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ORIGINAL ARTICLE

Market performance of potato in Farrukhabad district of Uttar Pradesh

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ABSTRACT

The purpose of the study was to identify marketing channels of potato and to assess the price spreads, marketing margins and marketing efficiency of potato in Farrukhabad district of Uttar Pradesh, India. The primary data was collected potato by survey method. The study was focused on 120 potato farmers, 73 marginal farmers, 35 small farmers, and 12 medium farmers. It was conducted in Farrukhabad district of Uttar Pradesh having highest area under cultivation and production. The selection of channel actors was made using two stage stratified random sampling technique. Marketing efficiency of the channels was calculated by Acharya's modified method. Three major marketing channels identified in the study were (I) Producer – consumer, (II) Producer – retailer – consumer and (III) Producer – wholesaler – retailer – consumer. The farmers had to incur high expenses towards packing material and transportations whereas for other intermediaries in all the channels, weight loss and spoilage followed by transportation were the major marketing cost. The price spread was low in channel III as the produce was sold to the retailer directly by the farmer. The channel I had the highest marketing efficiency. Comparing channel II and III, it was revealed that relatively lower marketing efficiency of channel for potato marketing. The paper also provides empirical information that serves as a sources to adopt market options for increased benefits to various chain actors.

**Keywords** – Marketing cost, Marketing efficiency, Price spread, Potato

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**INTRODUCTION**

Potato (*Solanum tuberosum* L.) is one of the most important food crops grown in more than 100 countries in the world. Over one billion people consume potato worldwide and it is the staple diet of half a billion people in developing countries [1]. Potato is a perishable commodity and contains about 75% water. Nutritionally, the potato is the best known for its carbohydrate content (approximately 26 grams in a medium potato). It is a high energy food contains about 80 kcal per 100 grams of fresh potato [2]. The potato contains vitamins and minerals that have been identified as vital role to human nutrition, as well as an assortment of phytochemicals, such as carotenoids and polyphenols. The fiber content of a potato with skin (2g) is equivalent to that of many whole grain breads, pastas, and cereals [3].

Uttar Pradesh is the highest potato producing state of India followed by West Bengal, Bihar, Gujarat and Madhya Pradesh [4]. These five states together contributed more than 80% of total potato production in the country. In order to solve farmers' problem, Indian government has set a target of doubling farmers' income by the year 2022-23 through many welfare schemes including increase in minimum support prices (MSP) of major crops [5]. Potato is an important cash crop for Indian farmers but because of its perishable nature, Government is not providing any MSP for it. It was

estimated that this country will require nearly 125 million t of potato from an enhanced area of 3.62 million ha with an average productivity of 34.5 t/ha during the year 2050 [6].

Throughout India, the area of potato in 2019–20 was about 2.05m hectares and the production was about 48.56 million metric tonnes with a productivity of 23688 kilo-grams per hectare, but in 2020–21, India produced 54.23 million metric tonnes from a 2.25m hectare area with a total productivity of 24102 kilo-grams per hectare. In Uttar Pradesh 2019–20, the area is about 0.057 million hectares, and the production is about 1.3 million metric tonnes, with a productivity of 228.07 quintals per ha; however, in 2020–21, the area is about 0.062 million hectares, and the production is about 1.58 million tonnes, with a productivity of 254.84 quintals per ha. [7].

The top ten potato growing states of India are Uttar Pradesh, Punjab, Assam, Haryana, Chhattisgarh and Jharkhand. Uttar Pradesh ranks first in productivity (38.00 MT/ha) followed by Punjab (26.70 MT/ha) and West Bengal (26.16MT/ha) [8]. In Uttar Pradesh state potato is grown as winter crop in plains (sown in the month of September–October) and harvested during February – March.

The objectives of the present study were to functionaries for fresh potato under various marketing margins of different to analyse the price spread, marketing efficiency and farmer's share in consumer's rupee in various marketing channels.

## MATERIAL AND METHODS

The study was based on primary data which collected from Farukkhabad district in which Dan mandi serving as major market for disposal of potato in the study area was selected for studying the nature and magnitude of marketing costs and margin in the marketing of potato. A multistage stratified purposive cum random sampling technique was applied for the selection of district, block, and respondent. Total 120 respondent (i.e., 73 marginal, 35 small and 12 medium) were selected randomly through proportionate allocation to the population during, 2023-24. The main market functionaries engaged in the marketing of marketing in three blocks (Mohammadabad, kamalganj, Barhpur) village traders, wholesaler/ commission agent and retailers.

