

An Economic Analysis of Sorghum to Estimate Marketing Channels, Marketing Cost, Marketing Margin and Price Spread in Each Channel of Distribution in Kurnool District of Andhra Pradesh

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ABSTRACT

The study is on marketing cost, marketing margin and price spread in each channel of distribution of Sorghum in Kurnool district of Andhra Pradesh. The study was carried out in both conventional and functional analyses were employed to analyze the data and to arrive at valid conclusions. The data was collected using well structured questionnaire from three different marketing channels.

Channel I: Producer → Consumer

Channel II: Producer → Village merchant/Retailer → Consumer

Channel III: Producer → Commission agent → Wholesaler → Consumer

Finally the data is analyzed using a tabulation method along with a statistical tool.

Keywords: Sorghum, Marketing cost, Marketing margin, Price spread.

INTRODUCTION

Sorghum (*Sorghum bicolor*), being a tropical crop as its history related to the hot and humid areas of the world. The cereal grain is said to have originated around the Ethiopia as a wild grass as early as 8000 years ago. The cereal crop, once adopted and cultivated, spread across the African continent especially the regions of Egypt and Sudan. Sorghum marked its entry to the Asian continent in the first millennium. The weather conditions in the

continent suited for the plantation. It is found in the arid and semi arid parts of the employment world due to its feature of being extremely drought tolerant. Sorghum is suitable to tropical as well as temperate climates, although it is best known for its good adoption to the drought prone semi-arid tropical (SAT) regions of the world.

Sorghum, (*sorghumbicolor*) is an annual or perennial grass in the family poaceae grown primarily for its grain.

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Sorghum has an erect solid stem with one or more tillers (additionally suit that grows subsequent to the parent suit) and curving leaves which are arranged alternately on the stems and are lance – like in shape, measuring 30 - 135cm (12-53) in length. The inflorescence of the plant consists of racemes of spikelets arranged on branches at the head of the plant. The spikelets are paired and have two florets. When the plant flowers, yellow anthers begin to appear on the head. Sorghum is usually grown as an annual, harvested after one growing season and can grow to a height of 4m (13ft). Sorghum may also be referred to as broom corn in Ethiopia. Sorghum is also called as great millet, Indian millet, milo, durra, orshallu, cereal grain plant of the grass family and its edible starchy seeds. In India sorghum is known as jowar, cholam, or jonna. in West Africa as Guinea corn, and in China as Kaoliang. Hence jowar is commonly called as great millet belonging to Graminae and 5th most important crop sorghum is gaining importance because of their benefits to health use to reduce sugar levels for diabetic patients.

MATERIALS AND METHODS

The study was conducted in Kurnool district of Andhra Pradesh which is one of the 13 districts of A.P. Kurnool district comprising 54 blocks among 1 block was selected. i.e., Banaganapalli and kovelakuntla block was selected for the study. A list of 4 villages were

selected randomly out of them. A list of all Sorghum farmers/respondents is prepared with the help of head of the villages pradhan or head of each selected villages in the both block, there after farmers/respondents is categorized into categories 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 all 100 farmers randomly i.e., 50 marginal farmers, 35 small farmers, 15 medium farmers. Tabulation method is used for analysis of data along with required statistical tools for the interpretation of the results.

RESULTS AND DISCUSSION

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

To work out price spread, marketing cost, marketing margin in different existing marketing channels.

Marketing cost

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follow:

$$C=C_f+C_{m1}+C_{m2}+C_{m3}+.....+C_{mn}$$

Where,

C= Total cost of marketing

C_f= Cost borne by the producer farmer from the produce leaves the farm till the sale of the produce, and

C_{mn}= Cost incurred by the ith middlemen in the process of buying and selling.

Marketing margin

This referred to the net share to the different marketing intermediaries for particular

quantity of produce after deducting marketing costs from gross marketing margins at each stage of handling the commodity.

$$\text{Absolute margin} = PR_i - (P_{pi} + C_{mi})$$

$$\text{Percent margin} = \frac{P_{pi} + C_{mi}}{Pr_j}$$

Where,

PR_i = Sale price of the middleman

P_{pi} = Purchase price of the middleman

C_{mi} = Marketing cost Incurred by the middleman

Producer's share in Consumer's Rupee

$$Ps = \frac{Pf}{Pc} \times 100$$

Where,

PS = Producer's share in Consumer's Rupee
 PF = Price of the produce received by the farmer
 PC = price of the produce paid by the consumer

Price spread

It was calculated by taking difference between the price paid by the consumer and the price received by the producer.

$$\text{Price Spread} = \text{Total Marketing Cost} + \text{Total Marketing Margin}$$

Marketing channels

Channel I: Producer → Consumer

Channel II: Producer → Village merchant/Retailer → Consumer

Channel III: Producer → Commission agent → Wholesaler → Consumer

Table 1: Comparison of total marketing cost, total marketing margin, price spread, producer share in consumer rupee (%) and marketing efficiency in three different channels.

