RELATIONSHIP BETWEEN ARRIVALS AND PRICES OF ONION IN MADHYA PRADESH

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Abstract

To analyze relationship between arrivals and prices of onion in Madhya Pradesh, average market arrivals, model prices and retail prices in different months from 2012-13 to 2017-18 have been collected from major onion Markets viz. Dewas, Indore, Sagar, Bhopal, Gwalior, Rewa, Jabalpur and Shajapur. It is observed from the data that April, May, June, July and November were found to be peak period of arrivals of onion in the market. In peak period, 96 per cent more than the average arrivals of onion in a year were observed, June (314 %) followed by May (107%), April (45%), November (7%) and July (5%) were found to be major months of arrival of onion in the market. August, September, October, December, January, February and March were found to be lean period of onion arrivals in the State. In these months of mean market arrivals of onion were observed to be 20 per cent less than the mean arrival of onion in a year in the State. As regards to mean model and retail price of the onion in different months of the year, the it was found to be Rs. 879/q and Rs. 1893/q showing 115 per cent higher retail price as compared to model price, which was observed 121 and 116 per cent high during peak and lean periods, respectively. During peak period, the model and retail price were found to be 21 and 19 per cent lower than average model and retail price, while during the lean period these were found to be higher by 6 and 4 per cent than the average model and retail price, respectively. The inverse relationship between arrivals and prices of onion was found in the markets except in the months of December, January, February and March. Hence, there is possibility to improve the price stability, through adoption of proper storage. Hence, there is possibility to improve the price stability, through adoption of proper storage facilities, suitable verities of seeds, proper plantation methods, post-harvest practices etc.

Keywords: *Relationship, Arrivals and Prices, Onion*

Introduction

India is the second largest onion growing country in the world. Indian onions are famous for their pungency and are available round the year. The Major Onion producing states area Maharashtra, Karnataka, Madhya Pradesh, Gujarat, Bihar, Andhra Pradesh, Rajasthan, Haryana and Tamil Nadu. Maharashtra ranks first in Onion production with a share of 27.72%. Madhya Pradesh is the second largest onion producing state and accounting for 15.0% of total production of onion in the country. Madhya Pradesh is producing about 2.80 m MT of onion from an area of 0.12 m MT with the productivity of 24.1 t/ha. which is second highest among the onion producing states in the country. The major onion producing belts in the state are Mandsaur, Neemuch, Ratlam, Shajapur, Agar, Dewas, Indore, Dhar, Rajgarh, Ujjain, Sehore, Bhopal, Khandwa, Khargone etc. Recommended varieties of onion in the State are Pusa-White Flat, White Round, Madhvi, Ratnar, Agrifound-Dark Red, Light Red, NHRDF-Red, Agrifound White, Maharashtra N-53, Phule-Samarth, Survarna, Safed, Hissar-2, Bhima Red and Bhima, Shakti, Shweta. During 2013-14, 6.69 lakh MT of onion have been traded in organized markets with average price of Rs. 7.76/ Kg.

The cultivators of Madhya Pradesh cultivate onion in 138879 ha of land and produces 3276906 t of onion with the average yield of 23.5 t/ha. Indore (17.83%) followed by Shajapur (12.54%), Sagar (12.01%), Dewas (11.32%), Khandwa (9.59%), Ujjain (6.60%), Shivpuri (5.78%), Rewa (5.65%), Ratlam (5.42%), Agar Malwa (5.06%), Rajgarh (4.44%) and Satna (3.76%) contributed 68.40 per cent of total production of onion in the State. This indicates that the production of onion concentrates in western along with Shivpuri in North, Sagar in Central and Rewa and Satna in the eastern parts of the State. The other districts of the State contribute only 31.60 per cent of onion production. (Anonymous, 2018) The average yield of onion was found to be 24 and 23 t/ha in major and other onion producing districts of Madhya Pradesh, respectively. In major producing districts, the yield of onion was found to be highest in Indore (30.2 t/ha) followed by Dewas (29.5 t/ha), Sagar (28.0 t/ha), Agar Malwa (27.1 t/ha), Rewa (25.8 t/ha), Khandwa (24.7 t/ha) and Shivpuri (24.0 t/ha) in the State. (Anonymous, 2018) The per capita production of onion in Madhya Pradesh was found to be 17.88 kg with of total production of 1298.4 lakh tons in the year 2011-12.

