Major Constraints in Production and Marketing of Onion in Haryana

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Received on January 14, 2022, Accepted on March 22, 2022 and Published Online on April 01, 2022

ABSTRACT

Onion is an inevitable item in all Indian kitchens. As onion is an important and obligatory item of consumption basket, fluctuation in its prices will have great impact on food consumption pattern of the Indian consumers. The present study was conducted to identify the major constraints in the production and marketing of onion in Haryana. Ambala and Mewat districts were selected purposively based on the largest area under onion in the state. In total 200 onion growers were randomly selected for collecting the required information. Garrett's ranking technique was used to analyze the results. The study revealed that the high labour cost was the major constraint in the production of onion in Ambala district followed by high incidence of pest and disease and viability of seed. As regards to major constraints reported by the respondents during the marketing of onion were frequent price fluctuation, non-availability of storage facility and lack of awareness of BBY/government procurement (NAFED). Regarding the production of onion in Mewat district, major constraints observed were poor quality and inadequate underground water, high cost of onion seed, non availability of quality seed, etc. The study further found that the major constraints observed during the marketing of onion in Mewat district were distance market, non-availability of storage facility, high transportation cost. Adequate storage facility needs to be created enabling the producers to spread the sale throughout the year. Efforts may be made to supply quality seeds and also to safeguard the producers against the low prices during the peak season.

Key words: *Onion; production; marketing; constraints; Garrett; Ambala; Mewat.*

India has the advantage of varied agro-climatic conditions and vast geographical area which facilitate to grow a variety of fruits and vegetables. Vegetable's production in the country is 188284 thousand MT during the year 2019-20 which is around 58.77 per cent of the total horticultural production. Among all vegetables, onion is a popular vegetable in India, consumed by all class of people irrespective of whether poor or rich. It is an inevitable item in all Indian kitchens. Onion production in the country was 26091 thousand MT during the year 2019-20 which is almost 13.86 per cent of the total vegetable production in the country. The area under onion has increased from 0.45 million hectares in 2000-01 to 1.43 million hectares in 2019-20. As a result, production has increased from 4.7 million tonnes to 26.10 million tonnes (indiastat.com). It is widely grown mainly by small and marginal farmers. Onion is cultivated in all the seasons in different parts of country. It is grown for both, domestic consumption and international trade as well.

Among different states in the country, Maharashtra (10683 thousand MT) is the highest producer of onion with a share of 40.85 per cent followed by Madhya Pradesh (16.47%), Karnataka (8.70%), Gujarat (5.44%), Bihar (5.02%), Rajasthan (4.75%) and Andhra Pradesh (3.75%). Haryana with a production of 610.44 thousand MT, ranks 8th in the production of onion in India (Indiastat.com, 2019-20). Mewat (23.47%) and Ambala (11.33%) are two largest onion producing districts followed by Sonipat (7.5%), Jhajjar (7.3%) and Panchkula (7.2%).

Onion has advantage of less perishability as it can tolerate rough handling and long distance shipments compared to the other vegetables. Unlike other vegetables it can be stored by ordinary methods for considerable period even under the unfavorable weather conditions, so that it can be later disposed off when the prices become favorable. It has a longer disposal period in the market. Thus, if marketing and storage is done, better prices can be fetched at some later period. But majority of the farmers tries to sell their produce immediately after harvest in the fear of spoilage, improper storage facility and fall in future prices. As a result, the wholesaler or commission agent takes the advantage of glut period and purchase the produce at very lower prices. As soon as this period passes, there starts the rapid increase in prices which leads to the dissatisfaction in both producer and consumer. Moreover, the information on losses and storage is not well predicted by market intelligence.

