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Marketing Efficiency and Price Spread in Marketing of Pear Millet in Haryana

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ABSTRACT

In Haryana state, Bhiwani and Mohindergarh districts were purposively selected on the basis of the highest area and production under pearl millet crop, so most of Pearl Millet produce is marketed in these markets. In the study it was observed that producer share in consumer rupee was found maximum in the channel-III followed by channel–II and minimum in channel-I, because number of intermediaries in channel-I were more (P-VT-W-R-C). Each intermediary was having margin within the channel due to this producer share in consumer rupee increased in channel-III (P-C) followed by channel-II (P-W-R-C) and channel-I (P-VT-W-R-C) in the selected districts. It was found that the price spread was maximum in channel-I (P-VT-W-R-C) followed by channel-II (P-W-R-C) and was minimum in channel-III (P-C) in both the districts.

Key words: *Pearl millet, Price spread, Consumer, Channel, Intermediary, Margin.*

INTRODUCTION

After wheat, rice, maize, barley and sorghum Pearl millet (*Pennisetum glaucum*) is the sixth most important cereal crop in the world as a millet crop. It is the most widely grown crop under the millet group and grown mainly as rain fed crop in India. India is the largest producer of pearl millet crop. This crop is well adapted to the production system characterized by drought, low soil fertility and high temperature conditions. In Haryana, maximum area under pearl millet was in Bhiwani district followed by Mohindergarh district during the year 2011-12. Bhiwani and Mohindergarh district alone accounted 49.22 per cent of the total area and 47.06 per cent of the total

production of pearl millet in the State. As the pearl millet food grain is less-perishable in nature, the farmers may sell after some period of time after harvesting. In local market producer do not get satisfactory price for their produce, so that they have a way to sell their produce to the distant big markets. In these big markets different intermediaries such as wholesaler and retailers can play the important role in different channels of pearl millet marketing. Therefore, there is a greater need to understand the marketing system of pearl millet in order to assist the growers in selling and getting remunerative prices of their produce.

MATERIAL AND METHODS

In Haryana state, Bhiwani and Mohindergarh districts were purposively selected on the basis of the highest area and production under pearl millet crop. From the area, different middlemen were selected randomly for the study of marketing of pearl millet. Information related to marketed surplus, prices received and costs incurred in marketing were collected and price spread across different value chain analyzed.

Market survey was conducted to assess the price spread across different value chain for pearl millet. Regulated and unregulated markets are selected in both the district. Five wholesalers, five commission agents and five retailers from each market were selected for the study.

Price Spread: To study the price spread in marketing of pearl millet, data pertaining to marketing costs and margins were analyzed as under

$$\text{Average gross margin} = \frac{\text{Total Sale Value} - \text{Total Purchase Value}}{\text{Quantity of the product handled}}$$

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

$$\text{Percentage margin} = \frac{P_{ri} - (P_{pi} + C_{mi})}{P_{ri}} \times 100$$

Where,

P_{ri} = Total value of receipts of pearl millet (Rs per quintal)

P_{pi} = Total purchase value of pearl millet (Rs per quintal) and

C_{mi} = Cost incurred in marketing of pearl millet (Rs per quintal)

Total cost of marketing:

$C = C_F + C_{mi} + C_{m2} + C_{m3} + \ldots + C_{mn}$

Where,

C = total cost of marketing (Rs per quintal)

C_F = cost borne by the producer/farmer from the time at which the produce leave the farm till the sale of the produce (Rs per quintal) and

C_{mi} = cost incurred by the middlemen during the process of buying and selling (Rs per quintal)

Producer's share:

The producer's share in the consumer rupee worked out as under

$$P_S = \frac{P_F \times 100}{P_C}$$

Where,

P_S = producer share in consumers rupee (in per cent)

P_F = price of produce received by the farmer (Rs per quintal)

P_C = price of produce paid by the consumer (Rs per quintal)

Marketing efficiency:

To study the marketing efficiency, Acharya measure of modified marketing efficiency was used.

