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An empirical study on Market analysis of guar (*Cyamopsis tetragonolobus*) in Hisar district of Haryana

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Abstract

Guar plant is a rough to touch, bushy plant that has the ability to dwell even in the drought like conditions. India produces 6 lakh tons of guar annually i.e. the maximum level of production in the world. It contributes to around 80% share in the world's total production. The major producing regions of this crop in India are Rajasthan, Gujarat, Haryana, Punjab, Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Maharashtra, Karnataka and Andhra Pradesh. Rajasthan can be termed as the largest guar producing state in the world as it dominates the Indian production scenario contributing to around 420000 tons of this crop i.e. over 70% of the total production in India. With this background the present study is aimed at achieving the following specific objectives to study the area and production of Guar in Haryana, to identify the various channels involved in the marketing of Guar and to estimate the cost and margin born by various intermediaries in different distribution channels. The list of guar producers was obtained from the AICRP on Arid Legume Centre working under forage section of CCS HAU, Hisar. The study was conducted by selecting 60 respondents regarding cost and margin, distribution channels in which they are disposing the output with the help of questionnaires. The respondents were randomly selected at producer, wholesalers, processors, retailers and consumers level. They major problems can be located in farmers level during production and marketing, industry level during warehousing and transportation and also in authority level regarding poor dissemination of market intelligence to the farmers and lack of effective extension activities to improve seed replacement rates, to inform about certified seeds etc. Poor handling, transportation and lack of cold storage create wastage of the product.

Keywords: Guar, distribution channels and replacement rates, Marketing cost, Marketing Margin,

Introduction:

Cluster bean, popularly known as Guar (*Cyamopsis tetragonolobus*) is an annual legume crop that provides with a natural source of hydrocolloid (substance that forms thick solutions at low concentrations with water). Guar plant is a rough to touch, bushy plant that has the ability to dwell even in the drought like conditions (**Taneja, K. D., Bishnoi, O. P., Row, V. U. M., & Ram, N. 1995)**. This small, purple flowered, pointed leaved plant ranges from 2-9 feet in height. It is consumed as a bean, livestock feed and also in the form of manure in the fields. The seeds of the guar plant have three parts i.e. the germ, the endosperm and the husk. The popular guar gum, which used in mining, petroleum drilling and textile manufacturing sectors, is obtained from the endosperm of the seed of the plant. The world's total production of guar figures around 7.5 to 10 lakh tons of guar every year (**Bhadoria, R. B. S., Chauhan, D. V. S., & Bhadoria, H. S. 1996)**. The production list of guar is dominated by India as a leading producer of this crop. The consumption pattern of guar seeds is largely influenced by the demands from the petroleum industry of United States of America and the oil fields in the Middle East as the derivative products of these seeds are quite useful in the petroleum drilling industries. India produces 6 lakh tons of guar annually i.e. the maximum level of production in the world. It contributes to around 80% share in the world's total production) (**Ali, M.1982)**. The major producing regions of this crop in India are Rajasthan, Gujarat, Haryana, Punjab, Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Maharashtra, Karnataka and Andhra Pradesh. Rajasthan can be termed as the largest guar producing state in the world as it dominates the Indian production scenario contributing to around 420000 tons of this crop i.e. over 70% of the total production in India. Haryana and Gujarat place themselves at the second and third positions regarding the production in India with 12% and 11% respectively (**Bains, D. S., & Dhillon, A. S. 1977**. India has been a dominant player in the context of guar and guar gum in the world market. The Arab traders introduced the crop in India and the place responded well to the crop's cause. It has been the major producer of guar seeds in the world. India's production contributes to 80% of the world's total production figuring up to 6 lakh tons. Rajasthan wholly retains the credit for India's position producing 70% of the production itself. But it has been observed that there is a lack of stability in India's performance due to the fluctuations in the rainfall level in the country (**Taneja, K. D., Bishnoi, O. P., Row, V. U. M., & Ram, N. 1995)**. Guar is largely consumed as a vegetable in the Indian subcontinent. It is also used in making pickles. 25000 tons of the total production in the country constitutes to the domestic market. Guar gum has a vast range of industrial applications and the major share of demand comes from various industrial sectors only. India is the leading net exporter of guar seeds and guar gum.
The present study has investigated the Market analysis of guar in Hisar district of Haryana with the following objectives were analyzed through this study:

- To study the area and production of Guar in Haryana
- To identify the various channels involved in the marketing of Guar
- To estimate the cost and margin born by various intermediaries in different distribution channels

Materials and Methods:

The present study includes only Hisar district. Hisar district is an emerging district in Guar cultivation. There are 36 organized markets in Hisar alone, which traded the guar and its derivatives.Multistage sampling was adopted for conducting the study. Hisar district is purposively selected, from which 3 blocks (namely, Hisar Block I, Hisar Block II and Adampur) were selected based on highest producing blocks in Hisar district on the basis of information

provided by Department of Agriculture, Haryana. From these blocks, villages are selected. Three villages were selected from Hisar Block I and Hisar Block II each. Two villages are selected from Adampur block. Five farmer producers were conveniently selected from each village. Five respondents each of Pre-harvest contractors, wholesalers, retailers and consumers were also conveniently selected for information regarding cost and margins. Both Primary and Secondary data was collect for undertaking the Study. Primary data was collected from the 60 respondents regarding cost and margin, distribution channels in which they are disposing the output with the help of questionnaires. The respondents were randomly selected at producer, wholesalers, processors, retailers and consumers level. The list of guar producers was obtain from the AICRP on Arid Legume Centre working under forage section of CCS HAU, Hisar. Secondary data was collect from the Forage section of CCS HAU, Hisar under All India Coordinated Project on Arid Legume coordinating unit with HQs at CAZRI, Jodhpur regarding area and production of guar in Hisar district.

Marketing Cost and Marketing Margin

To calculate the marketing cost and margin in different marketing channel, "mode method" was used. The averages or model prices at different points in the marketing channels are compared to get gross margin. Gross margin are deducted from marketing cost incurred by different intermediaries to get the net margin

Result and Discussion:

Objective 1: AREA AND PRODUCTION OF GUAR IN HARYANA

The production of guar shows a decreasing trend in Haryana state over years in terms of area under the crop and the total production. There has been a recognized increase of production of guar till 2008-09. After that there has been a sharp shift in area under the cropas shown in figure. It has shifted in favor of those crops, which provide higher returns due to increasing productivity, or increasing prices or both i.e. rice, wheat, rapeseed-mustard and American cotton. The decreased return to the farmers in the marketing of guar is indicated by the increased cost of production and higher retention of margin by the marketing intermediaries. It gives lower incentive to the farmers. Inefficient marketing channel is also contributed to the lower production in the region. If market channels are efficient, they will induce farmers to become more commercialized. Access to efficient markets serves as an incentive for farmers to specialize in the production of this crop, which is comparatively most advantageous for the region, and a more efficient interregional trade within a country will accelerate aggregate production.