### Marketable and marketed surplus:

- i- The marketable and marketed surplus of paddy generated by different size groups of farms have been worked out as follow:

$$MS = P - C$$

Where,

MS =Marketable surplus

P = Total production of crop

C = Total requirement (family consumption, seeds, payment of wages to labours, cattle feed, payments to service providers persons such as carpenter, blacksmith, barber, washer man etc.)

- ii -The marketed surplus indicates the actual quantity of produce sold by  $MT = MS - L$

Where,

MT = Marketed surplus

MS = Marketable surplus actually sold

L = Losses during storage and transportation and spared for home consumption marketable surplus left for home.

### Marketing efficiency was analysed with following Shepherd's formula:

$$\text{Marketing efficiency (ME)} = V/I*100$$

Where,

V = Value of goods sold (Consumer's price)

I = Total marketing costs (MC)

Higher the ratio, the higher efficiency and vice-versa.

### Price Spread

The difference between the price paid by the consumer and the net price received by producer was taken as the concept of spread. This included not only the actual prices at various stages of marketing channels, but also the costs incurred in the process of the movement of the produce from the farm to the consumer and the margin of the various intermediaries.

### Marketing margin:

Marketing margins represent the difference between the price paid and received by a given market intermediary in the marketing of a commodity such as wholesaler, retailer etc. What a farmer get ultimately for a product is the residual amount that remains after the costs and margins are accounted for in the consumer's rupee.

### Marketing cost:

The movement of the products from the producers to the ultimate consumers involve costs, taxes and chess which are called marketing costs. These costs vary with the channels through which a particular commodity (vegetable). Marketing costs indicate the extent of costs incurred in the movement of a commodity from producer to consumer.

### RESULTS AND DISCUSSION

The marketing channels are linked with the chains of intermediaries involved at various levels of marketing for smooth distribution of the products.

The major marketing Channels identified in the present study were:

Channel I Producer -- Consumer

Channel II Producer - retailer - consumer

Channel III Producer - wholesaler - retailer - consumer

#### Nature and extent of marketable and marketed surplus of potato:

From the table 1 observed that marketable and marketed surplus were equal in size of sample farms. Marketable surplus was observed to be 281.50, 306.25, and 318.75 quintals on marginal small and medium size group of farms with overall average of 295.75 quintals. Marketed surplus was observed to be 279.65, 303.90 and 315.80 quintals on marginal, small and medium size of sample farms, respectively with an overall average of 293.56 quintals.

**Table 1. Nature and extent of marketable and marketed surplus of potato on different size group of farms (qtl).**

S.No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
A.	<b>Total Production</b>	281.50 (100.00)	306.25 (100.00)	318.75 (100.00)	295.75 (100.00)
1.	<b>Family Consumption</b>	1.85 (0.66)	2.35 (0.77)	2.95 (0.93)	2.19 (0.73)
2.	<b>Marketable surplus</b>	279.65 (99.34)	303.90 (99.23)	315.80 (99.07)	293.56 (99.26)
3.	<b>Marketed surplus</b>	279.65 (99.34)	303.90 (99.23)	315.80 (99.07)	293.56 (99.26)

(Figures in parenthesis show the percent to corresponding total production).

#### Pattern of disposal of potato under different size of sample farms:

Disposal of potato through various channels, as producer - consumer, Producer - retailer - consumer, Producer - wholesaler - retailer - consumer were given Table 2. This table indicated that the maximum sale of potato done through channel - III (457.41 qtl.) followed by channel - II (294.32 qtl.) and channel - I (147.62 qtl. ) on marginal, small and medium farms. In respect to marginal farms, the maximum farms, the maximum sale of potato through channel - III (137.84 qtl.), followed by channel - II (95.86 qtl.) and channel - I (45.95 qtl.) In case of small farms, maximum sale of potato was channel - III (157.78 qtl.) followed by channel - II ( 97.23 qtl.) and channel - I (48.89 qtl.). In case of medium farms, maximum sale of potato through channel - III (161.79 qtl.) followed by channel - II (101.23 qtl.) and channel - I (52.78 qtl. ) respectively.

