



Marketing Efficiency of Senna Medicinal Plants in Thoothukudi District

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Abstract

The medicinal plants in India have got an anchor role to play as they offer a wide scope for increasing export earnings which are so vital for improving the country's economic position. Moreover, the medicinal plants are used for producing life-saving drugs and the gradual diversion in the attention of the masses to Ayurvedic medicines offers a wide scope within the country itself. The developing countries are the sole suppliers of medicinal plants to western countries and efforts to increase their productivity would boost our exports considerably. This paper aims to study the marketing efficiency of Senna Medicinal Plants in Thoothukudi district. It has revealed that among 250 sample respondents, the majority of the farmers are in the age group of 40-55 years. The mean age of farmers worked out to be 43.89 years. By using Garrett's score the first rank assigned to more demand followed by high profit. The third and fourth prioritised reasons for senna cultivation are intercrop facility and quick sales. The fifth rank is given to durability of crop followed by climatic conditions. The input-output structure shows that average yield of Senna leaves per acre is 8.641 tonnes for the farmers. The difference in yield is found to be statistically significant at 5 per cent level. The difference in the application of manure and mechanical power is statistically significant at 5 per cent level. The input-output structure reveals that there is a significant difference in yield per acre of Senna leaves. The study reveals that improper weighing is the first obstacle followed by unauthorised deductions. Lack of regulated markets, price fluctuations and the presence of too many middlemen were felt by the Senna farmers. Thus, it may conclude from the analysis that the soil of Thoothukudi district is more suitable for senna cultivation. While, improper weighing and unauthorised deductions are found to be most important problems of senna marketing. If these problems are rectified, the senna growers in this district would be



greatly benefited and senna cultivation would increase and this will arrange the sufferings are the senna producers and better their status among the farmers.

Keywords: medicinal plants, export earnings, Ayurvedic medicines, aromatic plants, senna marketing, input-output

Introduction

Medicinal plants are gaining significance and are encouraged for profitable farming in India to meet the growing demand within the domestic and export markets. Tamil Nadu holds the central part in cultivation and export of more than 50 medicinal plants. Any plan of economic development that aims at diminishing the poverty of agricultural population, reducing consumer food prices, earning more foreign exchange or eliminating economic waste, has, therefore, to pay particular attention to the development of effective marketing for food and agricultural products (Jha and Singh, 2007).

It is noteworthy that effective Intellectual Property Right protection has helped countries like China to establish supremacy in the world trade. Forty-five percent of all patents on the herb or herbal based or related medicine is with China closely followed by Japan with a 28 percent share (Tannan, 2006). The Government of India has identified medicinal plants as one of the thrust areas, and various programmes have been initiated for the preservation of medicinal plants found in the forests and protected areas as well as cultivation of these plants in the degraded forest areas. Medicinal Plants Conservation Areas (MPCA) has established in the southern States of Kerala, Tamil Nadu and Karnataka and Medicinal Plants Conservation Network (MPCN) for in-situ conservation (Gandhi, 2006).

Senna is a well-known drug in the Unani system of medicine and has been comprised in Indian, British and many other pharmacopoeias of the World (Pharmacopoeia of India, 1966). The Senna plant requires bright sunshine. Occasional drizzling during the growth period is conducive for growth. Heavy rain and cloudy weather are not beneficial for the crop (Gupta, 1971). It reported that over 8000 plants have medicinal value out of 17,000 flowering plants. Of this, over 600 rate medicinal plants found in Tamil Nadu. Over 90% of these medicinal plants occur in the forests of Tamil Nadu (Odessey, 1999).

In Tuticorin area, the crop is grown after the harvest of paddy by utilising the moisture left over in the soil. In specific areas, farmers grow senna in garden lands also with partial irrigation. In Tuticorin and Tirunelveli districts, more than 5000 hectares lands used

for senna cultivation. From 1960 onwards the senna crop is grown even as wild growth. Traders and commission agents purchased a small quantity of senna from rural areas.

After 1980, the senna cultivation has been increasing all over Tamil Nadu, in paddy fields mainly in Tirunelveli, Tuticorin, Ramanathapuram and Madurai districts. The farmers bring it as cartloads to the traders (Dinamalar, 1990). The majority of the households interviewed were willing to pay and or paying for the seedlings of medicinal plants that supplied from the nursery managed by the medicinal plant's conservation parks. Much more importantly, the process of people to people extension was noticeable, i.e. on own initiative, some households started adding local medicinal; plants in their gardens; shared their knowledge and plant materials with the neighbouring households which required them to meet their common health problems (Ras, 1995). This paper aims to study the marketing efficiency of Senna Medicinal Plants in Thoothukudi district.

Production of Medicinal Plants in Tamil Nadu

In Tamil Nadu, Medicinal and Aromatic plants cultivated in an area of 11684 Hectares. The critical medicinal plants grown in Tamil Nadu are Thuduvalai, Kandhakathri, Kanvali Kizhangu Keelanelli, Patchalai, Ashwagandha, Sarpagandha, Earankolli and Heartleaf. The following table related with area production and productivity of major medicinal and aromatic plants in Tamilnadu. The area, production and productivity of major medicinal & aromatic plants in Tamilnadu furnished in the table.