The major issues in existing marketing supply chain of fresh vegetables in India are high marketing cost, high marketing loss, low marketing efficiency and producer's share in consumer's price as well as high consumer price. The marketing cost, marketing loss and marketing efficiency of fresh vegetable in India is largely affected by the poor infrastructure and lack of linkages between producers and intermediaries in the supply chain. The marketing efficiency of fresh vegetables is also affected by the substantial amount of wastage, deterioration in quality, mismatch in supply and demand and fluctuation in price. High perishability, seasonal in nature and bulkiness make the marketing of fresh vegetables extremely complex. With the above backdrop, the present study has been undertaken to study the major constraints faced in production and marketing by the onion growers in Ambala district of Haryana

METHODOLOGY

Present study was conducted in two districts of Haryana i.e. Mewat and Ambala as these districts had the highest area under onion. From each selected district two blocks namely Shahjadpur and Narayangarh from Ambala district and Nagina and Firozpur Jhirka from Mewat district were selected purposively because of highest area under onion in respective districts. From each selected block, fifty onion growers were selected at random. Thus, in total 200 onion growers were randomly selected and personally interviewed on a well structured

and pre-tested survey schedule specifically designed for the purpose for collecting the required information during the year 2019-20.

The sample farmers were divided into three size groups, namely small, medium and large sized farmers as per the operational land holding. A cumulative total of the operational holdings was taken and divided into three parts. Respondents belonging to first part was categorized as small, second part as middle and third part as large. By this division, farmers with operational land holding up to 8 acres fall under the small category in Ambala district and farmers with operational land holding up to 5 acres fall in same category in Mewat district. Similarly, farmers with land holding more than 8 acres and up to 15 acres fall under medium sized and farmers with more than 15 acres fall under the large sized farmers' category in Ambala district, farmers with operational land more than 5 acres and up to 8 acres fall in medium sized and more than 8 acres fall in to large sized farmers' category in Mewat district.

Garrett' ranking technique : To find out major constraints faced by the sample onion growers in production and marketing, Garret Ranking technique was used (*Garret and Woodworth, 1969*). The order of the merit given by the respondents was changed into ranks by using the formula:

$$\text{Percent position} = \frac{100\left(R_{ij} - 0.50\right)}{N_j}$$

Where,
R_{ij} = Rank given for i[th] item by j[th] individual
N_j = Number of items ranked by j[th] individual

The percent position of each rank was converted to scores by referring to tables given *by Garret and Woodworth (1969)*. Then for each factor, the scores of individual respondents were summed up and divided by the total number of respondents for whom scores were gathered. The garrett values for all the factors were ranked, following the decision criterion that lower the value the more important or severe is the constraint to respondents.

RESULTS AND DISCUSSION

Constraints faced by onion growers related to production in Ambala district : Table 1 presents constraints faced by onion growers during production. The data revealed that for all the sample farmers taken together i.e. at overall

level, high labour cost was the major problem with garrett value of 69.80 and was ranked first. High incidence of pest and disease was the second next problem with garrett value of 65.44 followed by viability of seed with garrett value of 59.95 (rank 3rd), labour scarcity during peak time with garrett value of 59.34 (rank 4th), unstable yield of onion with garrett value of 55.95 (rank 5th), etc. Input supply centre is far away was reported as the least important constraint with rank 14 (garrett value 25.93) followed by erratic electricity supply with garrett value of 31.47 (rank 13th). Farm size category-wise analysis of Garrett score indicated that ranking/ severity of constraints faced by the sample farmers was almost same as optioned by all the three categories of sample onion growers except in case of few constraints. For example, high labour cost and high incidence pest and disease were the first and second major problems reported by all the three categories of farmers. Similarly, all the three categories of farmers were of the view that input supply centre is far away (rank 14th) and erratic electricity supply (rank 13th) is the least important constraints in production of onion. Labour scarcity during peak time was ranked 3rd problem by small and large sized farms whereas for medium size farms, it was 4th major problem. Viability of seed was 4th problem in case of small and large sized farmers whereas, as per medium sized farmers, this problem was third major

problem. These findings are supported by *Selvakumar (2006), Grema (2015)* and *Shukla (2018).*