$MME = [RP \div (MC + MM)] - 1$

Where,

MME = Modified measure of marketing efficiency

RP = Retailer sale price (Rs per quintal) and

RP = FP + MC + MM

Where,

FP = Net price received by farmers (Rs per quintal)

MC = Total marketing cost (Rs per quintal)

MM = Total net margin of intermediaries (Rs per quintal)

RESULTS AND DISCUSSION

Marketing channels and price spread of pearl millet

The marketing cost and margins were worked out for pearl millet in the selected market of Mohindergarh and Bhiwani district. The marketing cost and margins were calculated during the peak period. Since marketing costs and margin vary, depending upon the channels through which the produce passes on its consumer three Marketing Channels were identified for pearl millet

(I) Producer → Village Trader → Wholesaler → Retailer → Consumer

(II) Producer → Wholesaler → Retaile → Consumer

(III) Producer → Consumer

The marketing cost and margin of the pearl millet through different channels in Bhiwani and Mohindergarh district are shown in Table 1. In Bhiwani district, the producer share in consumer rupee was highest in the channel-III (98.79%) followed by channel-II (73.26%) and it was lowest in the channel-I (72.64%). In Mohindergarh district also the producer share in consumer rupee was highest in the channel-III (P-C) i.e 99.05 per cent followed by channel-II (P-W-R-C) i.e 74.13per cent and it was lowest in the channel-I (P-VT-W-R-C) i.e 70.04 percent. The expenses incurred by the producer were Rs 12 per quintal in channel-I, Rs 17 per quintal in channel-II and Rs 10 per quintal in the channel-III in Bhiwani while this was Rs 8 per quintal in channel-I, Rs 13 per quintal in channel in channel-II and Rs 8.00 in the channel-III in the Mohindergarh district. The transportation charge accounted highest in the channel-II i.e Rs. 14 followed by Rs 8 in channel-I, it was lowest in the channel-III i.e Rs 6 per quintal in Bhiwani while in Mohindergarh this was highest in the channel-II Rs. 10 followed by Rs 6 in channel-I, it was lowest in the channel III (Rs 5.00). In Bhiwani

the expenses incurred by retailer in channel-I and II were Rs. 16.00 while this was Rs. 17.00 in Mohindergarh. The margin of the retailer was Rs. 54 per quintal of the Pearl millet, constituting 6.27 per cent of the consumer price paid in both the channel I and channel II in Bhiwani while Rs. 73 per quintal constituting 6.79 per cent of the consumer price paid in both channel I and channel II in the Mohindergarh. In Bhiwani, margin of the wholesaler was Rs. 73.8 per quintal in channel-I and Rs. 83.90 per quintal in channel-II while this was Rs.82.60 per quintal in channel -I and Rs.112.90 per quintal in channel II in Mohindergarh. Total cost incurred by village trader was 18 per quintal in channel I, Which was 1.76 per cent of consumer rupee in Bhiwani while 15 per quintal in channel I which was 1.39 per cent of consumer rupee in Mohindergarh Market. The margin of village trader was Rs. 57 per quintal that was 5.56 per cent of consumer rupee in Bhiwani while this was Rs. 64 per quintal which was 5.95 per cent of consumer rupee in the Mohindergarh.

Table 1: Marginal cost and margins per quintal of pearl millet through different channels in Bhiwani (B) and Mohindergarh (M) market