The arrivals of onion were found to be more in January and March in different markets of Maharashtra, whereas prices showed an upward trend from the month of June and continued to rise up to November, after which price decline. (Sangeeta, 2004) There was seasonality in arrivals and price of all the major vegetables produced which indicated the need for storage facilities. The inverse relationship was observed between prices and arrivals of most of the vegetables. Arrivals and prices of major vegetables have increased over the period in most of the regulated market showing the scope for expansion of vegetable cultivation. (Khunt et al., 2006)

There is a presence of seasonality within a year and seasonal pattern does not change over years in the market except in onion prices. (Kumar et al., 2009) There was also found high variability in the arrival of onion in the month of March and April in onion markets. Among the markets, the coefficient of variation in both arrivals and prices were found to be higher. There was also found high integration among the selected markets except Ahmedabad with Mumbai market because of the movement of produce from one market area to another depending upon price prevailed in the markets. The competitive conditions prevailing in the markets might have influenced the movement of prices in the same direction. (Reddy et al., 2012)

The highest seasonal indices of market arrivals of onion were noticed immediately after harvest i.e. October to December in all markets. Later on, the arrivals were found to be tapering off during January to September. This pattern of variation in arrivals may be categorically due to seasonality in production. There were more fluctuations been observed in prices of onion which may be due to nature of arrivals to the market. Seasonal indices were also observed during the month of September to January during which the arrivals were found to be low. Which showed that there exists a lower price at time of higher arrivals in the market and vice-versa. Hence arrivals and prices should be maintained in such a way that both the variables would benefit the producer as well as consumers. (Jallikatti et al., 2013)

There was also observed sudden increase in the onion prices during 1999, 2000 and 2011 due to alternate decrease in production and inadequate storage facilities. The forecasted price values revealed an increasing trend in the next ensuing years. Hence, farmers need to plan the production process in such a way that a good price for the produce would be expected. (Jallikatti et al., 2014)

Looking to the above facts in mind, this present study has been carried by AER Centre Jabalpur to analyze relationship between

arrivals and prices of onion in different months during 2012-13 to 2017-18 in Madhya Pradesh.

Materials and Methods

The study is confined to Madhya Pradesh keeping in view two productions (Indore, Sagar) and consumption (Bhopal, Jabalpur) regulated markets were selected on the basis of highest production and arrival.

Fig.1: Concentration of Onion production in different districts of Madhya Pradesh

The Secondary data were collected from State Horticulture Departments/National Horticulture Board; NHRDF; State Agricultural Marketing Boards/Depts.; Directorate of Marketing and Inspection; AGMARKNET; NAFED, etc. Suitable statistical tools such as average, percentage etc. were used to analyze the data to drown valuable conclusion.

Results and Discussion

Average market arrivals, model prices and retail prices of onion in different months from 2012-13 to 2017-18 have been analyzed considering all major onion market of Dewas, Indore, Sagar, Bhopal, Gwalior, Rewa, Jabalpur and Shajapur. Further, month wise analysis was carried out in lean (below than mean arrivals) and peak (above than mean arrivals) periods of arrivals of onion in these markets and presented in Table 1. It is observed from the data that April, May, June, July and November were found to be peak month of arrivals of Onion in the market whereas August, September, October, December, January, February and March were lean period of Onion. The 64 and 36 per cent of total arrivals of onion was found to be arrived during peak and lean period, respectively.

In peak period, more than 96 per cent to the average arrivals of onion in a year was found to be observed in the market. June (314 %) followed by May (107%), April (45%), November (7%) and July (5%) were found to be major months of arrival of onion in the market. In lean period of onion arrivals 20 per cent less than the mean arrival of onion in a year arrived in the State.

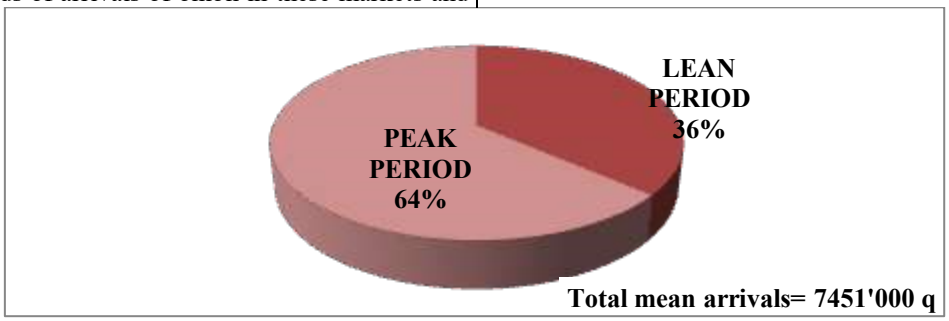

Fig. 2: Market Arrival of Onion in peak and Lean Period

As regards to mean model and retail price of the onion in different months of the year, the it was found to be Rs. 879/q and Rs. 1893/q showing 115 per cent higher retail price as compared to model price, which was observed 121 and 116 per cent high during peak and lean periods, respectively. During peak period, the model and retail price were found to be 21 and 19 per cent lower than average model and retail price, while during the lean period these were found to be higher by 6 and 4 per cent than the average model and retail price, respectively. This indicates inverse relationship between arrivals and prices of onion in the market except in the months of December, January, February and March (Fig. 3).