**Table 2 . Disposal pattern of Potato through different channels on different size group of farms (qtl).**

S.No.	Size of group of farms	Channel I	Channel II	Channel III	Total Quantity
1.	<b>Marginal</b>	45.95 (16.43)	95.86 (34.28)	137.84 (49.29)	279.65 (100.00)
2.	<b>Small</b>	48.89 (16.08)	97.23 (32.00)	157.78 (51.92)	303.90 (100.00)
3.	<b>Medium</b>	52.78 (16.71)	101.23 (32.06)	161.79 (51.23)	315.80 (100.00)
	<b>Total</b>	147.62 (16.41)	294.32 (32.73)	457.41 (50.86)	899.35 (100.00)

(Figures in parenthesis show the percent to corresponding total quantity).

#### Marketing channels, marketing efficiency, price spreads, marketing costs and margin of potato

The price spread refers to the difference between the price paid by the consumer and the actual (net) price received by the producer during reference period for an equivalent quantity of farm produce. Marketing margins refers to the difference between the price paid and price received by any specific marketing agency. Marketing costs refers to the margin or profits of the middlemen, marketing charges paid by producers plus charges paid by whole sellers plus charge paid by retailers in the process of marketing of said procedure.

The following channels were identified for marketing of potato in the study area.

Channel I. Producer- wholesaler- processor

Channel II. Producer- village trader - wholesaler- processor

Table 3 displayed the price spread, marketing costs and margins of potato in channel-1.

**Channel-I (Producer - wholesaler- processor):**

It was observed from Table 3. that the sale of potato was made through producer- consumer. On an average, share in customer's rupee was worked out i.e. 87.84 per cent, which was comparatively higher than channel-II because of one middleman i.e. retailer involved. Expenses incurred on marketing of potato and margins received by retailer came to 5.95 and 12.65 per cent, respectively. Per quintal price received by marginal, small and medium farmers were 609.00, 625.00, and 667.00 however, producers share in customer rupee were 87.72, 87.82 and 88.29 per cent, respectively. On an average price spread was exhibited 12.16 per cent.

**Table 3. Price spread for potato marketing in Channel - I (Producer - Consumer) (Rs. /qtl.)**

S.No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	609.00 (87.72)	625.00 (87.82)	667.00 (88.29)	623.30 (87.84)
2.	<b>Cost incurred by the producer</b>				
(i)	Transportation	10.14 (1.46)	10.20 (1.43)	10.89 (1.44)	10.27 (1.45)
(ii)	Cost of bags	40.00 (5.76)	40.00 (5.62)	40.00 (5.29)	40.00 (5.64)
(iii)	Weighing charge	7.80 (1.12)	7.91 (1.11)	8.29 (1.10)	7.91 (1.12)
(iv)	Loading and unloading	10.80 (1.56)	10.92 (1.53)	11.01 (1.46)	10.87 (1.53)
(v)	Losses	8.27 (1.19)	9.23 (1.30)	9.48 (1.25)	8.79 (1.24)
(vi)	Other	8.24 (1.19)	8.39 (1.18)	8.78 (1.16)	8.37 (1.18)
(vii)	Total cost incurred by the producer	85.25 (12.28)	86.65 (12.18)	88.45 (11.71)	86.22 (12.16)
3.	Producer sale price / Consumer purchase price	694.25 (100.00)	711.65 (100.00)	755.45 (100.00)	709.52 (100.00)
4.	Price spread	85.25 (12.28)	86.65 (12.18)	88.45 (11.71)	86.22 (12.16)

(Figures in parentheses indicate percentage total of consumer's price each size of sample )

**II. Channel-II (Producer - retailer - consumer):**

It was observed from Table 4 that the marketing for potato was done by producer - retailer - consumer. On an average, share in customer's rupee was workout i.e. 67.25 per cent, which was comparatively lower than Channel-1 because of one middlemen's i.e. retailer were involved. Expenses incurred on marketing costs and margins at retailer were 5.67 and 17.34 per cent., respectively. Per quintal price received by marginal, small and medium farmers were 602.00, 595.00, and 588.00 however; producer's share in customer's rupee came to 67.70, 67.00 and 66.34 per cent, respectively. On an overall average gross price spread was exhibited 32.75 per cent.