Constraints faced by onion growers related to marketing in Ambala district : Constraints faced by the growers in marketing of onion are presented in Table 2. The information in the Table 2 indicated the most important marketing problem faced by the onion growers was frequent price fluctuation with garrett value of 68.87 and was assigned first rank. Non-availability of storage facility was another problem faced by onion farmers with garrett value of 65.00 and this problem was given second rank. The third rank was given to lack of awareness of BBY/government procurement (NAFED) with garrett value of 60.53 followed by lack of awareness of new technologies (garrett value 58.48), quality deterioration during storage (garrett value 58.36), lack of information about government scheme and subsidies (garrett value 57.71), etc. which were assigned fourth, fifth, sixth, respectively. Poor road network for transportation was the least important marketing problem as it was ranked last i.e. 14th rank with garrett value 28.21 followed by delay in sale and payment with garrett value 29.89 (rank 13th). Similar to constraints faced by the sample farmers in production of onion, farm size category-wise analysis of Garratt score indicated that ranking/severity of constraints faced by the sample farmers was almost

Table 1. Constraints in production of onion in Ambala district

Particulars	Garrett Value (Rank)			
	Small	Medium	Large	Overall
Labour scarcity during peak time	60.65(3)	55.46(6)	60.93(3)	59.34(4)
Erratic supply of electricity	31.17(13)	32.85(13)	30.21(13)	31.47(13)
High labour cost	68.25(1)	71.00(1)	74.21(1)	69.80(1)
Poor quality and inadequate underground water	51.13(9)	49.54(9)	53.43(8)	51.04(9)
Unstable yield of onion	56.07(5)	56.50(5)	54.43(6)	55.95(5)
Lower productivity of onion	51.85(8)	57.27(4)	46.43(10)	52.50(8)
High cost of onion seed	55.87(6)	51.58(7)	55.86(5)	54.75(6)
High cost of fertilizer	47.42(10)	48.81(10)	50.79(9)	48.25(10)
Inadequate credit supply by financial institution	34.80(12)	38.85(11)	31.79(12)	35.43(12)
High incidence pest and disease	65.80(2)	63.35(2)	67.79(2)	65.44(2)
Non availability of quality seed	54.68(7)	50.65(8)	53.71(7)	53.50(7)
Input supply centre is far away	24.53(14)	28.27(14)	27.57(14)	25.93(14)
Non availability of recommended pesticide	38.20(11)	34.50(12)	36.00(11)	36.93(11)
Viability of seed	59.58(4)	61.62(3)	58.43(4)	59.95(3)

same as optioned by all the three categories of onion growers except in case of few constraints. Constraints relating to fluctuation in the market prices, non-availability of storage facility, high transportation cost and distance market were ranked 1st, 2nd, 11th and 12th by all the three categories of sample farmers, respectively. Lack of awareness of new technologies was assigned 3rd rank by small category of farmers whereas medium and large size categories of farmers assigned 3rd rank to lack of awareness of BBY/government procurement (NAFED) problem.

Constraints faced by onion growers in production in Mewat district : Constraints faced by onion growers in production in Mewat district are presented in Table 3. The data revealed that for all the sample farmers taken together i.e. at overall level, poor quality and inadequate underground water was the major problem with garrett value of 80.63 and was ranked first. High cost of onion seed was the second next problem with garrett value of 70.86, followed by non-availability of quality seed

with garrett value of 59.27 (rank 3rd), unstable yield of onion with garrett value of 58.50 (rank 4th), high cost of fertilizer with garrett value of 54.56 (rank 5th), etc.