Name of the functionaries	Channel											
	I (P-VT-W-R-C)				II (P-W-R-C)				III (P-C)			
	Rs./quintal		Per cent share in consumer rupee		Rs./quintal		per cent share in consumer rupee		Rs./quintal		per cent share in consumer rupee	
	B	M	B	M	B	M	B	M	B	M	B	M
Price received by producer	738	753	72.64	70.04	798	797	73.26	74.13	820	842	98.79	99.05
Cost incurred by producer												
Loading Charge	1.5	1	0.15	0.09	1.5	1	0.15	0.09	1.5	1	0.18	0.12
Unloading Charge	1.5	1	0.15	0.09	1.5	1	0.15	0.09	1.5	1	0.18	0.12
Transportation Charge	8	6	0.78	0.5	14	10	1.37	0.93	6	5	0.72	0.58
Stitching	1	0	0.09	0	1	1	0.09	0.09	1	1	0.12	0.12
Commission agent charge(2 per cent)	0	0	0	0	0	0	0	0	0	0	0	0
Total cost	12	8	1.17	0.74	17	13	1.17	1.20	10	8	1.20	0.94
Producer sale price/Village Trader purchase price	750	761	73.53	70.79	815	810	79.90	75.35	830	850	100	99.06
Cost incurred by village Trader												
Loading Charge	1.5	1	0.15	0.09	0		0					
Transportation Charge	12	10	1.17	0.93	0		0					
Unloading Charge	1.5	1	0.15	0.09	0		0					
weighing charge	2	2	0.19	0.18	0		0					
Stitching(Rs. per quintaltl)	1	1	0.09	0.09	0		0					
Total cost	18	15	1.76	1.39	0		0					
Net margin of village trader	57	64	5.56	5.95	0		0					
Sale price of village Trader/Purchase price of Wholesaler	825	840	80.88	78.14	0	0	0	0				
Cost incurred by Wholesaler												

Mandi Tax@1 per cent	8.2	8.4	0.80	0.78	8.10	8.1	0.79	0.75				
Loading charges	1.5	1	0.15	0.09	1.5	1	0.15	0.09				
Unloading Charge	1.5	1	0.15	0.09	1.5	1	0.15	0.09				
Cost of gunny bags	25	35	2.45	3.25	25	35	2.94	3.25				
Transportation Charge	15	17	1.47	1.58	15	17	1.47	1.58				
Total Cost	51.2	62.4	5.02	5.80	51.1	62.1	5.01	5.70				
Net margin of Wholesaler	73.8	82.6	7.23	7.68	83.9	112.90	8.22	10.50				
Sale price of Wholesaler/Purchase price of retailer	950	985	93.14	91.62	950	985	93.14	91.62				
Cost incurred by retailer												
Transportation charges from mandi to shop	10	12	0.98	1.11	10	12	0.98	1.11	10	12	0.98	1.11
Labour charge for loading and unloading	3	2	0.29	0.19	3	2	0.29	0.19				
Storage Facilites	3	3	0.29	0.3	3	3	0.29	0.3				
Total cost	16	17	1.56	1.58	16	17	1.56	1.58				
Net Margin of Retailer	54	73	6.27	6.79	54	73	6.27	6.79				
Sale price of Retailer/Purchase price of Consumer	1020	1075	100	100	1020	1075	100	100	840	850	100	100
Price Spread	282	322			222	278			10	8		

P= Producer, VT=Village trader, W= Wholesaler, R= Retailer, C= Consumer

Relative share of producer in consumer rupee

The table 2 revealed that in channel-I, the marketing cost was (1.17%) and (0.74%) in Bhiwani and Mohindergarh market respectively. Net share was higher (72.35%) in the Bhiwani than (70.05%) in Mohindergarh market. In channel-II, the marketing cost was (1.66%) and (1.21%) in Bhiwani and Mohindergarh market respectively. Net share was higher (78.23%) in the Bhiwani market than (74.13%) in the Mohindergarh market. In channel-III, the marketing cost was (1.20%) and (0.94%) in Bhiwani and Mohindergarh market respectively. Net share was higher (99.06%) in the Mohindergarh market than (98.79%) in Bhiwani market in channel-III.

