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Research Article

An Economic Analysis of Production of Tobacco Flue Cured Virginia in West Godavari District of Andhra Pradesh

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ABSTRACT

Tobacco also called "Golden Leaf" is one of the important commercial crops of India and it's vital to the Indian economy. India has a prominent place in the production of tobacco in the world due varied agro-climatic conditions and different types of tobacco it produces. India is the World's second largest producer of tobacco after China, endowed with rich agro-climatic attributes such as fertile soils, rainfall and ample sunshine which lead to produce various types of tobacco. An attempt has been made in this study to examine the economic analysis of cost and return per hectare and input output ratio of tobacco in West Godavari district of Andhra Pradesh. The study made use of a multistage sampling and random sampling technique to select 100 respondents among those selected villages. Data for the study were collected with the aid of a well - structured questionnaires. Data collected were analyzed using tabulation method along with required statistical tool. The production of tobacco has increased largely due to productivity increase and increase in the area under the crop. Resource use structure in tobacco was found to be varied among the size groups. Production cost of tobacco was varied according to size groups of land holding. The per hectare cost of cultivation of tobacco was highest on small size farms and lowest on large size farms. The cost of cultivation was varied among the size groups of tobacco growers. The input output ratio is highest on large size farms and lowest on small size farms.

Keywords: *Tobacco, Cost and return, Input output ratio.*

INTRODUCTION

Tobacco is one of the economically and commercially significant agriculture crops in the world. It is drought tolerant, hardy of short duration crop which can be grown on soils where other crops cannot be cultivated profitably.

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Tobacco is the common name of the plant *Nicotianatabacum* Tobacco Nicotiana tabacum, is an herbaceous annual or perennial plant in the family solanacae grown for its leaves. The tobacco plant has a thick, hairy stem and large, simple leaves which are oval in shape. The tobacco plant produces white, cream, pink or red flowers which grow in large clusters, are tubular in appearance and can reach 3.5-5.5 cm (1, 25-2 in) in length. Tobacco may reach grown as a manual, surviving only one growing season. Tobacco may also be referred to as Virginia tobacco or cultivated tobacco and originates from South America. Bidi, pipe and hookah. Currently, Indian tobacco is exported to more than 80 countries spread over all the continents. Around 0.25% of India's cultivated land is being used for tobacco production. Tobacco is cultivated in an area of 0.4 million ha producing annually around 700 million kg of cured leaf out of which 260 M kg is Flue-Cured Virginia tobacco (cigarette type). The other types are Bidi, Hookah and Chewing, Cigar filler, Cigar Wrapper, Cheroot, Burley, Oriental HDBRG, Lanka etc. Tobacco is consumed in the form of cigarettes, cigar, and cheroots.

It provides employment directly and indirectly to 38 millions of people. As a commercial crop, tobacco forms an important item in the Indian export basket. FCV tobacco accounts for around 85 per cent of total tobacco exports. AndhraPradesh 99 per cent of total FCV Tobacco production in India. Increasing productivity and thereby reducing costs will greatly enhance the competitiveness of Tobacco industry both globally as well as in the domestic market. The flue-cured Virginia tobacco is now an essential ingredient of cigarettes all over the world. The main objective of this paper is to study cost and return per hectare and input output ratio of different size of farm groups and to estimate disposal pattern and marketable surplus of tobacco in different size of farm groups.

MATERIALS AND METHODS

The study was conducted in West Godavari district of Andhra Pradesh which is one of the 13 districts of Andhra Pradesh. West Godavari district comprises of 46 blocks among that 2 blocks i.e, Devarapalli and Koyalagudam blocks were selected for this study. From that 2 blocks 5% village's viz., Yeranagudem, Sangayagudem, Ponguturu, Gavaravarm, Bayyangudem, Gandhi Nagaram, were selected. A list of all tobacco farmers/respondents is prepared with the help of head of the village tobacco board auction or head of each selected villages in both block, there after farmers/respondents is categorized in 3 size groups on the basis of their land holding and then from each village 10% farmers were selected randomly from all the different size of farm groups. Data for the study was collected from 100 farmers randomly (i.e) 50 small farmers, 35 medium farmers and 15 large farmers. Tabulation method is used for analysis of data along with required statistical tool for the interpretation of the result.

RESULTS AND DISCUSSION

The study was conducted in West Godavari district of Andhra Pradesh. The necessary data were collected from the sample farmers spread over two blocks in above mentioned district. The present chapter is going to tell about the results and discussion for various objectives. The chapter is arranged in different sub-sections according to objectives of the study.

