to prepare to increase their competence.

References

[1] Azaizeh H, Fulder S, Khalil K, et al. 2003. Ethnomedicinal knowledge of local Arab practitioners in the Middle East Region. Fitoterapia 74:98e108.

[2] Kala CP. 2005. Indigenous uses, population density and conservation of threatened medicinal plants in protected areas of the Indian Himalayas. Conservation Biology 19:368e378.

[3] Kandari LS, Phondani PC, Payal KC, et al. 2012. Ethnobotanical study towards conservation of medicinal and aromatic plants in upper catchments of Dhauli Ganga in the Central Himalaya. Journal of Mountain Science 9:286e296.

[4] Kumar, V.T. and Venkatesan, C. (2011). Economics analysis of Senna cultivation in Tamil Nadu: A Case Study of Tirunelveli District. Internat. J. Curr. Res., 4 (8): 114-116.

[5] Maikhuri RK, Nautiyal S, Rao KS. 2001. Medicinal plant cultivation practices of Bhotiyas in Nanda Devi Biosphere Reserve villages of Garhwal Himalaya. In: Samant SS, Dhar U, Palni LMS, editors. Himalayan medicinal plants: potential and prospects. Nainital, India: GyanodayaPrakashan. pp. 217e328.

[6] Maikhuri RK, Rao KS, Chauhan K, et al. 2003. Development of marketing of medicinal plants and other forest products: can it be a path way for effective management and conservation? Indian Forester 129:169e178.

[7] Nautiyal MC, Nautiyal BP. 2004. Agro-techniques for High Altitude Medicinal and

Aromatic Plants. Dehradun, India: Bishen Singh Mahendra Pal Singh, International Book Distributors. pp. 1e202.

[8] Patel, I.S., Thankar, K.P., Bela, R. Sadhu and BhasitaNavalawala (2013). An economic analysis of production and marketing of Senna (Medicinal Crop) in Kutch District of Gujarat state. Indian J. Agric. Mktg., 27 (1) : 1- 6.

[9] Phondani PC, Negi VS, Bhatt ID, et al. 2011. Promotion of medicinal and aromatic plants cultivation for improving livelihood security: a case study from West Himalaya, India. International Journal of Medicinal and Aromatic Plants 1:245e 252.

[10] Prasad R, Bhattacharya P. 2003. Sustainable harvesting of medicinal plant resources. In: Roy SB, editor. Contemporary studies in natural resource management in India. New Delhi, India: Inter-India Publications. pp. 168e198.

[11] Rao KS, Semwal RL, Maikhuri RK, et al. 2003. Indigenous ecological knowledge, biodiversity and sustainable development in the central Himalayas. Tropical Ecology 44:93e111.

[12] Vaseeharan, S.S. (1997). An economic analysis of production and marketing of medicinal plants (Senna and periwinkle) in Tamil Nadu cultivation