Input supply centre is far away was reported as the least important constraint with rank 14 (garrett value 22.21) followed by labour scarcity during peak time with garrett value of 34.20 (rank 13th), high labour cost with garrett value of 34.64 (rank 12th), etc. Farm size category-wise analysis of Garrett score indicate that ranking/severity of constraints faced by the sample farmers was almost same as optioned by all the three categories of onion growers except in case of few constraints. Constraint on poor quality and inadequate underground water, high cost of onion seed, inadequate credit supply by financial institution and distant input supply centers were ranked 1st, 2nd, 8th and 14th by all the three categories of sample farmers, respectively. Non availability of quality seed was ranked 3rd major constraint by small and medium farmers whereas large farmers assigned 4th rank to this constraint. Small and

Table 2. Constraints in marketing of onion in Ambala district

Particulars	Garrett Value (Rank)			
	Small	Medium	Large	Overall
Frequent price fluctuation	68.98(1)	68.96(1)	68.21(1)	68.87(1)
High transportation cost	41.07(11)	41.50(11)	43.64(11)	41.54(11)
Lack of awareness of BBY /government procurement (NAFED)	59.62(4)	62.08(3)	61.57(3)	60.53(3)
Non-availability of storage facility	64.93(2)	65.46(2)	64.43(2)	65.00(2)
Collusion among traders/trade malpractices	45.62(9)	42.88(10)	49.50(9)	45.45(10)
Lack of market infrastructure	51.58(8)	53.62(7)	51.29(8)	52.07(8)
Distance market	35.18(12)	34.15(12)	37.71(12)	35.27(12)
Lack of availability of market information	54.23(7)	48.46(9)	55.93(5)	52.97(7)
Labour problem for grading and packing	44.03(10)	49.19(8)	46.00(10)	45.65(9)
Quality deterioration during storage	56.78(6)	61.96(4)	58.43(4)	58.36(5)
Poor road network for transportation	29.92(13)	26.00(14)	25.00(14)	28.21(14)
Delay in sale and payment	29.35(14)	31.00(13)	30.14(13)	29.89(13)
Lack of information about government schemes and subsidies	58.98(5)	57.62(5)	52.43(7)	57.71(6)
Lack of awareness of new technologies	59.72(3)	57.12(6)	52.43(6)	58.48(4)

Table 3. Constraints in production of onion in Mewat district

Particulars	Garrett Value (Rank)			
	Small	Medium	Large	Overall
Labour scarcity during peak time	34.72(12)	33.63(13)	32.58(13)	34.20(13)
Erratic supply of electricity	45.31(9)	44.58(9)	45.00(9)	45.69(9)
High labour cost	34.61(13)	34.92(11)	34.25(12)	34.64(12)
Poor quality and inadequate underground water	79.80(1)	82.75(1)	80.83(1)	80.63(1)
Unstable yield of onion	59.05(4)	62.63(4)	69.25(3)	58.50(4)
Lower productivity of onion	51.47(7)	47.38(7)	51.58(6)	53.85(7)
High cost of onion seed	70.22(2)	72.96(2)	70.08(2)	70.86(2)
High cost of fertilizer	59.03(5)	54.71(6)	48.67(7)	54.56(5)
Inadequate credit supply by financial institution	50.77(8)	45.04(8)	48.33(8)	49.66(8)
High incidence pest and disease	44.92(10)	34.96(10)	42.08(10)	45.21(10)
Non availability of quality seed	59.67(3)	64.29(3)	66.25(4)	59.27(3)
Input supply centre is far away	21.38(14)	26.04(14)	19.00(14)	22.21(14)
Non availability of recommended pesticide	36.30(11)	34.79(12)	40.08(11)	36.39(11)
Viability of seed	52.77(6)	61.96(5)	52.00(5)	54.48(6)

medium farmers assigned 4th rank to high cost of fertilizer whereas this problem was the 3rd major constraint as reported by the large farmers. The current findings are analogous to the results of *Raut (2002), Shekhawat (2011)* and *Kaur (2017).*

