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Analysis of arrivals and prices of red chilli in Maharashtra

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Abstract

Chilli is the extensively used and most inclusive spice of Indian food culture. Maharashtra is the important chilli growing state in India, contributing 6 per cent of total area under chilli production. Recently in the year 2024 Maharashtra government has planned to create 200 acre food processing Park for Chilli. The arrivals of chilli in major markets of Maharashtra are remarkable. However, the fluctuations in arrivals and prices of red chilli were noticed in APMCs market. The present study has been undertaken to analyse arrivals and prices of Red chilli in major markets of Maharashtra based on seasonal and cyclical indices during period of 2005-2024. This seasonal fluctuation in arrivals and prices are studied by twelve month moving average method. It reveals that December, January, February, March, April is the peak arrivals in all the selected markets. The highest arrivals 324.55 were recorded in Mumbai market in the month of March as followed by Nagpur 265.85, Sangli 185.59 and Nandurbar 167.54 as indicated seasonal indices. On other hand the highest prices were observed during October to March in all the selected market respectively. The study also revealed a well defined cycle could not be observed in the case of arrivals and prices in selected markets of Maharashtra.

Keywords: Red chilli, seasonal variation, cyclical variation, arrivals and prices

Introduction

Chilli is a globally significant spice consumed in various forms. India is the world's leading producer, consumer, and exporter of chilli, followed by countries like China, Thailand, Ethiopia, and Indonesia. Indian chilli is renowned internationally for its distinctive colour and pungency. It accounts for approximately 42 per cent of India's total spice export value, with major export destinations including China, Sri Lanka, Malaysia, Bangladesh, Singapore, Thailand, and the UAE.

The major chilli producing states in India are Andhra Pradesh (49.57%), Karnataka (15%), Maharashtra (6%), Tamil Nadu (3%), which constitutes nearly 75 per cent of the total area under chilli. The price fluctuations in agricultural commodities are a common phenomenon due to their seasonal nature of production, wide ecological imbalances compared to other crops. These subsequently lead to larger variation in market arrivals. The stable marketing prices play an important role in determining farm income. One of the primary factors contributing to price volatility is the seasonal nature of agricultural production. Typically, prices hit their lowest levels during peak arrival periods and behaviour to increase as market arrivals decline. Such fluctuations in chilli prices create significant income uncertainty for farmers. Therefore, analysing trends in prices and arrivals over time is essential for developing an effective agricultural price policy. A thorough understanding of price dynamics both temporally and spatially can help identify strategies to minimize price volatility in agricultural commodities. These insights are particularly valuable for farmers, enabling them in finding

the most advantageous time to market their produce to their best advantages (Devi *et al.*, 2016) ^[1]. Based on economic importance, present study is focussed on analysis of arrivals and market prices of chilli in major markets of Maharashtra.

Materials and Methods

The present study is based on secondary data on arrivals and prices of red chilli collected from major APMCs of Maharashtra. The major APMCs selected based on their highest arrivals, the selected markets are Nandurbar, Nagpur, Mumbai and Sangli. The data pertaining to the prices and arrivals of red chilli were collected from agricultural produce market committee (APMCs) of the respective districts for period of 20 years from 2005-2024.

Analysis of Data

To study the seasonal and cyclical variations of arrivals and prices of red chilli twelve month moving average method (Ahire DB, *et al.*, 2024) ^[4] and residual method used respectively. Thus, this variations are worked out for the data which recorded monthly seasonal and cyclical variations.

Results and Discussion

It is observed from the table 1, and figure 1 that, the highest arrivals were recorded from the month of December to April in all the selected APMCs, and lean arrivals in the month of May to November. The peak arrivals were observed in the month of March in Mumbai (324.55) followed by Nagpur (265.85), Sangli (185.59) and Nandurbar (167.54). The results of the present findings are in close conformity with

the results reported by (Ramesh *et al.*, 2020)^[3] for the study of Analysis of Arrivals and Prices of Red chili in Gunturu Markets of Andhra Pradesh.

