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Analysis of marketing cost, price spread and marketing efficiency of carrot in Bulandshahr district of U.P

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Abstract

A study of carrot marketing was conducted in Bulandshahr district of Uttar Pradesh and has been presented in the form of tabular analysis. To choose marketing functionaries such as primary and secondary market, a multi-stage stratified sampling approach was used. The market functionaries' study was taken into consideration in order to gather information on total marketing costs, marketing margins, price spread, marketing efficiency and producer share in consumer rupees as well as to find various marketing channels used in marketing of carrots. All these marketing aspects were computed using this data. Producer to consumer, producer-wholesaler-retailer-consumer and producer-pre harvest contractor/commission agent-wholesaler-retailer-consumer were the three marketing channels that were involved in the marketing of carrots. Channel III was used by highest number of growers and channel I was more profitable for farmers.

Keywords: Marketing channel, price spread, marketing cost, marketing margin and producer share in consumer rupees

Introduction

Carrot is a good source of carotenoids and it contain high amount of dietary fiber, vitamins, and minerals (Nicolle *et al.*, 2004) ^[11]. It consists of beta-carotene and an appreciable amount of thiamine (Vitamin B1) and Riboflavin (Vit B2) (da Silva Dias, 2014) ^[7]. Carrots can provide us a lot of vitamin A because they are high in carotenoids (van Het Hof, 2000). Carrots can add more to a person's diet than other vegetables. Researcher have also documented benefits for wound healing, cardiovascular and cholesterol disease reduction, anti-inflammatory, antibacterial, antifungal, antioxidant, and immune-enhancer properties of carrots (Silva Dias, 2014) ^[7]. Besides that, Carrot fleshy roots are used as salads, soups, and used in vegetable dishes (Amjad, 2005) ^[6]. China ranks first in carrot production in the world. India's cultivated area is 119,000 hectares and its production is 0.213 million tonnes. India ranks 14th in carrot production. (Agriculture statistics at a glance 2021-2022) Uttar Pradesh's carrot production is 178,970 tonnes and covers an area of 68,800 hectares. Among these, the largest area of carrot is Bulandshahr with production of 0.080 million tonnes spread over an area of 13,700 hectares, followed by Agra with a production of 0.043 million tonnes spread over an area of 4300 hectares (Ministry of Horticulture and Food Processing). Uttar Pradesh 2022-2023).

Materials and Methods

This study used multistage sampling to select districts, blocks, villages and participants. A total of 110 farmers were selected from 7 villages of Sikandrabad block of Bulandshahr district through random sampling technique. Cultivators are divided into four different groups based on land ownership. The first category was farmers with less than 1 hectare of land, the second category was small farmers with 1 to 2 hectares of land, the third category was medium-sized farmers with 2 to 10 hectares of land and fourth category was large-sized farmers with more than 10 hectares land. Qualitative interview techniques and preliminary interviews used to collect detailed information from growers about various aspects of the carrot marketing. The marketing functionaries from Naveen Sabzi mandi Bulandshahr and Azadpur Sabzi mandi, New Delhi were organized and out of which 10% market functionaries were selected randomly from each primary and secondary market. The observe regarding market functionaries was taken into consideration to gather data regarding total marketing cost, marketing margin, and to identify different marketing channels used in carrot marketing. With the help of this data price spread, total marketing cost, marketing margin, marketing efficiency and producer share in consumer's rupee was calculated. (Table 1).

Table 1: Selection of market functionaries

SI. No.	Market (Primary & Secondary)	Market Functionaries no.	Total
1	Naveen Sabzi mandi, Bulandshahr	Village Merchants	5
		Dealer/agents	12
		Retailers	7
2	Azadpur Sabzi mandi, New Delhi	Village Merchants	7
		Dealer/agents	11
		Retailers	13
3	Sunshine Vegetable Pvt. Ltd.	Pre-harvest Contractor	1
	Total		56

Analytical tools

Techniques such as arithmetic mean, tabular analysis and formulae were used to calculate different marketing concept like marketing cost, marketing efficiency, marketing margin, price spread and producer share in consumer’s rupee.

The marketing efficiency was calculated by using Acharya’s approach given by Acharya in 2011. This is the most common method used to measure marketing efficiency.

$$MME = \frac{FP}{MM+MC}$$

Where,

MME = modified measure of marketing efficiency.

FP = Net price received by producer.

MC = Total marketing cost.