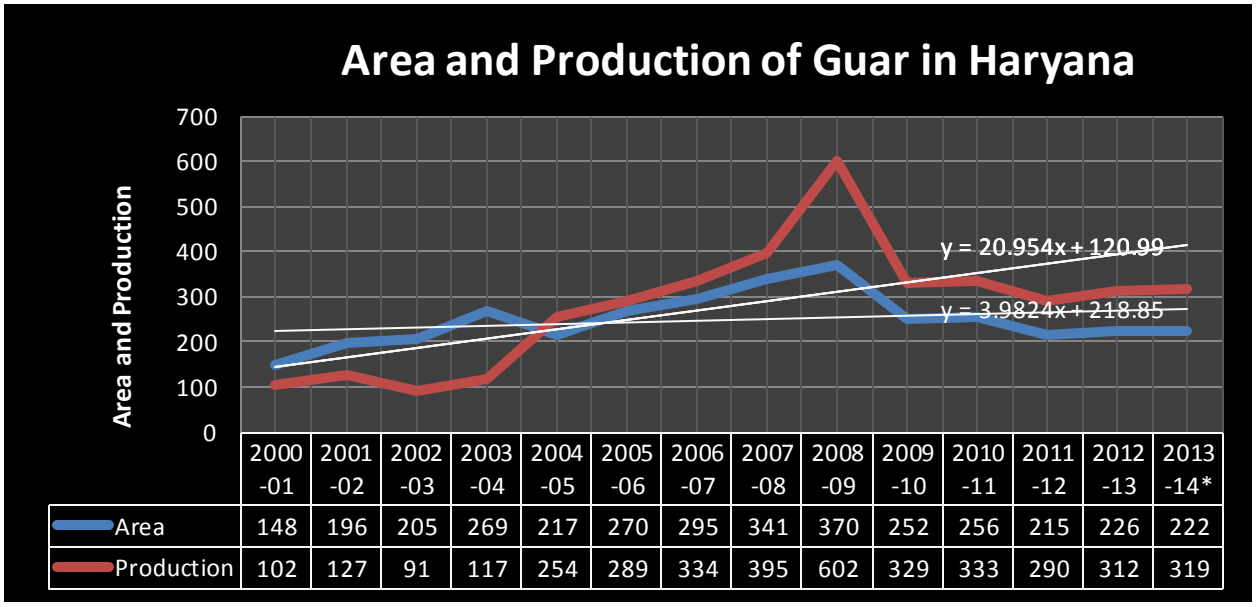

Figure 1. Area and production of guar in Haryana

SEASONALITY OF GUAR PRODUCTION IN HISAR DISTRICT

A growing season of guar is 14 to 16 weeks and requires reasonably warm weather and moderate flashing rainfall with plenty of sunshine. Too much rain can cause the plant to become more 'leafy' resulting thereby reducing the number of pods or the number of seeds per pod which affects the size and yield of seeds. The crop is generally sown after the monsoon rainfall in the second half of July to early August and is harvested in late October early November. The Guar is a naturally rain fed crop. Depending on the monsoon rainfall the total size of Guar crop varies from year to year. After harvesting, when the pods become dry through sunlight, they are beaten off and during this process, the seeds come out of the pods. The seed is normally sown during the second half of July to August after the monsoon rainfall starts, and harvested during October and November. The crop requires 3-4 spells of rain during seed setting and maturing, which is during September first week and the end of September.

State	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Haryana												

Table 1: Seasonality of Guar production in Hisar District

Sowing Season Growth Season Harvesting Season

Objective 2: CHANNELS INVOLVED IN THE MARKETING OF GUAR

There are mainly four channels of distribution in the marketing of Guar in the selected areas. Farmer producers are directly or indirectly dispose their produces to the ultimate consumers. As a product meant for processing, processing industries are prevalent in these marketing channels. The Guar supply chain in the study area as given below:

1. Producer → Consumer
2. Producer → Wholesaler → Retailer → Consumer
3. Producer → Wholesaler → Miller/Processors → Retailer → Consumer
4. Producer → Processor → Retailer → Consumer

In the first channel, producer sells their produce directly to the consumer in *mandi*. In this channel, price realization by farmers is highest of all channels. Second channel start from producer and forward through wholesaler cum commission agent, retailer and consumer. Here the farmers sell their produces in bulk to wholesalers at commission basis at *mandi*. From which the retailer makes bulk purchase, which is meant for retail trading of the same by the retailer to the farmers. In this channel, price realization by the farmer is slightly less as compared to other channels because of large number of intermediaries, higher span of supply chain and higher margins retained by the players involved in it. Third channel involves millers/ processors in between wholesaler and retailer. They create form utility to the produces. This is done by converting the guar in to guar gum and splits. This is the more inefficient channel because of increased conversion and related cost during value addition along with long span of supply chain. In fourth channel, the processors procure the quality produces from the farm directly and undertake the conversion process. It is then procured by retailers for final supply of the same to the consumers.

Objective 3: To estimate the cost and margin born by various intermediaries in different distribution channels:

Among the four marketing channels, the net margin received by the producer is high in first and fourth channels followed by second and third channels. In first channel, the farmers margin is high because lack of middlemen in between him and the ultimate consumers. In this channel, the whole cost is bear by the farmer producer only. He fixes his price such a way that his cost of production, related costs in marketing and certain percentage of his margin should be covered. In

fourth channel, the producer's margin is same to that of first channel. It is because of no additional charges are committed by the producer over and above the cost committed by him in first channel and the processors directly procure from the producers or the processors bear the additional cost if any, in favour of the producers. At the same time, the processors procure the quality products at a higher rate from the producers. In second and third channel, the farmer's margin is less than first and fourth channel because of high involvement of marketing intermediaries in these channels. Hence the farmers are forced to sell at a lower rate to the succeeding marketing intermediaries. It is evidenced from the table that in second and third channel, the farmer sells his produces at Rs.42 per Kg compared to Rs.50 in first and fourth channels.