Value (Rs/quintal)

S. No.	Particulars	CHANNEL-1	CHANNEL-2	CHANNEL-3
1	Producer sale price	2550	2550	2550
2	Cost incurred by the producer			
	Packing cost	5 (0.16)	5 (0.13)	5 (0.13)
	Packing material cost	7.5 (0.24)	7.5 (0.20)	7.5 (0.19)
	Transportation cost	20 (0.65)	20 (0.55)	20 (0.53)
	Market cost	8 (0.26)	8 (0.22)	8 (0.21)
	Labour cost	5 (0.16)	5 (0.14)	5 (0.13)
	Loading and unloading charges	10 (0.32)	10 (0.27)	10 (0.26)
	Weighing charges	5 (0.16)	5 (0.13)	5 (0.13)
	Miscellaneous charges	3 (0.09)	3 (0.08)	3 (0.08)
	Total cost	63.5 (2.05)	63.5 (1.73)	63.5 (1.69)
3	Net price received by producer	2486.5 (80.21)	2486.5 (67.94)	2486.5 (65.99)
4	Sale price of producer to commission agent	3100 (100)	3100 (84.70)	3100 (82.27)
5	Cost incurred by the commission agent			
	Loading and unloading charges	10(0.32)	10(0.27)	10 (0.26)
	Packing cost	5(0.16)	15(0.13)	5 (0.13)
	Market fee	8(0.26)	8(0.22)	8 (0.21)
	Commission of trader	–	–	–
	Losses & Miscellaneous charges	3(0.39)	5(0.13)	5(0.13)
	Total cost(i-v)	63.5 (2.05)	60 (1.64)	58 (1.54)
6	Margin of commission agent	–	–	–
7	Sale price of commission agent to wholesaler	3100(100)	3100(84.7)	3768(100)
8	Cost incurred by wholesaler			
	Weighing charges	5(0.16)	5(0.13)	5(0.13)
	Loading and unloading charges	10(0.32)	10(0.27)	10(0.26)
	Town charges	–	25(0.68)	25(0.66)
	Carriage up to shop	–	15(0.41)	15(0.40)
	Miscellaneous charges	8(0.26)	5(0.13)	5(0.13)
	Total cost	20(0.65)	60(1.64)	60(1.59)
9	Wholesalers Margin	–	–	–
10	Sale price of wholesaler to consumer	–	3660(100)	3768(100)
11	Price spread	550(17.74)	1110(30.33)	1218(32.32)
12	Consumer paid price	6365	3660	3768
13	Producer share in consumer rupee	80.21	61.94	65.99
14	Marketing Efficiency (in %)	4.52	2.24	2.04

Table 2: Comparison of total marketing cost, total marketing margin, price spread, producer's share in consumer rupee (%) and marketing efficiency in three different channels among chickpea growers with different size of farm

S. No.	Particulars	Channel – I	Channel – II	Channel – III
1	Total marketing cost	63.5	123.5	121.5
2	Total marketing margin	550	1050	1550
3	Price spread	550	1110	1218
4	Producers share in consumer rupee (%)	80.21	67.94	65.99
5	Marketing efficiency	4.52	2.24	2.04

From the above table it revealed that the through channel-I, the total marketing cost was Rs.63.5/q, total marketing margin Rs.550/q, price spread rs.680/q, producers share in consumer rupee (%) was 89.54 with a marketing efficiency 9.55. Through channel – II, the total marketing cost was Rs.123.5/q, total marketing margin Rs.1050/q, price spread

rs.1240/q, producer's share in consumer rupee (%) was 82.44 with a marketing efficiency 5.69. Through channel – III, the total marketing cost was Rs.121.5/q, total marketing margin Rs.1550/q, price spread rs.1550/q, and producer's share in consumer rupee (%) was 79.18 with a marketing efficiency 4.08.