**Table 4. Price spread for potato marketing in Channel - II (Producer - Retailer - Consumer) (Rs. / qtl.)**

S.No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	602.00 (67.70)	595.00 (67.00)	588.00 (66.34)	597.45 (67.25)
2.	<b>Cost incurred by the producer</b>				
(i)	Transportation cost	9.34 (1.05)	9.38 (1.06)	9.41 (1.06)	9.36 (1.05)
(ii)	Cost of bags	40.00 (4.50)	40.00 (4.50)	40.00 (4.51)	40.00 (4.50)
(iii)	Weighing charge	8.87 (1.00)	8.98 (1.01)	9.02 (1.02)	8.93 (1.01)
(iv)	Loading and Unloading	9.89 (1.11)	9.99 (1.12)	10.08 (1.14)	9.95 (1.12)
(v)	Losses	9.22 (1.04)	9.56 (1.08)	9.79 (1.10)	9.42 (1.06)
(vi)	Other	8.76 (0.99)	8.87 (1.00)	8.98 (1.01)	8.83 (0.99)
(vii)	Total cost incurred by the producer	86.08 (9.68)	86.78 (9.77)	87.28 (9.85)	86.51 (9.74)
(viii)	Producer sale price / Retailer purchase price	688.08 (77.38)	681.78 (76.78)	675.28 (76.19)	683.96 (76.99)
3.	<b>Cost incurred by the retailer</b>				
(i)	Transportation	10.95 (1.23)	11.08 (1.25)	11.10 (1.25)	11.02 (1.24)
(ii)	Grading	5.76 (0.65)	5.88 (0.66)	5.98 (0.67)	5.84 (0.66)
(iii)	Loading and Unloading	9.87 (1.11)	9.98 (1.12)	10.01 (1.13)	9.93 (1.12)
(iv)	Market fee	5.67 (0.64)	5.78 (0.65)	5.98 (0.67)	5.76 (0.65)

(v)	Losses	8.87 (1.00)	8.91 (1.00)	8.98 (1.01)	8.90 (1.00)
(vi)	Other charges	8.86 (1.00)	8.91 (1.00)	8.98 (1.01)	8.91 (1.00)
	Total cost incurred by the retailer	49.98 (5.62)	50.56 (5.69)	51.07 (5.76)	50.35 (5.67)
4.	Retailer net margin	151.17 (17.00)	155.67 (17.53)	159.98 (18.05)	154.07 (17.34)
5.	Retailer sale price/consumer purchase price	889.23 (100.00)	888.01 (100.00)	886.33 (100.00)	888.37 (100.00)
6.	Price Spread	<b>287.23</b> <b>(32.30)</b>	<b>293.01</b> <b>(33.00)</b>	<b>298.33</b> <b>(33.66)</b>	<b>290.92</b> <b>(32.75)</b>

(Figures in parentheses indicate percentage total of consumer's price each size of sample)

### Price spread for potato marketing in Channel - III

#### Channel III Producer - wholesaler - retailer - consumer

It was observed from Table 5 that the marketing for potato was done by producer-wholesaler- retailer - consumer. On an average, share in customer's rupee was worked out i.e. 58.76 per cent, which was comparatively lower than Channel-1 because of two middlemen's i.e. wholesaler and retailer were involved. Expenses incurred on marketing costs and margins at wholesaler were 2.69 and 11.39 per cent. Expenses incurred on marketing costs and margins received by retailer were 5.95 per cent and 12.65 per cent, respectively. Per quintal price received by marginal, small and medium farmers were 588.00, 582.00, and 575.00 however; producer's share in customer's rupee came to 59.16, 58.57 and 57.91 per cent, respectively. On an overall average gross price spread was exhibited 41.24 per cent.