Constraints faced by onion growers in marketing in Mewat district : Constraints faced by the growers in marketing of onion in Mewat district are presented in Table 4. The information in Table 4 indicated the most important marketing problem faced by the onion growers was distance market with garrett value of 76.69 and was assigned first rank. Non-availability of storage facility was another problem faced by onion farmers with garrett value of 69.65 and this problem was given second rank. The third rank was given to high transportation cost with garrett value of 67.86 followed by quality deterioration during storage (garrett value 58.69, rank 4), lack of awareness of new technologies (garrett value 57.69, rank 5), lack of awareness of BBY/government procurement (NAFED) (garrett value 54.18, rank 6), etc. Poor road network for transportation was the least important marketing problem as it was ranked last i.e. 14th rank with garrett value 20.08 followed by delay in sale and payment with garrett value 27.65 (rank 13th). Similar to constraints faced by the sample farmers in production of onion, farm size category-wise analysis of Garratt score indicated that ranking/severity of constraints faced by the sample farmers was almost same as optioned by all the three categories of onion growers except in case of few constraints. High transportation cost was ranked 2nd

by medium and large farmers whereas it was ranked 3rd by small farmers. Quality deterioration during storage was ranked 4th by small farmer whereas it was ranked 5th by medium and large farmers. Constraint relating to lack of awareness of new technologies was given rank 5th by small size farmers whereas this problem was assigned 4rd rank by medium and large size farmers. Constraints on distance market, lack of awareness of BBY/government procurement (NAFED), frequent price fluctuation, lack of availability of market information, poor road network for transportation were ranked 1st, 6nd, 9th, 12th and 14th by all the three categories of sample farmers, respectively. These findings are in conformity with the results obtained by *Shekhawat (2012)* and *Barker (2019).*

CONCLUSION

Onion forms an important part of diet of every household but its production and marketing involves a lot of problems. It was found that high labour cost was the major constraint in the production of onion. Scarcity of the labour during peak time may be the most common reason for high labour cost. Frequent fluctuation in prices was the most common constraint during marketing of onion in Ambala district followed by non-availability of storage facility and lack of awareness of BBY/govt. procurement. To overcome the constraint of price fluctuation, government must come up with a price stabilization scheme and also an eye should be kept on import and export quantity of onion which is main reason for price fluctuation. Poor quality and inadequate

Table 4. Constraints in marketing of onion in Mewat district

Particulars	Garrett Value (Rank)			
	Small	Medium	Large	Overall
Frequent price fluctuation	46.61(9)	44.75(9)	42.00(9)	44.06(9)
High transportation cost	66.91(3)	69.17(2)	70.33(2)	67.86(3)
Lack of awareness of BBY/government procurement (NAFED)	54.44(6)	56.96(6)	57.08(6)	54.18(6)
Non-availability of storage facility	69.58(2)	67.08(3)	69.50(3)	69.65(2)
Collusion among traders/trade malpractices	44.81(10)	38.71(10)	40.75(10)	44.05(10)
Lack of market infrastructure	47.56(8)	46.83(8)	51.67(7)	45.95(8)
Distance market	78.25(1)	76.13(1)	75.17(1)	76.69(1)
Lack of availability of market information	34.56(12)	38.21(12)	35.58(12)	36.30(12)
Labour problem for grading and packing	44.00(11)	38.29(11)	38.42(11)	43.51(11)
Quality deterioration during storage	58.81(4)	58.83(5)	57.75(5)	58.69(4)
Poor road network for transportation	20.00(14)	18.92(14)	22.83(14)	20.08(14)
Delay in sale and payment	26.66(13)	29.25(13)	29.75(13)	27.65(13)
Lack of information about government schemes and subsidies	53.05(7)	51.17(7)	50.17(8)	53.64(7)
Lack of awareness of new technologies	54.77(5)	65.71(4)	59.00(4)	57.69(5)

underground water were the major problem observed by sample onion growers of Mewat district followed by high cost of onion seed. Most important marketing problem faced by the onion growers was distance market followed by non-availability of storage facility. A local market needs to be established near to Mewat region so as to avoid the wastage of time and final produce and also to ease the sale of the produce.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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