Table 3: ANOVA for marketing cost, marketing margin, price spread, producer's share in consumer rupee (%) and marketing efficiency among sorghum farmers with different size of farm

Source	D f	Sum of squares	Mean sum of squares	F _{cal}	F _{tab} 5%	Result	S. Ed. (±)	C. D. 5%
Size group	2	35813728.84	62956314.42	4.10	5.88	NS	329.253	827.54
Particular	4	1598377875.72	215893775.72	3.59	4.46	NS	380.273	645.257
Error	8	55624902.17	59779357.82					
TOTAL	14							

From table 3, it can be evident that the size of the group was 2 with the degrees of freedom, particulars was 4 with an error value of 8, accounting to a total of 14. The sum of squares of the group size was 35813728.84 which has mean sum of squares 62956314.42. The F_{cal} was 4.10 whereas F_{tab}, at 5% level of significance was 5.88, it revealed that F_{cal} was lesser than F_{tab} and depicts that it was non-significant with Standard deviation value of 329.253 and Critical Difference at 5% was 827.54. The particulars had sum of the squares as 1598377875.72, with mean value of 215893775.72. The F_{cal} was 3.59 whereas F_{tab}, at 5% level of significance was 4.46, it revealed that F_{cal} was lesser than F_{tab} and depicts that it was non-significant with Standard deviation value of 380.273 and

Critical Difference at 5% 645.257.

CONCLUSION

- ❖ cropping pattern on sample farms shows that on an average in season sorghum occupied highest area 64.20 percent followed by sorghum.
- ❖ In respect of market efficiency, channel I was found most efficient over channel II and channel III, because there is no anyone middlemen engaged in this marketing channel. The marketing efficiency decreased with increase in the number of intermediaries.
- ❖ The village trader are the main market functionaries for purchasing sorghum from the farmers in the study.

REFERENCES

- Aswin, P., & Amnendy, Mudhopadhyay (1983). Costs and profitabilities of wheat and its competing crops, in West Bengal. *Agric. Situ. India* 17(10), 629-63.
- Baba, M. D., Sanchi, I. D., Dabai, S., & Sabo, A. Y. (2014). Evaluation of Sorghum Marketing in Danko- Wasagu Local Government Area of Kebbi State, Nigeria. *Researcher*, 6(9), 3842. <http://www.sciencepub.net/researcher>.
- Bansode, R. M. (2002). Economics of production and marketing of jowar in Latur district M.Sc. (Agri.) thesis, Submitted to Mahatma Phule Krishi Vidyapeeth, Rahuri, 102 p.
- Basvaraja, H. (2000). Kharif sorghum in Kamatakagnc. *Econ. Res. Rev.*, 18(2), 223-240.
- Birari, K. S., & Nawadkar, D. S. (1999). Changes in resource use structure on farm of Western Maharashtra. A report of research work done on Agricultural Economics and Statistics, during 1998-99 at Mahatma Phule Krishi Vidyapeeth Project, 12, 109-118.
- Brahmprakash, D. K., & Sharma & Khare, A. P. (2001). Effect of seasonality in market arrival and price of wheat in Uttar Pradesh. *Indian J. Agric. Mktg.*, 15(2), 68-74.
- Chapke, R. R., Biswajit, M., & Mishra, J. S. (2011). Resource-use Efficiency of Sorghum (Sorghum bicolor) Production in Rice (Oryza sativa) - fallows in Andhra Pradesh, *Indian Journal of Human Ecology.*, 34(2), 87-90. 54.
- Chapke, R. R., Sujay, R., Mishra, J. S., & Pat, U. J. V. (2011). Factor Associated with Sorghum Cultivation under Rice Fallows., *Indian Res. J Ext. Edu.* 11 (3), pp: 67-71.
- DayakarRao B.,V. ThirumalValvan & HymaJyothi, S. (2005). Economics of sorghum cultivation fallows in paddy in Guntur district of Andhra Pradesh. *Agric. Situ. India*, 61(12), 885-888.
- Deole, C. D., Deshpande, S. C., & Nighat, M. N. (1970). A note on the Economics of Hybrid jowar cultivation in Parbhani district, College of Agriculture, *Mag.* 7, pp. 95-96.
- Dwarkinath, R., & Sethnrao, M. K. (1970). Barriers to change as expressed by adopters in relation to high yielding varieties Mysore. *Agric. Sci.* 4, 451-459.