**Table 5 . Price spread for potato marketing in Channel - III (Producer - Retailer - Consumer) (Rs. / qtl.)**

S.No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	588.00 (59.16)	582.00 (58.57)	575.00 (57.91)	583.95 (58.76)
2.	<b>Cost incurred by the producer</b>				
(i)	Transportation cost	10.80 (1.09)	10.81 (1.09)	10.87 (1.09)	10.81 (1.09)
(ii)	Cost of bags	40.00 (4.02)	40.00 (4.03)	40.00 (4.03)	40.00 (4.03)
(iii)	Weighing charge	5.76 (0.58)	5.87 (0.59)	5.96 (0.60)	5.83 (0.59)
(iv)	Loading and unloading	8.34 (0.84)	8.45 (0.85)	8.56 (0.86)	8.41 (0.85)
(v)	Losses	8.21 (0.83)	8.38 (0.84)	8.65 (0.86)	8.41 (0.85)
(vi)	Other	9.56 (0.96)	9.65 (0.97)	9.89 (1.00)	9.64 (0.97)
(vii)	Total cost incurred by the producer	82.67 (8.32)	83.16 (8.37)	83.93 (8.45)	83.03 (8.36)
(viii)	Producer sale price / wholesaler purchase price	670.67 (67.47)	665.16 (66.94)	658.93 (66.36)	666.98 (67.12)
3.	<b>Cost incurred by the wholesaler</b>				
(i)	Grading	4.76 (0.48)	4.87 (0.49)	4.98 (0.50)	4.83 (0.49)
(ii)	Market fee	5.25 (0.53)	5.65 (0.57)	5.87 (0.59)	5.48 (0.55)
(iii)	Loading and unloading	8.76 (0.88)	7.67 (0.77)	7.87 (0.79)	7.65 (0.77)
(iv)	Weighing charge	7.56 (0.76)	7.67 (0.77)	7.87 (0.79)	7.65 (0.77)
(v)	Total cost incurred by wholesaler	26.33 (2.65)	26.97 (2.71)	27.7 (2.79)	26.76 (2.69)
(vi)	Wholesaler margin	112.32 (11.30)	113.23 (11.39)	115.85 (11.67)	113.17 (11.39)
(vii)	Wholesaler's sale price / retailer purchase price	809.32 (81.42)	805.36 (81.05)	802.48 (80.82)	806.91 (81.20)
4.	<b>Cost incurred by the retailer</b>				
(i)	Transportation	10.12 (1.02)	10.34 (1.04)	10.87 (1.09)	10.31 (1.04)
(ii)	Loading and unloading	8.76 (0.88)	8.87 (0.89)	8.98 (0.90)	8.83 (0.89)
(iii)	Grading	5.56 (0.56)	5.76 (0.58)	5.78 (0.58)	5.66 (0.57)
(iv)	Weighing charge	7.34 (0.74)	7.65 (0.77)	7.97 (0.80)	7.54 (0.76)
(v)	Rent of shop / rehire	8.65 (0.87)	8.76 (0.89)	8.87 (0.89)	8.72 (0.88)
(vi)	Losses	9.45 (0.95)	9.65 (0.97)	9.86 (0.99)	9.58 (0.96)
(vii)	Other charge	8.34 (0.83)	8.54 (0.85)	8.98 (0.95)	8.51 (0.86)
(viii)	Total cost incurred by retailer	58.22 (5.85)	59.57 (5.99)	61.31 (6.18)	59.16 (5.95)
(ix)	Retailer margin	126.43 (12.72)	128.76 (12.96)	129.12 (13.00)	127.65 (12.85)
(x)	Retailer sale price /	993.97	993.69	992.91	993.71

	<b>consumer price</b>	(100.00)	(100.00)	(100.00)	(100.00)
<b>5.</b>	<b>Price spread</b>	405.97 (40.84)	411.69 (41.43)	417.91 (42.09)	409.76 (41.24)