Table 1: Seasonal indices for Arrivals of Red chilli in Maharashtra

Month	Nandurbar	Nagpur	Mumbai	Sangli
Jan	156.38	186.36	159.67	156.25
Feb	162.37	195.98	185.78	178.65
Mar	167.54	265.85	324.55	185.59
Apr	153.3	105.92	225.96	108.24
May	58.56	78.94	55.12	63.32
Jun	69.67	68.52	88.25	75.32
Jul	82.69	85.37	75.32	81.75
Aug	75.67	88.23	79.62	69.51
Sep	86.52	81.25	65.41	81.24
Oct	79.85	72.31	81.28	70.41
Nov	79.92	75.32	88.21	87.52
Dec	104.9	99.85	108.2	105.2

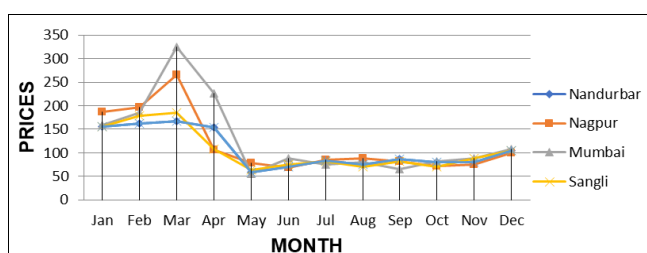


Fig 1: Seasonal indices for Red chilli arrivals

Table 2: Seasonal indices for Red chilli prices in Maharashtra

Month	Nandurbar	Nagpur	Mumbai	Sangli
Jan	98.10	98.10	103.20	100.64
Feb	103.02	103.02	105.33	100.55
Mar	105.28	102.31	105.35	104.59
Apr	99.19	99.19	102.02	99.00
May	98.64	98.64	89.30	95.04
Jun	99.25	98.25	99.29	99.44
Jul	93.20	95.20	89.78	95.54
Aug	97.15	97.15	99.09	95.28
Sep	93.95	93.95	97.93	99.89
Oct	99.70	98.70	102.64	104.21
Nov	100.71	100.71	103.04	103.55
Dec	102.80	102.80	103.02	102.26

It is seen from the table 2 and figure 2, that the seasonal indices for prices being highest in October to March in selected markets of Maharashtra. The market of Nandurbar (105.28), Nagpur (102.31), Mumbai (105.35) and Sangli (104.59). The results of the present findings are in close conformity with the results reported by (Ramesh *et al.*, 2020)^[3].

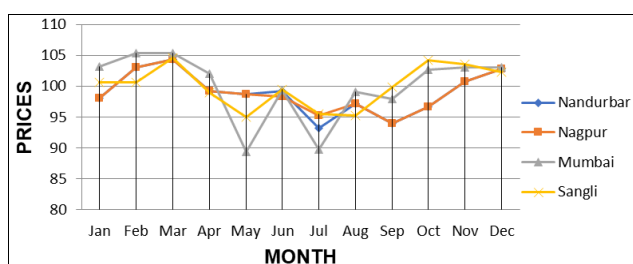


Fig 2: Seasonal indices for Red chilli prices

Table 3: Cyclical indices for Red chilli arrivals in Maharashtra

Year	Nandurbar	Nagpur	Mumbai	Sangli
2005	50.89	116.74	40.74	62.48
2006	91.67	103.45	157.65	101.52
2007	123.32	208.39	120.32	125.07
2008	38.52	74.43	82.01	78.44
2009	47.27	62.51	7.58	85.72
2010	79.03	85.48	83.02	86.28
2011	101.75	116.97	108.62	121.65
2012	65.32	78.24	85.11	65.18
2013	85.95	39.11	78.23	55.25
2014	75.23	89.41	86.21	65.98
2015	96.45	101.26	128.24	107.75
2016	64.32	70.32	68.25	55.98
2017	55.98	77.21	65.78	57.21
2018	83.21	72.51	52.65	61.25
2019	78.21	59.32	77.62	75.21
2020	56.67	62.78	75.21	65.21
2021	67.24	65.92	45.21	82.21
2022	130.52	123.43	164.53	111.87
2023	121.36	121.80	183.42	139.02
2024	114.22	95.85	151.65	72.34

It is observed from the table 3 and figure 3, that in selected market the highest Arrivals of Cyclical indices were observed in the year 2006, 2007, 2011, 2015, 2022, 2023 in Nandurbar, Nagpur, Mumbai, Sangli in all the APMC's.