MM = Total marketing margin.

Results and Discussion

The marketing channels were identified in Bulandshahr district.

Channel I: Producer-consumer.

Channel II: Producer-Wholesaler-Retailer-Consumer.

Channel III: Producer-pre harvest contractor/Commission Agent-Wholesaler-Retailer-Consumer.

Distribution of carrot in different marketing channels by sample respondents: Table 2 revealed that majority of growers sell their produce through channel III (81.9%) followed by channel II (10.9%) and channel I (7.2%). Growers do not have good marketing skills due to which they did not get better price for their produce that why they choose channel III to get better price.

Table 2: Distribution of carrot through different channels by sample respondents

SI. No.	Channels	Number of intermediaries involved	Number of farmers sold through this channel	Percentage
1	Channel I	Producer → Consumer	8	7.2
2	Channel II	Producer → Wholesaler → Retailer → Consumer	12	10.9
3	Channel III	Producer → Pre contractor/commission agent → Wholesaler → Retailer → Consumer	90	81.9
	Total		110	100

Marketing Cost incurred in channel I (1 Tonne)

Table 3 revealed that total marketing cost incurred in channel 1 was Rupee 1870 per tonne. In total marketing cost

major cost incurred in labour (42.78%) followed by spoilage (27.8%), packing material (24.06%) and transportation cost (5.35%).

Table 3: Marketing cost incurred in channel I (1 tonne)

SI. No.	Channel-I (8) Particulars	Rs/tonnes	Percentage
I	Producer to Consumer		
1	Labour	800	42.78
2	Packing material	450	24.06
3	Transportation	100	5.35
4	Spoilage	520	27.8
	Total Marketing Cost	1870	100

Marketing cost incurred in channel II (1 tonne)

Table 4 revealed that the total marketing cost incurred by producer in channel-II was Rs. 3000 per tonne (65.53%). Commission charge constituted 23.36% percent followed by labour charges (17.47%), Transportation (10.92%), packaging charges (7%), loading & unloading (4.36%) and other expenses (2.4%).

The marketing cost incurred by wholesaler in channel-II was Rs.733 per tonne (16.1%). Among various components spoilage cost constituted (3.82%) followed by market

charges (3.6%), personal expenses (2.4%), transportation (2.62%), loading and unloading (2.18%), labour charges (1.09%), license fee (0.17%), and shop rent (0.22%).

The total marketing cost incurred by the retailer in channel-II was Rs. 844 per tonne (18.55%). Spoilage constituted as major component (7.64%) followed by personal expenses (5.2%), loading and unloading (2.27%), transportation cost (1.97%) labour charges (0.99%), licence fee (0.28%) and shop rent (0.21%), respectively

Table 4: Marketing cost incurred in channel II (1 tonne)

Channel - II (12)			
SI. No.	Particulars	Rs/tonnes	Percentage
I	Producer/Sellers		
1	Labour Charges	800	17.47
2	Packing Charges	320	7
3	Transportation	500	10.92
4	Commission Charge	1070	23.36
5	Loading Unloading	200	4.36
6	Other expenses	110	2.4
	Sub total	3000	65.53
II	Wholesaler		
1	Shop rent	10	0.22
2	License Fee	8	0.17
3	Labour Salary	50	1.09
4	Transportation	120	2.62
5	Loading & unloading	100	2.18
6	Market Charge	160	3.6
7	Spoilage	175	3.82
8	Other Expenses	110	2.4
	Sub total	733	16.1
III	Retailer		
1	Shop rent	10	0.21
2	License Fee	9	0.28
3	Labour Salary	45	0.99
4	Transportation Cost	90	1.97
5	Loading & unloading	100	2.27
6	Spoilage	350	7.64
7	Other expenses	240	5.2
	Sub total	844	18.55
	Total Marketing Cost	4577	100

Marketing cost incurred in channel III (1 tonne)

Table 5 revealed that there was no marketing cost incurred by producer in channel III.

The cost incurred in the marketing of carrot by the Pre harvest contractor/commission Agent was Rs. 2600 per tonne (59.81%). Major of cost was commission charge (21.48%) followed by labour (17.30%), transportation (11.51%) packaging material (7.35%), loading and unloading (1.14%), other expenses (0.45%) and spoilage of the produce (0.22%), respectively.