It can be concluded from the above findings that during peak period, the model and retail price were found to be 21 and 19 per cent lower than average model and retail price, while during the lean period these were found to be higher by 6 and 4 per cent than the average model and retail price, respectively. This indicates inverse relationship between arrivals and prices of onion in the market except in the months of December, January, February and March.

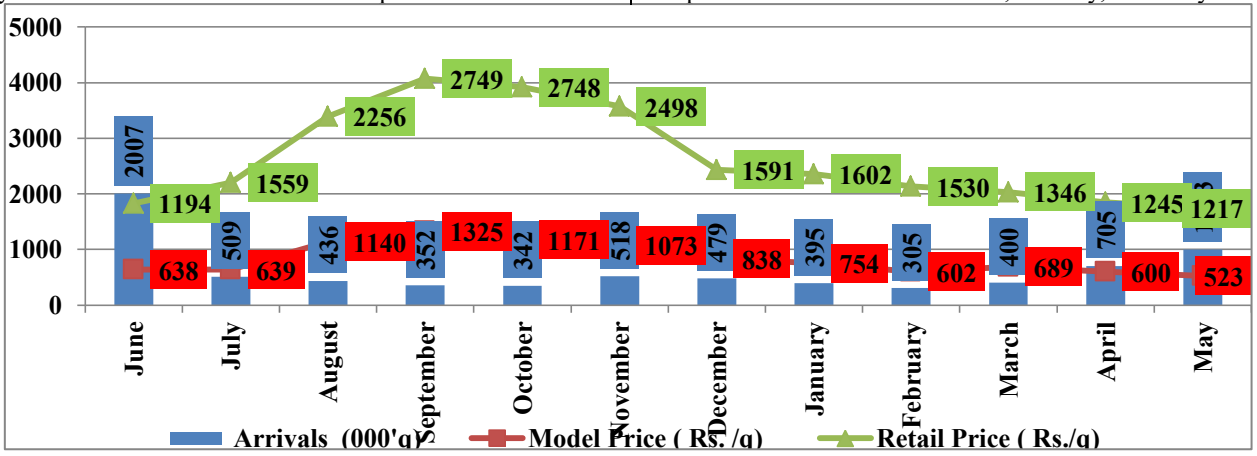

Fig.3: Market Arrivals, Model and Retail Price of Onion in different months of a year in M.P.

There was seasonality in arrivals and price indicated the need for storage facilities. The inverse relationship was observed between prices and arrivals. Arrivals and prices have increased over the period in the regulated market showing the scope for expansion of vegetable cultivation. The proper storage facilities of onion require a rack or stepped type storage for proper ventilation. The present storage capacities are quite inadequate and most of the available units are traditional and unscientific in Madhya Pradesh. Hence, there is possibility to improve the price stability, through adoption of proper storage facilities, suitable verities of seeds, proper plantation methods, post-harvest practices etc.

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Table 1: Market Arrivals, Model and Retail Price of Onion in M.P.

Particulars		Arrivals (000'q)			Model Price (Rs./q)			Retail Price (Rs./q)			**Diff. bet. model price and Retail Price (Rs./q)**	Per cent Diff.
		000 'q	Diffe. with mean	% age diff. with mean	**Rs./q**	Diff. with mean	% age diff. with mean	**Rs./q**	Diffe with mean	% age diff. with mean		
LEAN PERIOD	**Aug**	436	-49	-10	1140	261	30	2256	363	19	1116	98
	Sept	352	-133	-27	1325	446	51	2749	856	45	1424	107
	Oct	342	-143	-29	1171	292	33	2748	855	45	1577	135
	Dec	479	-6	-1	838	-41	-5	1591	-302	-16	752	90
	Jan	395	-90	-19	754	-125	-14	1602	-291	-15	848	112
	Feb	305	-180	-37	602	-277	-32	1530	-363	-19	928	154
	Mar	400	-85	-18	689	-190	-22	1346	-547	-29	657	95
Mean of lean period		**387**	**-98**	**-20**	**931**	**52**	**6**	**1975**	**82**	**4**	**1043**	**116**
PEAK PERIOD	**Apr.**	705	220	45	600	-279	-32	1245	-648	-34	644	107
	May	1003	518	107	523	-356	-41	1217	-676	-36	694	133
	Jun.	2007	1522	314	638	-241	-27	1194	-699	-37	556	87
	Jul.	509	24	5	639	-240	-27	1559	-334	-18	920	144
	November	518	33	7	1073	194	22	2498	605	32	1425	133
Mean of peak period		**948**	**463**	**96**	**695**	**-184**	**-21**	**1543**	**-350**	**-19**	**848**	**121**
Mean of MP.		485	0	0	879	0	0	1893	0	0	1014	115

Source : Directorate of Horticulture, Madhya Pradesh Bhopal