Medicinal Plants in Tamil Nadu

Crop	Area (in ha)	Production (in MT)	Productivity (MT/ha)
Thuduvalai	1718	1959	1.14
Kandhakathri	272	435	1.6
Keelanelli, Patchalai	1480	33323	22.52
Ashwagandha	361	1874	5.19
Sarpagandha.	456	7911	17.37
Earankolli Heartleaf	3886	4036	1.04
Others (Aromatic)	1865	1936	1.04
Total	10038	51474	

Source: Horticulture statistics, 2014



It inferred from the table that, the essential medicinal plants grown in Tamil Nadu are Thuduvalai, Kandhakathri, Keelanelli, Patchalai, Ashwagandha, Sarpagandha, Earankolli and Heartleaf. These plants have been cultivated in 1718, 272, 1480, 361, 456, 3886, hectares respectively. The 1865 hectares productivity depends on some Aromatic plants like kadukai, mint, ginger, etc. Total productivity is 51474 Metric tons in a year.

Objectives of the study

The basic objectives of the study are to analyse and understand Senna cultivating farmers. For the purpose of the study emphasizes on the following stated objectives.

- 1) To study the socio economic condition of Senna cultivating farmers
- 2) To examine the reasons for Senna cultivation in Thoothukudi district
- 3) To know the monthly income of Senna cultivating farmers
- 4) To find input-output structure of Senna leaves per acre of farmers
- 5) To identify the marketing efficiency of Senna market

Methodology

India stands first for the export of senna leaves in the world market. In India, senna is traditionally grown in Southern Districts of the Tamil Nadu, particularly, Thoothukudi Sivagangai and Viruthunagar districts. Among these districts, Thoothukudi district which shows the largest area under senna cultivation in Tamil Nadu has been selected as the study area for the present study. In this district, soil and climate conditions are most favourable for the cultivation of senna leaves. Further Senna leaves cultivated in this district has been exported through Tuticorin port. These are the main reason why Tuticorin district has been selected for the present study. The present study is based on both primary and secondary data. In Thoothukudi district two taluks like Kovilpatti and Ottapidaram taluks which show largest area under senna have been selected for the present study obtained from the records of the District Statistical Office. In order to achieve the objectives of the present study, 250 sample senna cultivators from two taluks like Kovilpatti and Ottapidaram were collected from marginal and small farmers based on area under senna. The data relates to the month of May 2018. A separate interview schedule was designed, pilot tested and used for data collection. Secondary data and information are collected from the annual reports of the Department of agriculture, Tamilnadu, books, journals and websites. This is purely a descriptive study.

Percentage analysis, averages, ranking method, t test and standard deviation were used for the analysis.

Review of Literature

Ashok Sharma, Anup kumar and Virmani in their review article discussed the biological background for the cultivation of senna including soil, climatic, land, manures, irrigation and weeding. They have also analysed the various types of pests and disease that cause damage to the plant and active steps to overcome the same.

Kapur and Atal have analysed the market potential for senna. The primary import markets are found to be the U.S.A., and U.K. and most of the produce shipped from Tuticorin and Bombay. The estimated world demand for senna is 10,000 tonnes per annum, and India exports 4,500 tonnes per annum on an average. Hence, the authors have stressed the need to increase the cultivation of senna in India.

Kumar et al., in their works have discussed cultivation of medicinal plants in Nagercoil, Kanyakumari district. In this work, they have discussed the scope of extending the area under the medicinal plants in varied agro-climatic conditions. Further, they have discussed production potentialities, the scope for rural employment and foreign exchange earnings.

Results and Discussion

Age-wise analysis of the farmers

Age (in years)	No. of Farmers	Percentage
18-25	33	13.2
25-40	64	25.6
40-55	92	36.8
55-70	61	24.4
Total	250	100

Source: survey data

It has revealed that among 250 sample respondents, the majority of the farmers are in the age group of 40-55 years. Only 33 (13.2%) of the head of the farmers are in the age group of 18-25 years, 64(25.6%) of the farmers fall under the age group of 25-40. 92(36.8) of the farmers are from the 40-55 age group, and the remaining 61(24.4%) of the farmers are from 55-70 age group. The mean age of farmers worked out to be 43.89 years.

Sex-wise analysis of the farmers

Sex	No. of Farmers	Percentage
Male	190	76.0
Female	60	24.0
Total	250	100

Source: survey data

It has inferred that out of 250 farmers in the Thoothukudi district, the majority of 190 (76.0 percent) are male and rest 60 (24.0 percent) is female respectively.

Educational Status of the Farmers

Education	No. of Farmers	Percentage
Illiterate	29	11.6
Primary	43	17.2
High school	124	49.6
College	38	15.2
Technical	16	6.4
Total	250	100

Source: survey data

Out of the 250 respondents, 29 persons (11.6%) are illiterate, 43 farmers (17.2) completed their primary school level. 124 persons (49.6%) have completed their high school education, 38 persons (15.2%) have finished a degree, and 16 people (6.4%) have finished technical level education.