Table 2: Cost and margin in the marketing of Guar in selected areas of Hisar district

Sl no.	Particulars	Channel I	Channel II	Channel III	Channel IV
1.	**Producer**				
	Cost of production	2.25	2.25	2.25	2.25
	Picking and packing	0.75	0.75	0.75	0.75
	Transportation, Loading and unloading	2.00	2.00	2.00	2.00
	Farmers total cost	5.00	5.00	5.00	5.00
	Producers' price	50.00	42.00	42.00	50
	Farmers margin	45.00	37.00	37.00	45.00
2.	**Wholesaler**				
	Purchasing price	0	42.00	42.00	0
	Loading/unloading (2%)	0	0.84	0.84	0
	Losses (@ 1%)		0.42	0.42	0
	Miscellaneous charges	0	2.5	2.5	0
	Total cost born by the wholesaler	0	45.76	45.76	0
	Selling price to retailer	0	47.00	47.00	0
	Wholesalers margin	0	1.24	1.24	0
3.	**Miller/ processor**				
	Purchasing price	0	0	47	50
	Loading/unloading (2%)	0	0	0.94	0.94
	Labour charge and processing cost	0	0	3.00	3.00
	Packaging and labeling	0	0	0.75	0.75
	Losses	0	0	0.47	0.20
	Miscellaneous charges (Rent+electricity+storage+ Depreciation+maintenance+ Advertisement)	0	0	3.25	2.75
	Total cost born by miller/processor	0	0	55.41	57.64
	Selling price	0	0	56	58
	Processors margin	0	0	0.59	0.36
4.	**Retailer**				
	Purchase price of retailer	0	47	56	58
	Transportation	0	2.5	0.50	0.50
	Losses (@3%)	0	1.14	0	0
	Rent and miscellaneous	0	0.94	1.25	1.25
	Cost born by retailer	0	51.85	57.75	59.75
	Selling price to consumer	0	57.00	58.00	59.50
	Retailers margin	0	5.15	0.25	0.25
5.	**Consumer**				
	Consumer purchase price	50.00	57.00	58.00	59.50

Conclusions and recommendations

Conclusions

There are enormous numbers of problems faced by guar industry now a day in our country. They major problems can be located in farmers level during production and marketing, industry level during warehousing and transportation and also in authority level regarding poor dissemination of market intelligence to the farmers and lack of effective extension activities to improve seed replacement rates, to inform about certified seeds etc. Poor handling, transportation and lack of cold storage create wastage of the product. Dependence of the consumers upon the marketing channel having higher intermediaries leads to low proportion of percentage of consumer rupee to the farmers. It will not provide incentive to the farmers to produce more of quality guar. The higher marketing cost and marketing margins in such lengthy marketing channel creates inefficiency of the marketing channels. Present study is an attempt to analyses there are mainly four marketing channels in the region for the marketing of Guar. In which, "Producer-Wholesaler-Retailer-Consumer" channel is highly dominant through which 47 per cent of the guar products are traded. But in this channel, marketing efficiency is low due to large number of intermediaries and high marketing cost and margin. The direct channel is efficient, but the frequency of trade through this channel is low.

Recommendations

Haryana state made success in improving productivity and the current productivity level in Haryana is about 11.0 qt/ha. Therefore, continuous research and extension work needs to be in place for increasing Guar seed production and productivity in the state. Total guar seed production in Haryana have increased to about 35 lakh qt presently from a level of 5-7 lakh qt. Variety development according to market demand is poor and guar production technology and research extension is not fully reaching upto the farmers' level. Therefore, the extension system should be strengthened in the state. High gum content and high viscosity varieties (like HG 365), more area under cultivation of high-yielding short-duration varieties, Improve seed replacement rate, Warehousing in rural areas, Cleaning & grading units in market yards. Promote direct marketing and contract farming, Ensure daily market info dissemination. Popularize use of commodity futures for price risk management, Since Guar crop is highly dependent on monsoon rainfall, and if production fails there is no risk cover for farmers. Therefore, crop insurance product in guar seed should be developed and farmers' guar crop should be insured. Many of the guar processing industries are small and does not have technical manpower/ skilled labour, and operate under unhygienic conditions. There is urgent need of capacity building of manpower working with guar processing industries in all respect including food safety and quality aspects.

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