- To study cost and return per hectare and input output ratio of different size of farm groups.

Resource use and Cost of cultivation of Tobacco crop per hectare in different size of farm groups

The economic aspects of tobacco such as cost of cultivation, returns per hectare, input and output ratio of small size, medium and large size farm groups are given below.

Sl. No	Particulars of Farm Operations	Size of Farms Groups			Sample Average
		Small	Medium	Large	
1	**Operational costs**				
A	Human labour	22710 (10.30)	18520 (9.25)	11600 (6.10)	52830 (7.63)
	Owned	2271 (1.52)	128.3 (2.60)	102.1 (1.95)	457.5 (2.02)
	Hired	28000.00 (10.00)	21370.00 (9.21)	3002.5 (96.22)	52372.5 (8.25)
B	Tractor Power	8000.00 (6.95)	5244.00 (6.99)	2500.00 (6.96)	15744.00 (6.96)
	Owned	1025.00 (6.41)	850.00 (6.3)	675.00 (6.27)	2500.00 (6.32)
	Hired	7000.00 (9.33)	7000.00 (8.72)	1194.00 (9.0)	13194.00 (9.01)
C	Bullock labour	1000.00 (3.61)	500.00 (3.62)	248.00 (3.63)	1748.33 (3.62)
	Owned	-	-	-	-
	Hired	1000.00 (06)	1512.8 (6.02)	1173.60 (6.03)	1748.8 (6.01)
D	Seed	12210.00 (2.18)	4089.12 (2.18)	540.08 (2.10)	16839.66 (2.15)
E	Manures	7000.00 (0.10)	3020.00 (0.10)	1000.00 (0.10)	11040.00 (0.10)
F	Fertilizers	20100.00 (0.62)	9104.00 (0.64)	4108.00 (0.65)	33312.50 (0.63)
G	Plant protection chemicals	500.11 (5.75)	346.20 (5.75)	192.10 (5.75)	1038.00 (5.75)
H	Fuel wood	6000.6 (2.35)	3948.4 (2.20)	1896.00 (1.20)	11845 (2.21)
I	Transportation	200.10 (0.20)	125.03 (0.01)	100.10 (0.02)	425.23 (1.56)
J	Miscellaneous (Sukervot + Ropes)	2000.05 (1.20)	1562.25 (1.17)	1125.20 (1.13)	4687 (2.1)
K	Interest on working capital	1040.00	1000.00	950.00	2990.19
	Total variable costs	**58000.00**	**54000.00**	**40500.30**	**50833.34**
2	**Fixed costs**				
A	Land revenue	250 (0.20)	150 (0.04)	100 (0.00)	500 (16.6)
B	Tobacco board license fee	6.00 (0.06)	4.50 (0.02)	3.00 (0.6)	13.50 (4.5)
C	Depreciation	400.10 (0.22)	320.00 (0.12)	105.11 (0.11)	925.21 (1.14)
D	Rental value of owned land	21000 (22.14)	12020 (12.10)	17000 (0.04)	50000 (16.6)
E	Interest on fixed capital	1000.42 (0.80)	544.21 (0.15)	423.24 (0.004)	1967.87 (6.55)
	Total fixed capital	**19202.24 (6.40)**	**18004.21 (9.25)**	**16400.24 (7.3)**	**17868.89 (8.25)**
3	**Total cost of cultivation**	**75004.40 (100)**	**65502.10 (100)**	**65400.02 (100)**	**68635.52 (100)**

In above table 1 it explains that the small size respondent is using 22710 rupees in investment on human labour and its consists of 10.30 percentage of total cultivation and 2271 rupees in investment on owned and its consists of 1.52 percentage of total cost of cultivation and 28000 rupees in investment on Hired and its consists of 10.00 percentage of total cost of cultivation and 8000 rupees in investment on Tractor power and its consists of 6.95 percentage of total cost of cultivation and 1025 rupees in investment on owned and its consists of 6.41 percentage of total cost of cultivation and 7000 rupees in investment on Hired and its consists of 9.33 percentage of total cost of cultivation and 1000 rupees in investment on