Table 2: Relative share of producer in consumer rupee

Market	Price paid by consumer	Sale price of producer	Marketing cost	Net share
Channel-I (P-VT-W-R-C)				
Bhiwani	1020 (100)	750 (73.52)	12 (1.17)	738 (72.35)
Mohindergarh	1075 (100)	761 (70.79)	8 (0.74)	753 (70.05)
Channel –II (P-W-R-C)				
Bhiwani	1020 (100)	815 (79.90)	17 (1.66)	798 (78.23)
Mohindergarh	1075 (100)	810 (75.34)	13 (1.21)	797 (74.13)
Channel-III (P-C)				
Bhiwani	830 (100)	830 (100)	10 (1.20)	820 (98.79)
Mohindergarh	850 (100)	850 (100)	8 (0.94)	842 (99.06)

Figures in parenthesis are percentage of price paid by consumer
P= Producer, VT= Village trader, W= Wholesaler, R= Retailer, C= Consumer

Relative share of village trader in consumer rupee in channel –I: (P-VT-W-R-C)

The analysis of relative share of village trader per quintal of pearl millet given in table 3 revealed that the gross margin was (7.35%) and (7.34%) in the Bhiwani and Mohindergarh market respectively. The marketing cost was (1.76%) and (1.39%) in Bhiwani and Mohindergarh market respectively. Net share was higher (5.95%) in the Mohindergarh market than (5.58%) in Bhiwani market in channel-I.

Table 3: Relative share of village trader in consumer rupee in channel-I: (P-VT-W-R-C)

Market	price paid by consumer	Purchase price of village trader	sale price of village trader	gross margin	marketing cost	Net share
Bhiwani	1020 (100)	750 (73.52)	825 (80.88)	75 (7.35)	18 (1.76)	57 (5.58)
Mohindergarh	1075 (100)	761 (70.79)	840 (78.13)	79 (7.34)	15 (1.39)	64 (5.95)

Figures in parenthesis are percentage of price paid by consumer

Relative share of whole seller in consumer rupee in channel – I: (P-VT-W-R-C)

The analysis of relative share of wholesaler per quintal of pearl millet in the table 4 revealed that the gross margin was (12.25%) and (13.48%) in the Bhiwani and Mohindergarh market respectively. The marketing cost was (5.02%) and (5.80%) in Bhiwani and Mohindergarh market respectively. Net share was higher (7.68%) in the Mohindergarh market than (7.23 %) in Bhiwani market in channel-I

Table 4: Relative share of wholesaler in consumer rupee in channel-I: (P-VT-W-R-C)

Market	Price paid by consumer	Purchase price of whole seller	Sale price of whole seller	Gross margin	Marketing cost	Net share
Channel-I (P-VT-W-R-C)						
Bhiwani	1020 (100)	825 (80.88)	950 (93.13)	125 (12.25)	51.20 (5.02)	73.80 (7.23)
Mohindergarh	1075 (100)	840 (78.13)	985 (91.62)	145 (13.48)	62.4 (5.80)	82.60 (7.68)
Channel-II (P-W-R-C)						
Bhiwani	1020 (100)	810 (79.41)	950 (93.13)	135 (13.23)	51.10 (5.01)	83.90 (8.22)
Mohindergarh	1075 (100)	815 (75.81))	985 (91.62)	175 (16.27)	62.10 (5.7)	112.90 (10.50)

Figures in parenthesis percentage of consumer price
P= Producer, VT= Village trader, W= Wholesaler, R= Retailer, C= Consumer

Relative share of wholesaler in consumer rupee in channel –II: (P-W-R-C)

Table 4 revealed that the gross margin was (13.23%) and (16.27%) in the Bhiwani and Mohindergarh market respectively. The marketing cost was (5.01%) and (5.70%) in Bhiwani and Mohindergarh market respectively. Net share was higher (10.50%) in the Mahindergarh market followed by (8.22%) in Bhiwani market in channel-II.

