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## Disposal pattern of Bajra (Perl Millet) adopted by the farmers in District Auraiya of Uttar Pradesh

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### Abstract

Bajra is the sixth most important cereal crop after the wheat, rice, maize, barley and sorghum in the world as one of the millet crops. Bajra is introduced from Africa to India and stands fourth in area after wheat, rice and sorghum. Area, production and productivity of the Bajra crop in the world was 28.03 Mha, 21.85 Mt. and 780 kg/ha, respectively (FAOSTAT, 2018). Different techniques used and methods adopted in this study are described and the methodology of the present study has been discussed under Sampling technique, Method of enquiry, collection of data, Period of enquiry and Methods and techniques of analysis. The market functionaries engaged in the marketing of Bajra in Auraiya district was Village traders, wholesalers/commission agents and retailers. Therefore, a list of all market functionaries involved in the marketing channels have been prepared and then sample of 10 per cent of all the market functionaries have been randomly selected for the study of marketing aspects. Model price was used for the study. Average cost of cultivation on Bajra large size group of farms Rs. 48738.30 followed by small size group of farm Rs.45322.10 and marginal size group of farms Rs. 39296.33 per hectare on Bajra cultivation. Maximum net income of Rs. 19109.70 per hectare was obtained through large size group of farms followed by Rs.18983.40 per hectare by small size group of farms and lowest net income of Rs.18141.17 per hectare was received by marginal size group of farms on the sample farms in channel I there are no intermediaries Producer to consumers in channel-II there are two intermediaries like wholesaler and retailer involved. Wholesaler's net margin Rs.150 per quintal and retailer's net margin Rs.150 per quintal marketing of Bajra. In channel-III there are two intermediaries i.e. The wholesaler and processors involved. Wholesaler's net margin Rs.150 per quintal and processor net margin 200.00 and retailer net margin 223.80 per QTL. Highest producer's share in consumer's rupee 80.46 per cent was obtained through channel II followed by 64.05 per cent by channel-III in marketing channel of Bajra during the study period. it was found that that the cost of cultivation per farm over all the households i.e., marginal, small and large was increasing respectively, in the marketing problems it was found that the price spread was maximum over the channel second as compared to the channel third.

**Keywords:** Functionaries, households, intermediaries, marketing channels

### Introduction

Bajra (Pearl millet) has various names such as cattail or spiked millet in English. It is known as 'Kambu' in Tamil Nadu, 'Dhukun in Arabic and 'Chandelles' in Africa. Pearl millet accounts for almost half of global millet production. The origin of Bajra has been traced to tropical Africa. Cultivation subsequently spread to East and Southern Africa and Southern Asia. It is the most widely grown type of millet, under the millet group. Pearl millet has a number of advantages that have made it the traditional staple cereal crop in subsistence or low resource agriculture in hot semiarid regions like the West Africa Sahel and Rajasthan in North Western India. Bajra is the sixth most important cereal crop after the wheat, rice, maize, barley and sorghum in the world as one of the millet crops. Bajra is introduced from Africa to India and stands fourth in area after wheat, rice and sorghum. Area, production and productivity of the Bajra crop in the world was 28.03 mha, 21.85 mt and 780 kg/ha, respectively (FAOSTAT, 2018). Largest Bajra producing countries in the world are India followed by Nigeria, Niger, Sudan and Mali etc. India, contributes 21.85 % per cent in total area, and 42.56 % percent of the total production of Bajra in the world. Uttar Pradesh state is second largest with respect of area and production under Bajra crop in India.

Area, production and productivity of the Bajra crop in Uttar Pradesh was 0.93 mha, 1.80 mt and 1941 kg/ha, respectively (Directorate of Economics and Statistics, DAC & FW, 2019). The Bajra crop is grown in Uttar Pradesh where region receives scanty rainfall which is having unpredictable and extremely variable in which Bajra is grown extensively as a staple food crop which has ability to withstand the adverse conditions. Uttar Pradesh contributes 12.6% per cent of total area, and 19.7 percent of the total production of Bajra in the country. The crop grows well in the western parts of the state with Agra, Badayun, Aligarh, Mathura, Moradabad, Bulandshahar, Manipuri, Etah, Etawah, and Farrukhabad districts as important producers. Here we discussed Marketing channels and the chain of intermediaries through whom the various food grains pass from producers to consumers constitutes their marketing channels.