Bullock labour and its consists of 3.61 percentage of total cost of cultivation and 1000 rupees in investment on Hired and its consists of 06 percentage of total cost of cultivation and 12210 rupees in investment on Seed and its consists of 2.18 percentage of cultivation and 7000 rupees in investment on Manures and its consists of 0.10 percentage of total cost of cultivation and 20100 rupees in investment on Fertilizers and its consists of 0.62 percentage of total cost of cultivation and500.11 rupees in investment on Plant protection chemicals and its consists of 5.75 percentage of total cost of cultivation and 6000.6 rupees in investment on Fuel wood and its consists of 2.35 percentage of total cost of cultivation and 200.10 rupees in investment on Transportation and its consists of 2.35 percentage of total cost of cultivation and 2000.05 rupees in investment Miscellaneous and its consists of 1.20 percentage of total cost of cultivation and 1040 rupees in investment on Interest on working capital and its consists of 1.22 percentage of total cost of cultivation and 250 rupees in investment on Land revenue and its consists of 0.20 percentage of cost of cultivation and 6.00 rupees investment on Tobacco board license and its consists of 0.06 percentage of total cost of cultivation and 400.10 rupees in investment on Depreciation and its consists of 0.22 percentage of total cost of cultivation and 21000 rupees in investment on Rental value of owned land and its consists of 0.80 percentage of total cost of cultivation and 1000.42 rupees in Interest on fixed capital and its consists of 0.80 percentage of total cost of cultivation.

The medium size respondents is using respondent is using 18520 rupees in investment on human labour and its consists of 9.25 percentage of total cultivation and 128.3 rupees in investment on owned and its consists of 2.60 percentage of total cost of cultivation and 21370.00 rupees in investment on Hired and its consists of 9.21 percentage of total cost of cultivation and 5244.00 rupees in investment on Tractor power and its consists of 6.99 percentage of total cost of cultivation and 850 rupees in investment on owned and its consists of 6.3 percentage of total cost of cultivation and 7000 rupees in investment on Hired and its consists of 8.72 percentage of total cost of cultivation and 500 rupees in investment on Bullock labour and its consists of 3.62 percentage of total cost of cultivation and 1512 rupees in investment on Hired and its consists of 6.02 percentage of total cost of cultivation and 4089.12 rupees in investment on Seed and its consists of 2.18 percentage of cultivation and 3020.00 rupees in investment on Manures and its consists of 0.10 percentage of total cost of cultivation and 9104.00 rupees in investment on Fertilizers and its consists of 0.64 percentage of total cost of cultivation and346.20 rupees in investment on Plant protection chemicals and its consists of 5.75 percentage of total cost of cultivation and 3948.4 rupees in investment on Fuel wood and its consists of 2.20 percentage of total cost of cultivation and 125.03 rupees in investment on Transportation and its consists of 0.01 percentage of total cost of cultivation and 1562.25 rupees in investment Miscellaneous and its consists of 1.17 percentage of total cost of cultivation and 1000 rupees in investment on Interest on working capital and its consists of 1.220 percentage of total cost of cultivation and 150 rupees in investment on Land revenue and its consists of 0.04 percentage of cost of cultivation and 4.50 rupees investment on Tobacco board license and its consists of 0.02 percentage of total cost of cultivation and 320.00 rupees in investment on Depreciation and its consists of 0.12 percentage of total cost of cultivation and 12020 rupees in investment on Rental value of owned land and its consists of 12.10 percentage of total cost of cultivation and 544.21 rupees in Interest on fixed capital and its consists of 0.15 percentage of total cost of cultivation.

The large size respondents is using 52830 rupees in investment on human labour and its consists of 6.10 percentage of total cultivation and 102.1 rupees in investment on owned and its consists of 1.95 percentage of total cost of cultivation and 3002.5 rupees in investment on Hired and its consists of 96.22 percentage of total cost of