Relative share of retailer in consumer rupee in channel –I: (P-VT-W-R-C)

The analysis of relative share of retailer per quintal of pearl millet table 5 revealed that the gross margin was (6.86%) and (8.37%) in the Bhiwani and Mohindergarh market respectively. The marketing cost was (1.56%) and (1.58%) in Bhiwani and Mohindergarh market respectively. Net share was higher (6.79%) in the Mohindergarh market followed by (5.29%) in Bhiwani market in channel-I

Table 5: Relative share of retailer in consumer rupee: (P-VT-W-R-C)

Market	Price paid by consumer	Purchase price of retailer	Sale price of retailer	Gross margin	Marketing cost	Net share
Channel-I (P-VT-W-R-C)						
Bhiwani	1020 (100)	950 (93.13)	1020 (100)	70 (6.86)	16 (1.56)	54 (5.29)
Mohindergarh	1075 (100)	985 (91.62)	1075 (100)	90 (8.37)	17 (1.58)	73 (6.79)
Channel-II (P-W-R-C)						
Bhiwani	1020 (100)	950 (93.13)	1020 (100)	70 (6.86)	16 (1.56)	54 (5.29)
Mohindergarh	1075 (100)	985 (91.62)	1075 (100)	90 (8.37)	17 (1.58)	73 (6.79)

Figures in parenthesis percentage of consumer price
P= Producer, VT= Village trader, W= Wholesaler, R= Retailer, C= Consumer

Relative share of retailer in consumer rupee in channel II: (P-W-R-C)

The analysis of relative share of retailer per quintal of pearl millet given in table 5 revealed that the gross margin was (6.86%) and (8.37%) in the Bhiwani and Mohindergarh market respectively. The marketing cost was (1.56%) and (1.58%) in Bhiwani and

Mohindergarh market respectively. Net share was higher (6.79%) in the Mohindergarh market than (5.29%) in Bhiwani market in channel-II

PRICE SPREAD

Price spread in channel-I: (P-VT-W-R-C)

The perusal of table 6 revealed that producer share in consumer rupee was 71.16 per cent on an overall average basis. The price spread was as high as 28.83 per cent out of which 9.53 per cent was accounted by marketing cost and 19.30 per cent was accounted by margins.

Table 6: Price spread in channel –I (P-VT-W-R-C)

	Mohindergarh		Bhiwani		Overall	
	Rs per quintal	per cent share of consumer rupee	Rs per quintal	per cent share of consumer rupee	Rupees per quintal	Percentage share in consumer rupee
Producer net price	753	70.04	738	72.64	745.50	71.16
Cost incurred by						
Producer	8	0.74	12	1.17	10	0.95
village trader	15	1.39	18	1.76	16.50	1.57
Wholesaler	62.4	5.80	51.2	5.02	56.80	5.42
Retailer	17	1.58	16	1.56	16.50	1.57
total cost	102.4	9.52	97.2	9.52	99.8	9.53
Margin of						
village trader	64	5.95	57	5.56	60.50	5.77
Wholesaler	82.6	6.94	73.8	7.23	78.20	7.46
Retailer	73	6.79	54	6.27	63.50	6.06
Total margin	219.6	20.43	184.8	18.11	202.20	19.30
price of retailer/purchase of consumer	1075	100	1020	100	1047.50	100
Price spread	322	29.95	282	27.64	302	28.83

Price spread in channel-II (P-W-R-C)

The perusal of table 7 revealed that producer share in consumer rupee was 76.13 per cent on an overall average basis. The price spread was as high as 23.86 per cent out of which 8.41 per cent was accounted for by marketing cost and 15.45 per cent was accounted for by margins.