**Inter - channel comparison as a whole for potato (Rs. / qtl.)**

S.No.	Particulars	Channel - I	Channel - II	Channel - III
<b>1.</b>	Price received by the producer	<b>623.30 (87.84)</b>	<b>597.45 (67.25)</b>	<b>583.95 (58.76)</b>
<b>2.</b>	<b>Cost incurred by the producer</b>			
(i)	Total cost incurred by the producer	86.22 (12.16)	86.51 (9.74)	83.03 (8.36)
(ii)	Producer sale price / consumer purchase price	709.52 (100.00)	683.96 (76.99)	666.98 (67.12)
<b>3.</b>	<b>Cost incurred by the retailer</b>			
(i)	Total cost incurred by the retailer		<b>50.35 (5.67)</b>	
(ii)	Retailer net margin		<b>154.07 (17.34)</b>	
(iii)	Retailer sale price / consumer purchase price		<b>888.37 (100.00)</b>	
<b>4.</b>	<b>Total cost incurred by the wholesaler</b>			
(i)	Total cost incurred by the wholesaler			<b>26.76 (2.69)</b>
(ii)	Wholesaler margin			<b>113.17 (11.39)</b>
(iii)	Wholesaler's sale price / retailer purchase price			<b>806.91 (81.20)</b>
<b>5.</b>	<b>Total cost incurred by the retailer</b>			
(i)	Total cost incurred by retailer			<b>59.16 (5.95)</b>
(ii)	Retailer margin			<b>127.65 (12.65)</b>
(iii)	Retailer sale price / consumer purchase price			<b>993.71 (100.00)</b>
<b>6.</b>	<b>Price spread</b>	<b>86.22 (12.16)</b>	<b>290.92 (32.75)</b>	<b>409.76 (41.24)</b>

**Marketing efficiency of potato:**

**Table 6. The marketing efficiency of potato under different marketing channels depicted in table**

Channels	Value of potato sold (Rs./qtl) (consumer's price)	Gross marketing margin (Rs./qtl) (Cost + margin)	Marketing efficiency (%)
<b>Producer - consumer</b>	709.52	86.22	7.23
<b>Producer - retailer- consumer</b>	888.37	290.92	2.05
<b>Producer - wholesaler- retailer- consumer</b>	993.71	409.76	1.43

Table 6 indicated that channel - I was found more efficient as compared to Channel - II because there was only one middleman existed and produces was sold directly to the wholesaler to retailer to consumer which resulted less marketing cost in Channel -I as compared to channel II as compared to channel III.

**Producer's share in customer's rupee, marketing costs and middlemen margins of potato under different channel:**

Table 7 showed producer's share in customer's rupee, (in per cent), marketing costs (Rs./qt.) and middlemen margins (Rs./qt.) of different marketing channel in potato marketing. The producer's share in customer's rupee was found maximum 87.24 per cent in channel-I followed by 67.25 per cent in channel-II respectively and 58.76 percent in channel III.

Maximum marketing costs per quintal were found & 168.95 in channel-III followed by 136.86 under channel- II.And 86.22 in channel I.

Middlemen margins were estimated 0.00, ₹ 154.07 and 240.82 per quintal under Channel-I , Channel-II and Channel -III respectively.

**Table 7. Producer's share in consumer's rupee, marketing cost, and middlemen margins of potato in different channels**

Particulars	Channel		
	I	II	III
<b>Producer's share in consumer's rupee (%)</b>	87.24	67.25	58.76
<b>Marketing cost (Rs. / qtl.)</b>	86.22	136.86	168.95
<b>Middlemen margins (Rs. / qtl.)</b>	0.00	154.07	240.82

**CONCLUSION**

The study revealed three major potato marketing channels viz, Producer - consumer, Producer - retailer - consumer, Producer - wholesaler - retailer - consumer. The marketing cost ze towards packing material

followed by transportation was high for 6 farmers while for other market players, weight loss and spoilage et were the major marketing cost. The marketing cost of channel III was as the highest. The study was conducted to examine the system of potato marketing and to analyse the cost, disposal pattern and prices of the different channels in marketing of potato from producers to consumers, rupee. Among all the size groups of farmers mostly preferred channel I for potato marketing as compared to channel III because, channel –I i.e. Producer – wholesaler – retailer – consumer has highest marketing efficiency. The marketing efficiency of potato under Channel – I (7.23%) was found more efficient as compared to Channel – III (1.43 %), due to the presence of middleman found in Channel –I.

The producer's share in customer's rupee was found maximum in potato i.e. 87.24 percent in Channel – I followed by 58.76 percent under Channel III.

On overall average, net price received by producer under channel – I, channel – II and channel – III were Rs. 623.30,597.45 and 583.95 per quintal. The highest net price received under Channel – I was because farmers sell their produce to the consumer via wholesaler in the local area. Gross marketing margins were found maximum with 41.24 % in channel – III as compared as to Channel – I where gross marketing margin was reduced to 12.16 %.

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