cultivation and 2500.00 rupees in investment on Tractor power and its consists of 6.96 percentage of total cost of cultivation and 695 rupees in investment on owned and its consists of 6.27 percentage of total cost of cultivation and 1194 rupees in investment on Hired and its consists of 9.0 percentage of total cost of cultivation and 248.00 rupees in investment on Bullock labour and its consists of 3.63 percentage of total cost of cultivation and 1173.60 rupees in investment on Hired and its consists of 6.03 percentage of total cost of cultivation and 540.08 rupees in investment on Seed and its consists of 2.10 percentage of cultivation and 1000.00 rupees in investment on Manures and its consists of 0.10 percentage of total cost of cultivation and 4108.00 rupees in investment on Fertilizers and its consists of 0.65 percentage of total cost of cultivation and192.10 rupees in investment on Plant protection chemicals and its consists of 5.75 percentage of total cost of cultivation and 1896.00 rupees in investment on Fuel wood and its consists of 1.20 percentage of total cost of cultivation and 100.10 rupees in investment on Transportation and its consists of 0.02 percentage of total cost of cultivation and 1125.20 rupees in investment Miscellaneous and its consists of 1.13 percentage of total cost of cultivation and 950 rupees in investment on Interest on working capital and its consists of 1.220 percentage of total cost of cultivation and 100 rupees in investment on Land revenue and its consists of 0.00 percentage of cost of cultivation and 3.00 rupees investment on Tobacco board license and its consists of 0.06 percentage of total cost of cultivation and 105.11 rupees in investment on Depreciation and its consists of 0.11 percentage of total cost of cultivation and 17000 rupees in investment on Rental value of owned land and its consists of 0.04 percentage of total cost of cultivation and 423.24 rupees in Interest on fixed capital and its consists of 0.004 percentage of total cost of cultivation.

ANOVA :

Source	d. f.	S.S.	M.S.S.	F. Cal.	F. Tab. 5%	Result	S. Ed. (±)	C.D. at 5%
Size group	2	151071.77	75535.88	3.730399702	3.40	**S**	116.186	239.808
Particular	12	497527435.80	41460619.65	2047.565671	2.18	**S**	55.814	115.200
Error	24	485969.70	20248.74	-	-	-	-	-
TOTAL	38		-	-	-	-	-	-

In the above ANOVA table, in due to size group degrees of freedom is 2, sum of squares is 151071.77, mean sum of squares is 75535.88, F. Calculated value is 3.730399702, F. tabulated value @ 5% is 3.40, result is significant, standard deviation is 116.186 and critical difference @ 5% is 239.808. In due to particulars degrees of freedom is 12, sum of squares is 497527435.80, mean sum of squares is 41460619.65, F. Calculated value is 2047.565671, F. tabulated value is 2.18, result is significant, standard deviation is 55.814 and critical difference @ 5% is 115.200. In error degrees of freedom is 24, sum of squares is 485969 and mean sum of squares is 20248.74.

Cost of cultivation in Tobacco crop per hectare in different size of farm groups:

Below table explains about cost of cultivation in tobacco crop per hectare in different size of farm groups with cost A1 and cost A2 and cost B and cost C.

Table 2: Cost Concepts in FCV tobacco crop per hectare in different Size of Farms Group

Sl. No	Cost Concepts	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Cost A_1	52000.00	51381.10	50100.14	51160.41
2	Cost A_2	55043.00	50406.10	50000.14	51816.41
3	Cost B	55000.87	50900.74	50006.00	51969.20
4	Cost C	69500.40	68406.10	68000.02	68635.50

In above table 2 explains about return and output of small size Cost A_1 was highest in small size farms (Rs.52000.00/ha) followed by medium size farms (Rs.51381.10/ha) and lowest in large size farms (Rs. 50100.14/ha) respectively. Cost A_2 in small, medium and large size of farms groups was Rs. 55043.00/ha and Rs.50406.10/ha and Rs. 50000.14/ha respectively. Cost B was highest in small size farms (Rs.55000.887/ha) as compared to medium size farms (Rs.50900.74/ha) and lowest in large size of farms (Rs.50006.00/ha) respectively. Cost C was highest in small size farms (Rs.69500.40/ha), medium size farms (Rs. 68406.10/ha) and lowest in large size farms (Rs. 51969.20/ha). Sample average for Cost A_2, Cost B and Cost C was Rs.51816.41/ha, Rs.51969.20/ha and Rs.68635.50/ha in different size of farms group.

Cost and returns in Tobacco crop per hectare in different size of farm groups:

Below table explains about cost of cultivation per hectare, returns per hectare and hectare of main product and by product, gross return, net return, family labour, farm business income and benefit cost ratio.

