

## Golden Research Thoughts

### Abstract:-

Traditional medicine plays an important role in scientific research, particularly when the literature and field work data have been properly evaluated. Senna is wonder medicinal plant. Senna is widely used in Ayurveda, Unani, Siddha, Allopathy and other traditional systems of medicine mainly because of the laxative property of its aerial parts. The main aim of the paper is to estimate the cost of cultivation and net income generated from the cultivation of senna in Sivagangai District. The present study is based on both primary and secondary data covered only four months period (2011). Primary data has been collected through interview schedule. The total household sample is 75. The secondary data were collected from books and journals and websites. Percentage analysis, averages, and standard deviation were used for the analysis. It can be inferred that invariably most of the sample farmers (73.33 per cent) attributed the reason of high income for the choice of Senna cultivation. However, 19.67 per cent of the sample farmers said that they were traditionally growing Senna cultivation, while 8 per cent attributed the reason of short duration. It is understood that the farmers produced 236.93 kgs of senna and earned Rs.7916.28 per acre while their net returns per acre were Rs.5229.35 respectively. It indicates that the senna cultivating farmers were getting higher yield and thereby higher net income in the study area. The cost analysis reveals that per acre total cost, that is operational cost of cultivation worked out to Rs.2358.69, and the percentage cost a variable input (Cost A) to total cost (Cost C) was 87.78 per cent for senna farmers. It is observed that total cost incurred was found lower in the case of senna cultivating farmers in the study area. Thus, it is inferred from the analysis that the senna cultivating farmers were found more efficient both cost-wise and return wise.

### COST AND RETURNS STRUCTURE OF FARMERS CULTIVATING SENNA IN SIVAGANGAI DISTRICT OF TAMILNADU – A STUDY



**K. Jayanthi**

Assistant professor of Economics,  
Meenakshi College for  
Women, Chennai.

### Keywords:

Traditional Medicine, Medicinal Plant,  
Ailments, Resource Management, Variable Input,  
Operational Cost.

**INTRODUCTION**

The agriculture sector is the backbone of the country's economy. In 2007-08, agriculture accounted for 17.8 percent of India's Gross National Product (GNP) while 70.0 percent of India's workforce was engaged in farming (Anonymous, (2008). Herbal medicine places an investigable role in drug discovery and development. Traditional medicine play an important role in scientific research, particularly when the literature and field work data have been properly evaluated (Awadh et al., 2004).

Herbal medicines have good values in treating many diseases including infectious diseases, hypertension etc. That they can save lives of many, particularly in the developing countries is undisputable (Patrick. 2004). Herbal drugs obtained from plants are believed to be much safer: this has been proved in the treatment of various ailments (Mitalaya et al., 2003). Rural people not only depend on plants as sources of food, medicines, fodder, and fuel, but have also developed method of resource management, which may be some of the world's important habitats (Gemedo- Dalle et al., 2005).

Medicinal and aromatic plants constitute great economic and strategic values for Asia and the Pacific (Haq, 1993) and there is great potential to improve the yield and quality of these plants, either by more selection of existing species or varieties or through plant breeding or other novel methods of plant improvement. It was estimated that the area under cultivation of medicinal herbs exceeded 400,000 ha and the amount of medicinal herbs purchased exceeded 13 million ton. (Wijesekera, 1993). Senna is wonder medicinal plant. Senna is widely used in Ayurveda, Unani, Siddha, Allopathy and other traditional systems of medicine mainly because of the laxative property of its aerial parts.

The laxative property is mainly due to chemicals, namely sennoside A, B, C & D. The demand of leaves and pods are very high increasing day by day due to too much use in Ayurvedic preparations, herbal teas, bakery products and other home preparations all over the world. This crop is highly remunerative for the lands from where farmers are unable to get even Rs.1000/hect/year and that too without high inputs like water, fertilisers, pesticides etc. This crop is cultivated in Erode, Salem, Tirupur, Sivagangai, Dindugal and Karur districts of Tamilnadu in about 5,000 acres. The main aim of the paper is to estimate the cost of cultivation and net income generated from the cultivation of senna in Sivagangai District.