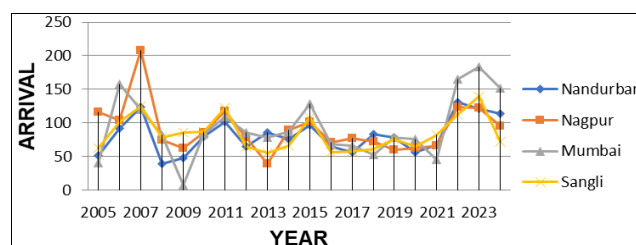


Fig 3: Cyclical indices for Red chilli arrivals

Table 4: Cyclical indices for Red chilli prices in Maharashtra

Year	Nandurbar	Nagpur	Mumbai	Sangli
2005	50.89	116.74	102.48	80.74
2006	101.67	163.61	131.42	157.52
2007	123.33	119.39	125.07	137.03
2008	138.65	94.43	98.44	82.016
2009	87.27	92.51	95.72	107.58
2010	79.03	85.48	86.28	123.02
2011	121.75	126.97	132.60	128.71
2012	95.06	67.94	83.64	109.32
2013	118.68	76.96	82.88	96.57
2014	111.81	86.11	85.39	106.35
2015	86.76	101.26	104.93	120.27
2016	84.72	122.61	117.96	119.89
2017	86.09	76.14	65.51	100.13
2018	80.80	77.00	83.09	115.43
2019	68.34	87.31	66.34	135.40
2020	95.10	90.24	106.09	157.19
2021	93.82	84.21	98.78	161.83
2022	130.54	113.43	121.87	154.08
2023	131.36	121.80	139.02	173.66
2024	114.2	95.85	72.34	161.66

It is seen from the table 4 and figure 4, that the cyclical variations were observed in the Prices of Red chilli in the

selected markets. The higher Prices were recorded during the years 2006, 2007, and 2011, 2015, 2022, 2023 in all selected APMC's.

It is also observed that, a well defined cycle could not be observed in case of the arrivals and prices in selected

markets of Maharashtra. The results of present findings are in close conformity with the results reported by (Naidu *et al.*, 2014) ^[2] for the study of Behaviour of market arrivals and prices chillies in Khammam and Warangal district of Andhra Pradesh for the period 2002-03 to 2012-13.

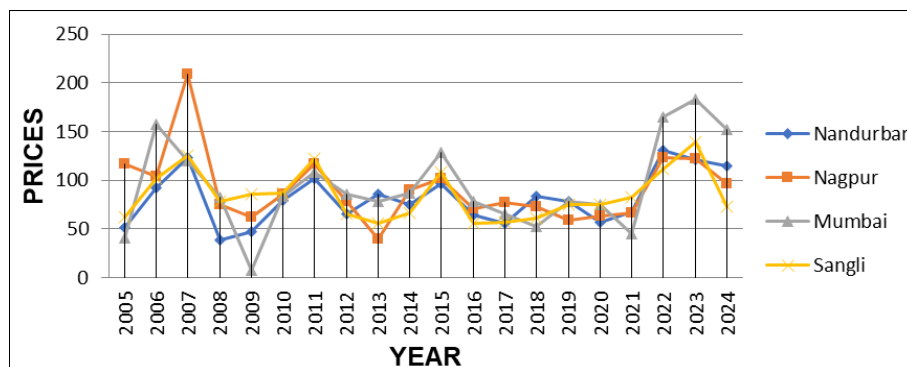


Fig 4: Cyclical indices for Red chilli prices

Conclusion

Seasonal indices of red chilli shown peak arrivals during December to March in all selected markets and highest prices were observed during October to April.

A well defined cycle could not be observed in case of the arrivals and prices of red chilli in all the selected markets.

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