Marital Status of the Farmers

Marital Status	No. of Farmers	Percentage
Married	206	82.4
Unmarried	44	17.6
Total	250	100

Source: survey data

The table reveals that out of 250 respondents, 206 (82.4%) farmers married 44 (17.6%) farmers are unmarried.

Family size of farmers

Family Size	Farmers	Percentage
Below 2	57	22.8
2-3	114	45.6
3-4	60	24.0
4 and above	19	7.6

Total	250	100
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Source: Survey data.

A maximum of 114 (45.6 percent) of farmers have a family size of 2- 3 members, followed by 60 (24.0 percent) having a family size of 3 - 4 members. 57 (22.8 percent) have a family size of below 2; and only nineteen (7.6 percent) having a family size of 4 and above. It observed from Table 4.8 that majority of them have a family size of 2- 3 members. The average size of the family worked out to be 2.67.

Monthly personal income

Personal Income	No. of Farmers	Percentage
Below Rs. 7000	29	11.6
Rs.7001 – Rs.9000	36	14.4
Rs.9001 - Rs.11000	68	27.2
Rs.11001 – Rs. 13000	88	35.2
Above - Rs.13001	29	11.6
Total	250	100

Source: Survey data

The above Table exhibits that 11.6 percent of the farmers had a monthly income of less than Rs.7000, 14.4 percent, 27.2 percent, 35.2 and 11.6 percent of the farmers had a monthly income of Rs.7001 to 9000, Rs.9001 to 11000, Rs.11001 to 13000 and above Rs.13001 respectively. The mean monthly personal income worked out to be Rs. 8880.5.

Reasons for Senna cultivation

Reasons	Average Score	Rank
High profit	61.43	II
Intercrop facility	56.29	III
More demand	65.17	I
Quick sales	59.46	IV
Climatic conditions	43.82	VI
Durability of crop	52.71	V

Source: Computed from Primary Data.

The table records the reasons for senna cultivation perception by the sample respondents. By using Garrett’s score the first rank assigned to more demand followed by high profit. The third and fourth prioritised reasons for senna cultivation are intercrop facility and quick sales. The fifth rank is given to durability of crop followed by climatic conditions.

Input-output structure of Senna leaves per acre of farmers

Particulars	Farmers	t
Human labour (in mandays)	21	0.41
Bullock labour (in pairs)	4	0.18
Manure (in Rs.)	1496.13	3.74*
Seed cost (in Rs.)	237.16	1.17
Mechanical power (in hours)	4.01	2.43*
Yield (in tonnes)	8.641	2.11*

Source: Computed from Primary Data.

The input-output structure shows that average yield of Senna leaves per acre is 8.641 tonnes for the farmers. The difference in yield is found to be statistically significant at 5 per cent level. The difference in the application of manure and mechanical power is statistically significant at 5 per cent level. The input-output structure reveals that there is a significant difference in yield per acre of Senna leaves.

Marketing Efficiency

The study of marketing channels is essential for evaluating the market structure, conduct and performance. The marketing channel means the passage or channel through which a commodity travels from the producer to the final consumer (Raju, 1990).

To assess the marketing efficiency in the sale of Senna leaves, Shepherd’s formula of the following form using:

$$\text{Marketing efficiency (M.E)} = \frac{V}{I} - 1$$

where,

V = Value of produce sold is consumers’ price per tonne of senna and

I = Total cost of marketing.

The marketing efficiency of Senna market based on the above analysis furnished in Table.

Marketing Efficiency of Senna Market

Particulars	Farmers
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Value of Senna leaves sold per tonne (in Rs.)	11508.3
Marketing cost per tonne (in Rs.)	1073.3
Marketing Efficiency (M.E.)	8.01

The table shows that the marketing efficiency of Senna is 8.01 for farms of the respondents. The high efficiency is because the chain of intermediaries is limited and the marketing margin for the intermediaries is less. Moreover, the marketing efficiency of farms depends on intermediaries for credit and transport.

Problems in Senna marketing

Problems	Mean Score	Rank
Unauthorised deductions	47.53	II
Lack of regulated markets	42.68	III
Improper weighing	58.19	I
Too many middlemen	36.74	V
Price fluctuations	39.02	IV

Source: Computed from Primary Data.

The table reveals that improper weighing is the first obstacle followed by unauthorised deductions. Lack of regulated markets, price fluctuations and the presence of too many middlemen were felt by the Senna farmers.

Conclusion

Thus, it may conclude from the analysis that the soil of Thoothukudi district is more suitable for senna cultivation. While, improper weighing and unauthorised deductions are found to be most important problems of senna marketing. If these problems are rectified, the senna growers in this district would be greatly benefited and senna cultivation would increase and this will arrange the sufferings are the senna producers and better their status among the farmers.

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