Sl. No	Particulars	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Total Cost of cultivation	75004.02	65502.10	65400.40	68635.52
2	Yield in tones per hectare	20.95	21.90	22.08	21.35
3	Gross Returns per hectare in rupees	53200.00	54000.32	56000.10	54400.14
4	Net Returns per hectare	21400.00	25093.32	26000.10	24164.47
5	Cost of Production per quintal	28000.41	29029.00	29050.40	28359.81
6	Price Per quintal	3800.00	3934.00	3966.00	3900.00
7	Input-Output ratio	1:1.34	1:1.35	1:1.36	1:1.34

In above table 3 explains about small size respondents cost of production per ton 28000.41, yield of main product 20.95 tons, gross return is 53200.00 and net return in small size respondents is 21400.00 and input output ratio is 1:1.34. Medium size respondents cost of production per ton 29029.00, yield of main product 21.90 tons, gross return is 54000.32 and net return in medium size respondents is 25093.32 and input output ratio is 1:1.35 Large size respondents cost of production per ton 29050.40, gross return is 56000.10 and net return in large size respondents is 26000.10 and respondents and benefit cost ratio is 1:1.36. Average sample of small, medium and large size respondents are cost of production per ton 28359.81, yield of main product is 21.35 tons, gross return is 54400.14 and net return is 24164.47 and input output ratio is 1:1.34.

ANOVA :

Source	d. f.	S.S.	M.S.S.	F. Cal.	F. Tab. 5%	Result	S. Ed. (±)	C.D. at 5%
Size group	2	21999382.33	10999691.17	3.672061012	6.94	**NS**	1413.155	2916.751
Particular	2	18581146984.69	9290573492.35	3101.50096	6.94	**S**	1413.155	2916.751
Error	4	11982035.30	2995508.82	-	-	-	-	-
TOTAL	8		-	-	-	-	-	-

In the above Anova table, in due to size group degrees of freedom is 2, sum of squares is 21999382.33, mean sum of squares is 10999691.17, F. Calculated value is 3.672061012, F. tabulated value @ 5% is 6.94, result is not significant, standard deviation is 1413.155 and critical difference is @ 5% is 2916,75. In due to particulars, degrees of freedom is 2, sum of squares is 18581146984.69, mean sum of squares is 9290573492.35, F. Calculated value is 3101.50096, F. tabulated value @ 5% is 6.94,

result is significant, standard deviation is 1413.155 and critical difference is 2916.75. In error, degree of freedom is 4, sum of squares is 11982035.30 and mean sum of squares is 2995508.82.

CONCLUSION

The production of tobacco has increased largely due to productivity increase and increase in the area under the crop. The acreages under tobacco not influenced by improvement in the productivity but it largely depended on the other factors like rainfall and price of this crop. The cropping pattern was dominated by tobacco crop followed by Blackgram, sugarcane and paddy. Resource use structure in tobacco was found to be varied among the size groups. Production cost of tobacco was varied according to size groups of holding. The per hectare cost of cultivation of tobacco was the highest on small size farms and lowest on large size farm. Among which rental value of land, hired human labour, fertilizers, manures, seeds were the major items of cost. The cost of cultivation varied among the size groups of tobacco growers.

REFERENCES

Abdallah, J. M., Mbilinyi B., Ngaga Y. N., & Ok'ting'ati, A. (2007). Impact of flue-cured Virginia on Miombo woodland: A case of small-scale flue-cured Virginia production in Iringa region, Tanzania, *Discovery and Innovation*, *19*(1-2), 92-106.

Chandrakant, B. K., Patil, R. S., & Prasad, S. B. (1980). Production of Flue-cured Virginia tobacco in Karnataka: An econometric approach. *Indian Journal of Agricultural Economics*. *28*(2), 135-137.

CTRI- Rajahmundry, (2016). http://www.ctri. org.

Singh, A. N., Kori, S., & Pankar, S. N. (1980). The production, marketing and Manufacture of Tobacco and Tobacco products in Karnataka, *Indian Tobacco Journal*, *12*(2), 3-15.

Narasimha Rao, C. V., & Chakraborty, M. K. (1982). Tobacco cultivation, improvement and utilization of tobacco waste for production of nicotine. In cultivation and utilization of medicinal plants. (eds Atal, C. K., & Kapur, B. M.), RRL, Jammu pp 669-679.

Patel, J. A., Patel, B. K., & Chakraborty, M. K. (1998). Production potential and quality aspects of tobacco seed oil. *Tobacco Res*. *24*, 44-49.

Ramanna, R., Krishnamurthy, A. N., & Shankaramurthy, H. G. (1979). An Economic analysis of Problems of Production and Marketing of FCV tobacco in the transitional belt of Karnataka, University of Agricultural Sciences, Bangaloe (Mimeograph).

Tobacco Board http://www.Tobacco Board. com accessed on 05 May 2017.