**Area and production of senna cultivation in India**

Year	Approx area (acre)	Approx. production (acre) of senna cultivation yield tones
2001	600	5000
2002	1800	7000
2003	1200	9000
2004	1500	10500
2005	1800	11000
2006	2000	12500
2007	2300	14000
2008	2800	14500
2009	3100	15000
2010	3500	16000
2011	3900	17000
2012	4300	19000
2013	4800	23000

**OBJECTIVES OF THE PRESENT STUDY**

**The Objectives of the present study are:**

- 1.To collect data on the socio-economic structure of senna cultivators in Sivagangai District.
- 2.To identify the reasons for the choice of senna cultivation in Sivagangai District.
- 3.To know the size of operational holdings of the sample farmers.
- 4.To evaluate the monthly income, expenditure and saving of the senna cultivators and
- 5.To study various problems in cultivation of senna.
- 6.To analyze the cost and returns structure of farmers cultivating senna in the study area.

**METHODOLOGY**

The present study has covered Sivagangai District. The present study is based on both primary and secondary data covered only four months period (2011). Primary data has been collected through interview schedule. The total household sample is 75. The secondary data were collected from books and journals and websites. A separate interview schedule was designed, pilot tested and used for data collection. This is purely a descriptive study. Class interval technique was used to analysis the age, income, saving and expenditure. Percentage analysis, averages, and standard deviation were used for the analysis.

**ANALYSIS AND INTERPRETATION**

**Sex wise classification of the sample respondents**

Sex	No. of Respondents	Percentage
Male	70	93.33
Female	5	6.67
<b>Total</b>	<b>75</b>	<b>100.00</b>

Source: Primary Data

From the table, it is revealed that the percentage of male respondents is more i.e., 93.33% in the sample families.

**Age wise classification of the respondents**

Age	No. of Respondents	Percentage
Young (15-30)	32	42.67
Middle (30-45)	38	50.67
Old (45-60)	5	6.67
Total	75	100.0

Source: Primary Data

A total of 75 respondents were surveyed. From the table, it is revealed that the percentage of middle age respondents is more i.e., 50.67%. As per the survey middle age groups involvements is higher than that of old and young aged groups in the study area.

**Educational Qualification of the respondents**

Qualification	No. of Respondents	Percentage
Illiterate	9	12.0
Primary	15	20.0
Secondary	40	53.33
Hr. Sec	8	10.67
Graduate	3	4.0
Total	75	100.0

Source: Primary Data

Education makes a difference in articulation of opinions. About 20% of the respondents had primary education, about 53.33% had high school education, about 10.67% possessed higher secondary level education and only about 4% had pursued degrees. Further, 12% remained illiterate.

**The number of respondents and their family size**

Size	No. of Respondents	Percentage
Low(1-3)	13	17.33
Medium (4-5)	45	60.00
Large (Above 5)	17	22.67
Total	75	100.0

Source: Primary Data

The majority of the respondents i.e., 60 percentage of families are having medium size ranging from 4-5 members.

**Marital status of the respondents**

Marital status	No. of Respondents	Percentage
Unmarried	12	16.00
Married	63	84.00
Total	75	100

Source: Primary Data

The table reveals that out of 75 sample respondents, about 84% were married and 16% were unmarried.

**Family type of the respondents**

Family Type	No. of Respondents	Percentage
Nuclear Family	60	80.0
Joint Family	15	20.0
Total	75	100.00

Source: Primary Data

This table exhibits that, 80 percent of the respondents belonging to the nuclear family. This clearly indicates the declining trend of the Joint family system.

**Size of Operational Holdings of the Sample Farmers**

Size of Holdings (in acres)	No. of Respondents	Percentage
Less than 1	18	24.00
1-2	36	48.00
2-5	10	13.33
5-8	8	10.67
Above 8	3	4.00
<b>Total</b>	<b>75</b>	<b>100</b>

Source: Primary Data

The table reveals that nearly 85.33 per cent of the operational holding was below 5 acres and remaining 14.67 per cent were above 5 acres. Among sample farmers, the dominant operational holding was between 2-5 acres and average size of operational holdings of the sample farmers in the study area was about 15 and standard deviation was about 12.92285.