The total marketing cost incurred by wholesaler in channel-III was Rs. 739 per tonne (16.99%). Among various components market charge constituted (4.71%), followed by transportation cost (3.45%), personal expenses (2.76%), spoilage (2.64%), loading and unloading (1.83%), labour charges (1.14%), license fee (0.2%), and shop rent (0.22%).

The total marketing cost incurred by retailer was Rs.1009 (23.2%). Among various components spoilage constituted major, which was 7.82 percent, followed by loading & unloading (6.9%) other expenses (4.82%), transportation cost (2.19%), labour charges (1.04%), shop rent (0.33%) and licence fee (0.2%), respectively.

Table 5: Marketing cost incurred in channel III (1 tonne)

Channel - III (90)			
SI. No.	Particulars	Rs/tonnes	Percentage
I	Producer/Seller		
	Sub total	0	0
II	Pre-Harvest Contractor/Commission agent		
1	Transportation	500	11.51
2	Packing material	320	7.35
3	Spoilage	10	0.22
4	Loading & unloading	50	1.14
5	Other expenses	20	0.45
6	Commission charge	950	21.84
7	Labour Charge	750	17.3
	Sub total	2600	59.81
III	Wholesaler		
1	Shop rent	10	0.22
2	License Fee	9	0.2
3	Labour salary	50	1.14
4	Market charges	205	4.71
5	Spoilage	115	2.64
6	Other expenses	120	2.76
7	Loading & unloading	80	1.83
8	Transportation	150	3.45
	Sub total	739	16.99
IV	Retailer		
1	Shop rent	10	0.23
2	License Fee	9	0.2
3	Labour salary	45	1.04
4	Transportation	95	2.19
5	Loading & unloading	300	6.9
6	Spoilage	340	7.82
7	Other expenses	210	4.82
	Sub total	1009	23.2
	Total Marketing cost	4348	100

Marketing margin, total marketing cost, marketing Efficiency and producer's share in consumer rupee in different marketing channels (1 tonne)

Table 6 revealed that marketing efficiency was highest in channel-I (3.81) followed by channel-III (0.81) and channel-II (0.74) because the net price received by growers in channel-I was highest and marketing cost is lower. There was a no marketing margin involved in channel-I because growers sold their produce directly to consumer. Total marketing cost in channel-I, channel-II and channel-III was 1870,4577,4348 per tonne respectively. Total marketing margin in channel-I, channel-II and channel-III was rupee 0, 1169 and 1152 per tonne respectively. Price spread was highest in channel-II (Rupee 5746 per tonne) followed by channel-III (Rupee 5500 per tonne) and channel-I (Rupee 1870 per tonne). The producer's share in consumer rupee was highest in channel-I (79.23%) because there were no intermediaries involved followed by channel-III (45%) and channel-II (42.90%).

Table 6: Marketing efficiency of carrot in Bulandshahr district

SI. No.	Particulars	Channel		
		I	II	III
1	Net price received by carrot grower	7130	4290	4500
2	Marketing cost incurred by carrot grower	1870	3000	0
3	Price paid by pre-harvest contractor/commission agent	-	-	4500
4	Marketing cost incurred by pre harvest contractor/commission agent	-	-	2600
5	Net margin of pre-harvest contractor/commission agent	-	-	220
6	Price paid by Wholesaler	-	7290	7320
7	Market cost Incurred by wholesaler	-	733	739
8	Net Margin of Wholesaler	-	385	151
9	Price paid by Retailer	-	8408	8210
10	Marketing cost incurred by retailer	-	844	1009
11	Net margin of retailer	-	748	781
12	Price paid by consumer	9000	10000	10000
13	Total marketing cost	1870	4577	4348
14	Total marketing margin	0	1169	1152
15	Price spread	1870	5746	5500
16	Marketing efficiency (Acharya's approach)	3.81	0.74	0.81
17	Producer's share in consumer's rupee (%)	79.23%	42.90%	45%

Conclusion

From the above, it has been concluded that most of the growers sell their produce by using channel-III (81.9). total marketing cost incurred was highest in channel-II (Rupee 4577 per tonne) because more intermediaries involved in channel-II. Marketing margin in channel-I was zero because farmers sold their produce directly to the consumers and in channel-II and channel-III marketing margin was rupee 1169, 1152 per tonne respectively. Price spread was highest for channel-II. In channel-I growers gained more profit because they sold their produce directly to consumers so producer's share in consumer rupee is also higher in channel-I as compared to channel-II and channel-III.

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