### Research Methodology

Marketing channel is the structure of intra-company agents and dealers, wholesaler and retailer through which the commodity, product or service is marketed. It is path over which the commodity is passed as it moved from the producer into the hands of the consumer. Marketable surplus is the residual left with the producer-farmer after meeting his requirements for family consumption, farm needs for seeds and feed for cattle, payment to labour in kind, payments to artisans-carpenter, blacksmith, potter and mechanic-payment to landlord as rent, and social and religious payments in kind. This may be expressed as follows: Marketed surplus is that quantity of the produce which the producer-farmer actually sells in the market, irrespective of his requirements for family consumption, farm needs and other payments.

$$MS = P - C$$

Where, MS = Marketable Surplus, P = Total Production, C = Total Requirements.

**Marketing costs, margins and price-spread:** Marketing cost involved in the marketing of sugarcane was studied with the help of following relation:

$$TCM = CPGG + \sum_{i=1}^n CIM$$

Where, TCM= Total cost of marketing, CPSG= Cost paid by the Bajra growers, CIM = Cost incurred by  $i^{\text{th}}$  middle man.

**Marketing margins:** Calculated with the help of following formulae, Sale price - (Purchase price + cost). Producer's share in consumer's rupee Price received by producer / Price paid by consumer X 100 and Marketing efficiency  $\{E=(V/I+1)\}$ .

**Selection of Market:** The main market functionaries engaged in the marketing of Auraiya Village traders, wholesalers/commission agents and retailers. Therefore, a list of all market functionaries involved in the marketing channels have been prepared and then sample of 10 per cent of all the market functionaries have been randomly selected for the study of marketing aspects. Model price was used for the study.

### Results and Discussion

Marketing channels, Marketable surplus, Market Structure, Marketing functionaries, Price spread and marketing margins.

**Marketing of Bajra crop:** This selection deals with the analysis of marketing of Bajra crop in the study area. It includes study on marketable surplus, marketing channels,

market functionaries, price spread, marketing cost, market margins etc. it has been presented as follows.

**Marketable surplus:** Before studying marketing of Bajra the marketable surplus of the crop available with the sample respondents was worked out.

**Table 1:** Marketable surplus in different size groups

S. No.	Particular	Size groups			
		Marginal	Small	Large	Total
1	Area under Bajra crop in (ha)	9.37	22.25	24.00	55.62
2	Total Production (Qt)	241.37	640.35	729.36	1611.08
3	Quantity Retained for House hold need (Qt)	28.11 (11.65)	56.62 (8.84)	48.00 (6.58)	132.73 (8.24)
4	Marketable Surplus (Qt)	213.26 (88.35)	583.73 (91.16)	681.36 (93.42)	1478.35 (91.76)

Figures in parenthesis denote percentage to their respective total

It is evident from table I that the average marketable surplus available with the farmers was 91.76 per cent which was highest being 93.42 per cent with the farmers of the large size group. It was due to fact that these farmers sold their major produce in the market while marginal and small farmers comparatively retained more quantity for their family consumption.

**Market structure:** Market structure for any commodity in general refers to all the business activities involved in moving the produce from producers to the ultimate consumers. The agencies which handle the commodity as it passes through several marketing process would form the marketing channels. In the study of marketing of any commodity it is necessary to identify the marketing channels through which the goods moves. The marketing channels for Bajra are bit complex in the sense that it involves stages of processing before it reaches to the final consumer. These channels involve certain amount of marketing costs and margins. The marketing channel is one of the important aspects in the marketing of Bajra. Such as type of channel between the producer and consumer affect the producer's share in the consumer's rupee. Different marketing channels involved in the marketing of Bajra are as follows.

**Channel-I: Producer-Consumer**

**Channel-II: Producer - Wholesaler - Retailer - Consumer**

**Channel-III: Producer – Wholesaler - Processor - Retailer - Consumer**

**Price Spread:** The Price spread refers to the difference between the price paid by the consumer and the price received by the producer for equivalent quantity of farm product. This spread consists of marketing costs and margins of the intermediary which ultimately determine the overall efficiency of marketing systems. The price spread in the Bajra in II and III channels have been worked out in table V. Whereas in channel I, producer directly sell their produce and get whole price, therefore further explanation of this channel has not taken an account.

Table II shows that the both i.e. whole seller and retailer equal net margin per QTL. Rs.150 In channel-II. And channel-III net margin of whole seller Rs.150, processor Rs.200 and retailer Rs.223.80 respectively. The producer's share in consumer's rupee 80.46 per cent in channel-II and 64.05 per cent in channel-III and price spread of channel II Rs. 466.50, and channel-III Rs.1078.50. and marketing efficiency of channel-II 5.21 per cent, channel-III 2.78 per cent. The average size of holding of marginal, small and large size of

group of sample holder came to 0.69 hectare, 1.54 hectare and 3.26 hectare respectively. Among sample Bajra respondents 36 per cent respondents were marginal size group, 441 per

cent were small size group and 20 per cent large size group. Among all sample Bajra growers 100 percent of the respondents were above 32 years age group.