**Reasons for the choice of Senna cultivation**

Reasons	No. of Respondents	Percentage
Traditional	14	19.67
High income	55	73.33
Short duration	6	8.00
<b>Total</b>	<b>75</b>	<b>100</b>

Source: Primary Data

It can be inferred from the table that invariably most of the sample farmers (73.33 per cent) attributed the reason of high income for the choice of Senna cultivation. However, 19.67 per cent of the sample farmers said that they were traditionally growing Senna cultivation, while 8 per cent attributed the reason of short duration.

**Monthly Income of the respondents**

Monthly Income (Rs.)	No. of Respondents	Percentage
500-1500	3	4.00
1500-2500	5	6.67
2500-3500	14	18.67
3500-4500	22	29.33
4500-5500	31	41.33
<b>Total</b>	<b>75</b>	<b>100</b>

Source: Primary data

The study revealed that 4% of the respondents are earning an income up to Rs.1500, 6.67% of the respondents are earning Rs.1500-Rs.2500 monthly 18.67% of the respondents are earning Rs.2500-Rs.3500 monthly, 29.33% of the respondents are earning Rs.3500-Rs.4500 monthly and the others (41.33%) are earning Rs. 4500-Rs.5500 monthly. The average monthly income of the Senna farm workers family is Rs. 3973.33.

**Monthly Family Expenditure of the respondents**

Monthly Expenditure (Rs.)	No. of Respondents	Percentage
500-1500	7	9.33
1500-2500	4	5.33
2500-3500	7	9.33
3500-4500	39	52.00
4500-5500	18	24.00
<b>Total</b>	<b>75</b>	<b>100</b>

Source: Primary data

As could be seen from the data, 9.33% of the respondents are spending up to Rs.1500, 5.33% of the respondents are spending Rs.1500-Rs.2500 monthly, 9.33% of the respondents are spending Rs.2500-Rs.3500 monthly, 52% of the respondents are spending Rs.3500-Rs.4500 monthly and the others (24%) are spending Rs. 4500-Rs.5500 monthly. The average monthly expenditure of the Senna farm workers family is Rs. 3760.

**Monthly Family saving of the respondents**

Monthly Saving (Rs.)	No. of Respondents	Percentage
500-1500	9	12.00
1500-2500	13	17.33
2500-3500	12	16.00
3500-4500	23	30.67
4500-5500	18	24.00
Total	75	100

Source: Primary data

It is clear from the above table that 12% of the respondents are saving up to Rs.1500, 17.33% of the respondents are saving Rs.1500-Rs.2500 monthly, 16% of the respondents are saving Rs.2500-Rs.3500 monthly, 30.67% of the respondents are saving Rs.3500-Rs.4500 monthly and the others (24%) are saving Rs. 4500-Rs.5500 monthly. The average monthly saving of the Senna farm workers family is Rs. 3373.33.

**Problems Faced by Senna cultivating Farmers**

Problems faced	No. of Respondents	Percentage
Heavy rain	60	80.00
Fluctuating price of fertilizer	5	6.67
Lack of loan facility	5	6.67
Lack of storage facilities	5	6.67
Total	75	100.00

Source: Primary Data

As could be seen from the data, the problem of heavy rain was reported by 80 per cent of the sample farmers. This indicated the magnitude of this problem faced by the Senna farmers. About 6.67 per cent of the sample respondents attributed the price fluctuation, lack of loan facility and lack of storage facilities as yet other important problems in order.

**THE PER ACRE AVERAGE COST AND RETURNS STRUCTURE OF FARMERS CULTIVATING SENNA**

Cost Component	Senna Farmers	Percentage
Human labour (including family labour)	1028.13	38.26
Bullock labour	216.82	8.07
Chemical fertilizer	302.91	11.27
Pesticide cost	167.38	6.23
Seed cost	153.64	5.72
Farm manure	194.37	7.23
Cost of Mechanical Power	128.06	4.77
Interest on working capital	167.38	6.23
Cost A	2358.69	87.78
Rent	193.74	7.21
Interest as fixed capital (excluding land cost) land revenue, less and taxes, depreciation of implements and machinery	134.50	5.01
Total – Cost C (total)	2686.93	100.00
Yield per acre in kg	236.93	
Gross Returns (Rs.)	7916.28	
Net Returns (Rs.)	5229.35	

Source: Survey data.