Table 7: Price spread in channel –II (P-W-R-C)

	Mohindergarh		Bhiwani			Overall
	Rs per quintal	per cent share of consumer rupee	Rs per quintal	per cent share of consumer rupee	Rupees per quintal	Percentage share in consumer rupee
Producer net price	797	74.13	798	73.26	797.50	76.13
Cost incurred by						
Producer	13	1.2	17	1.17	15	1.43
village trader	-	-	-	-	-	-
Whole seller	62.10	5.70	51.1	5.01	56.60	5.40
Retailer	17	1.58	16	1.56	16.50	1.57
total cost	92.10	8.57	84.1	8.24	88.1	8.41
Margin of						
village trader	-	-	-	-	-	-
Whole seller	112.90	10.50	83.90	8.22	98.40	9.39
Retailer	73	6.79	54	6.27	63.50	6.06
total Margin	185.90	17.29	137.90	13.52	161.90	15.45
price of retailer/purchase of consumer	1075	100	1020	100	1047.50	100
Price spread	278	25.86	222	21.76	250	23.86

Price Spread in channel-III (P-C)

The perusal of table 8 revealed that producer share in consumer rupee was 98.92 per cent on an overall average basis. The price spread was only 1.05 per cent out of which 1.05 per cent was accounted for by marketing cost and zero percent was accounted for by margins.

Table 8 Price spread in channel-III (P-C)

	Mohindergarh		Bhiwani		Overall	
	Rs. per quintal	Percent share of consumer rupee	Rs. per quintal	Percent share of consumer rupee	Rs. per quintal	Percent share in consumer rupee
Producer net price	842	99.05	820	98.79	841	98.92
Cost incurred by						
Producer	8	0.94	10	1.20	10	1.05
Village trader	-	-	-	-	-	-
Wholesaler	-	-	-	-	-	-
Retailer	-	-	-	-	-	-
Total cost	8	0.94	10	1.20	10	1.05
Margin of						
Village trader	-	-	-	-	-	-
Whole seller	-	-	-	-	-	-
Retailer	-	-	-	-	-	-
Total cost	-	-	-	-	-	-
Price of retailer/purchase of consumer	850	100	850	100	830	100
Price spread	8	0.94	10	1.20	10	1.05

MARKETING EFFICIENCY
Efficiency of channel-I: (P-VT-W-R-C)
Table 9 revealed that efficiency of Bhiwani market was higher (2.61) than market efficiency of Mohindergarh market (2.33) in channel-I. Marketing efficiency in Bhiwani market was higher i.e. 3.59 followed by Mohindergarh market i.e. 2.86. In channel-II also Bhiwani market was more efficient as compared to Mohindergarh market. But in channel-III, marketing efficiency of Mohindergarh market was higher i.e. 105.25 than Bhiwani market i.e. 84.

Table 9: Marketing efficiency

	Channel I (P-VT-W-R-C)		Channel II (P-W-R-C)		Channel III (P-C)	
Markets	Mohindergarh	Bhiwani	Mohindergarh	Bhiwani	Mohindergarh	Bhiwani
Retail sale price	1075	1020	1075	1020	850	830
Total marketing cost	102.4	97.2	92.1	84.1	8	10
Total net margin of intermediaries	219.6	184.8	185.9	137.9	0	0
Net price received by farmer	753	738	797	798	842	820
Modified marketing efficiency	2.33	2.61	2.86	3.59	105.25	84

P= Producer, VT=Village trader, W= Wholesaler, R= Retailer, C= Consumer

CONCLUSION
From the findings, it was observed that producer share in consumer rupee was found maximum in the channel-III followed by channel –II and minimum in channel-I because number of intermediaries in channel-I were more (P-VT-W-R-C). Each intermediary was having margin within the channel due to which the producer share in consumer rupee increased in channel-III (P-C) followed by channel-II (P-W-R-C) and channel-I (P-VT-W-R-C).

Price spread was maximum in channel-I followed by channel-II and was minimum in channel-III in both the districts. Price spread in channel-I was maximum due to the reason that the intermediaries were more in channel-I so marketing cost and margin was maximum.

Marketing efficiency of Bhiwani market was greater than Mohindergarh market in channel-I and channel-II while efficiency of Mohindergarh market was greater than Bhiwani market in channel-III. In Channel-III, marketing efficiency was extremely high as compare to all other channels mainly because this channel was smallest and no intermediaries were present in the channel.

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