**Table 2:** Producer's share, marketing costs, marketing margins and marketing efficiency in explained channels of Bajra (Rs./qtl)

S. No.	Particular	Channel – I	Channel - II	Channel -III
	Price received by producer	1800.00	1843.00	1843.00
1	<b>Marketing charges paid by producer</b>			
A	Loading	6	6	6
B	Transportation	22.50	22.50	22.50
C	Unloading, weighing & filling of the bag	-	10	10
D	Standard deduction on the weight	-	20	20
E	Mandi Fee	-	20	20
	Total Charges	-	78.50	78.50
	Producers margin		78.50	78.50
2	Selling Price by producer/Purchase price of whole seller	-	2000	2000
4	Marketing cost incurred by whole seller	-	30	30
5	Whole seller net margin	-	150	-
6	Purchase price of processor	-	-	2030
7	Marketing cost incurred by processor	-	-	58
8	Processing cost of Bajra	-	-	299.70
9	Processor net margin	-	-	200
10	Purchase price of retailer	-	2180	2587.70
11	Marketing cost incurred by retailer	-	58	38.50
12	Retailer net margin	-	150	223.80
13	Purchase price of consumer	1828.50	2388	2850.00
14	Price spread	28.50(1.67)	545(22.82)	1007(35.33)
15	Producer share in consumer rupee (%)	95.61	77.17	64.66
16	Marketing efficiency {E=(V/I+1)}	100.0	5.12	2.78

### Summary and Conclusion

It is observed that producers who directly sell their produce to consumer (Producer-Consumer) gain more profit due to non-payment of different charges viz., loading, transportation, unloading, weighing and mandi fee etc. Approximately 10 per cent of the total produce handled in the study area moved through this channel. In this channel (Producer - Wholesaler – Retailer-Consumer) the producers directly sold their produce to wholesaler who sold the produce to retailers of towns and cities thereafter it reached in the plates of consumers. About 30 per cent of the produce in the study area moved through this channel. In this channel (Producer - Wholesaler - Processor -Retailer- Consumer) the producers sell their produce to wholesaler in munda, wholesaler sells it to processor (flour miller) of towns and cities hereafter these processors sell Bajra in the form of flour to Retailers and finally reaches to consumers plate. Nearly about 60 per cent of the produce in the study area moved through this adopted channel.

It can be concluded from this study that channel I there are no intermediaries, in channel-II there are two intermediaries like wholesaler and retailer involved and both intermediaries enjoy net margin of Rs.150 per quintal in marketing of Bajra. In channel-III there are three intermediaries i.e. the wholesaler, processors and retailers were involved. Wholesaler's net margin Rs.150 per quintal and processor net margin 200.00 and retailer net margin 223.80 per qtl.

Highest producer's share in consumer's rupee 80.46 per cent was obtained through channel II followed by 64.05 per cent by channel-III in marketing channel of Bajra during the study period. Highest marketing efficiency 5.12 per cent was obtained through channel-II followed by 2.78 per cent by channel-III in marketing channel of Bajra during the study period. Within the study it was found that the cost of cultivation per farm over all the households i.e. marginal, small and large was increasing respectively, in the marketing

problems it was found that the price spread was maximum over the channel second as compared to the channel third. And among the constraints the major problem was of the irrigation resources.

### Reference

1. Singh R, George MV. Production and marketing surplus of Paddy in Punjab. Agricultural situation in India. 1969;24(2):115-119.
2. Chandel CG. Study of marketable and marketed surplus of food grains in Marathwada region of Maharashtra State. Marathwada Agricultural University. M.K.V., Parbhani; c2000. p. 51-53.
3. Deshmukh DS, Pawar BR, Landge VV, Yeware PP. Marketed surplus and price spread in different channel of pearl millet market Int. J Comand Busi. Management. 2010;3(1):41-4.
4. Sharma S, Singh IP, Rao PP, Basavaraj G, Nagraj N. Economics analysis of pearl millet marketing in Rajasthan Int. J.Com, and Busi Mangement. 2013;6(1):66-75.0
5. Mohit MK, Sanjay K. An economic analysis of production of pearl millet in Jaipur district of Rajasthan, Int. J of Recent scientific Re. 2017;8(10):20602-2060.
6. Poonam K, Garbal S, Dropati S, Thanuja P. Constraints face by the farmers in the marketing of pearl millet In Jhunjhunu district of Rajasthan. J. of Pharmocognosy and Phytochemistry. 2018;7(4):1720-1721.
7. Kundu KK, Sumit DK. Production and marketing patterns of pearl millet in India with special reference to Haryana. Int. J Curr. Microbiol. App. Sci. 2019;8(08):2152-2160.