It is understood from Table that the farmers produced 236.93 kgs of senna and earned Rs. 7916.28

per acre while their net returns per acre were Rs.5229.35 respectively. It indicates that the senna cultivating farmers were getting higher yield and thereby higher net income in the study area.

The cost analysis reveals that per acre total cost, that is operational cost of cultivation worked out to Rs.2358.69, and the percentage cost a variable input (Cost A) to total cost (Cost C) was 87.78 per cent for senna farmers. It is observed that total cost incurred was found lower in the case of senna cultivating farmers in the study area.

The cost of human labour forms the major component of the total cost of production for senna cultivating farmers. Next to human labour, the amount spent on the use of chemical fertilizers occupied the major portion in the total cost of production. In Cost A, human labour cost was found to be high for senna cultivating farmers at 38.26 per cent followed by cost of chemical fertilizers. The senna cultivating farmers spent 11.27 per cent of their total cost on the utilisation of chemical fertilizer. Next to this the major cost component was cost of bullock labour which constituted 8.07 per cent of the total cost for senna cultivating farmers.

Cost of pesticides worked out to 6.23 per cent for the senna cultivating farmers. Farm manure constituted 7.23 per cent for senna cultivating farmers. The rent for land was accounted for 7.21 per cent for senna cultivating farmers. Interest as farm assets, depreciation of implements and machinery involved 5.01 per cent of the total cost for senna cultivating farmers respectively. It came behind the cost of farm manure, cost of irrigation, pesticides, seed cost and bullock labour. The costs of all the inputs except bullock labour were found to be higher for senna cultivating farmers.

### CONCLUSION

The present investigation revealed that medicinal plants still play a vital role in the primary health care of the people. This information and knowledge is useful for future generation. Due to lack of interest among the younger generation of local people we face the possibility of losing this wealth of knowledge in the near future. Moreover, it may further be mentioned that over exploitation of these species in the name of medicine may lead some species ultimately to the disappearance in future. Therefore, attention should also be made on proper exploitation and utilization of these medicinal plants.

Besides, though many parts of the senna plant have been used for medicinal purposes for a long time in different medicinal systems, in the study area only the seeds of the plant are harvested and marketed commercially. Hence, the Government should take initiative in order to widen the market of senna. Besides, the profit of the farmers through the cultivation of senna can also be increased only by standardizing the price of seeds and plant parts by the government of Tamilnadu through State Medicinal Plant Board. Thus, it is inferred from the analysis that the senna cultivating farmers were found more efficient both cost-wise and return wise.

### REFERENCES

1. Anonymous, (2008). Economic indicators, Yojana, 53 (8) :6
2. Awadh, A., Ali N., Al-rahwi, I., K., Lindequist, U., (2004). Some medicinal plants used in Yemeni herbal medicine to treat Malaria. *African journal of Traditional, Complementary and Alternative Medicines*, 1:72-76.
3. Gemedo-Dalle, T., Maass B.L., Isselstein, J., (2005). Plant biodiversity and Ethnobotany of Barana Pastoralists in Southern Oromia, Ethiopia. *Economic Botany*, 43-65.
4. Haq, N. 1993. Breeding and improvement of medicinal and aromatic plants. Proc. regional expert consultation on breeding and improvement of medicinal and aromatic plants in Asia, Thailand, 1-6 June 1993, FAO.
5. Mitalaya, K.D., Bhatt, D.C., Patel, N.K., Didia, S.K., (2003). Herbal medicines used for hair disorders by tribals and rural folk in Gujarat. *Indian Journal of Traditional Knowledge*, 389-392.
6. Patrick, O.E., 2004. Herbal Medicines: Challenges (Editorial). *Tropical journal Pharmaceutical Research*, 1of (2):53-54.
7. Wijesekera, R.B. 1993. Production and processing of medicinal and aromatic plants in Asia. Proc. regional expert consultation on breeding and improvement of medicinal and aromatic plants in Asia, Thailand, 1-6 June 1993, FAO.