



# Trends in Arrivals and Prices of Chilli in APMC, Nandurbar District of Maharashtra

Patole SD, Ahire DB\* and Tatpurkar SR

Assistant Professors, College of Agriculture Nandurbar, India

\*Corresponding author: Dr. Dipakkumar Ahire, College of Agriculture, Nandurbar Dist, Maharashtra, India, Pin- 425412, Tel: 9421961928; Email: horticultureacnandurbar@gmail.com

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## Abstract

The present study was conducted to access the trends in arrivals and prices of chilli in APMC, Nandurbar. The trends in arrival and prices of chilli were worked out by using exponential form of equation. The trends in arrival and prices for chilli in APMC Nandurbar during 2009-2010 to 2018-2019 were depicted. The result indicates that, significant increasing trend was found in case of arrivals and prices of green and dry chilli except arrivals of green chilli in 2014-18 and prices of dry chilli in 2018-19. Arrivals of green chilli increased with decrease in prices and prices of dry chilli increases with decreases in arrivals over period of time. The indices of chilli shown higher arrivals during harvesting period i.e. end of kharif season with steady prices

**Keywords:** Trends; CGR; Arrivals; Prices; APMC (Agricultural Produce Market Committee)

## Introduction

Chilli (*Capsicum annum* L.) is most widely used and universal spice of India. The nutritive value of chilli is excellent; it is rich in vitamins, especially in vitamin A and C. India has immense potential to grow and export different types of chillies required to various markets around world. The most important chilli growing states in India are Andhra Pradesh (49%), Karnataka (15%) Maharashtra (6%) and Tamilnadu (3%) which constitute nearly 75 per cent of the total area under chilli. India's chilli export is currently in bull stage and chillies exports from India are mostly to Srilanka, USA, Nepal, Mexico and Bangladesh. Among these countries USA, Srilanka and Mexico are the major importers of India's chillies.

The price fluctuations in agricultural commodities are a common phenomenon due to their seasonal nature of production, wide ecological imbalances compared to other

crops and seasonal demand for agricultural commodities. Agriculture is characterized by wide variations in the output of crops which subsequently lead to larger variation in market arrivals.

Thus it helps them to take decision regarding when to sale so as to obtain maximum price. The acreage under chilli in Khandesh area particularly Dhule, Nandurbar and Dhondicha is substantial.

Recently, Maharashtra government plans to create 200 acre food processing Park for Chilli in the Nandubar District. The arrivals of chilli in Nandurbar market are remarkable. However, the fluctuations in arrivals and prices of Chilliies were noticed in APMC, Nandurbar. But it is to essential to have stability in the prices and arrivals of chilli. The present study namely trends in Arrivals and Prices of chilli in APMC, Nandubar District of Maharashtra was undertaken.

## Objectives

1. To study the changes in arrivals and prices of chilli in APMC Nandurbar
2. To study the trends in arrival and prices of chilli in APMC Nandurbar
3. To examine seasonal indices of arrivals and prices of chilli in APMC Nandurbar

## Methodology

The present study was based secondary data on the prices and arrivals of Chilli collected from APMC, Nandurbar District of Maharashtra . The data relate to period of 10 years *i.e.* from 2009-10 to 2018-19. The data pertaining to prices and arrivals of Chilli were collected from Agriculture Produce Market Committee Nandurbar

## Analysis of data

Analysis was carried out separately for green as well as dry chillies separately. Changes over the base year (2009-10) were calculated at two different points *i.e.* 2014-15 and 2018-19 with the help of simple averages and percentages.

## Trends in arrivals and prices of Chilli crop:

The time series data pertaining to monthly arrivals and prices of chilli covering the period of ten years (April 2009 to March 2019) was collected from APMC, Nandurbar. The compound growth rates of arrivals and prices of chilli crop were worked out by using an exponential form of equation as below.:

$$Y=ab^t$$

Where,

Y = Monthly arrivals/prices

a = Constant

b = Trend co-efficient

t = Time period

Annual compound growth rate (CGR) in percentage is calculated as

$$CGR (\%) = (\text{Antilog of } b-1) \times 100$$

## Seasonal Indices

Seasonal variations are those periodic movements which operate in a period and regular manner during a period of 12 months. Thus, these variations are worked out for data which recorded monthly. Seasonal variations were computed by twelve months moving average method.

## Results and Discussion

### The percentage changes in arrivals and prices of green and dry chilli

The percentage changes were calculated for arrivals and prices of green chilli and dry chilli at two distinct time period 2014-15 and 2018-19 and presented Table-1.

**Green Chilli:** It is revealed from the table that the arrivals of green chilli showed severe changes in APMC, Nandurbar market. In 2009-10 arrivals were 128294 qtls but in 2014-15 it decreased by 31 per cent and again increased by 21 per cent in 2018-19 over the base year. However in case of price of green chilli variation is near about same in 2018-19 but in 2014-15 it was increased by 56 percent

**Dry Chilli:** Chilli is the major commodity in Nandurbar market. Arrivals and prices of dry Chilli in 2009-10 were 8894 qtls and Rs.4698. The arrivals of dry chillis lightly increased in 2014-15(4.56 percent) but tremendous decrease showed in 2018-19(91.54 per cent) by arrivals of chilli. It is interesting to note that prices were increasing continuously over the period of time *ie* 34.25 percent in 2014-15 and 152.15 per cent in 2018-19. This less arrivals may be due to drought condition during the 2017-18.

Month wise percentage change also shown more or less similar picture with annual change in arrivals and prices of green as well as dry chilli in APMC, market Nandurbar. A very negligible arrivals of both the chillies was noticed in the month of July and August because of off season of chilli crop. On whole, it is concluded that the increasing trend was found in case of arrivals and prices of green and dry chilli except arrivals of green chilli in 2014-15 and prices of dry chilli in 2018-19.

| Months  | 2009-10 Base Year   |        |                 |        | 2014-15          |        |                |        | 2018-19          |        |                |        |
|---------|---------------------|--------|-----------------|--------|------------------|--------|----------------|--------|------------------|--------|----------------|--------|
|         | Green Chilli (qtls) |        | Dry Chilli (Rs) |        | Green Chilli (%) |        | Dry Chilli (%) |        | Green Chilli (%) |        | Dry Chilli (%) |        |
|         | Arrivals            | Prices | Arrivals        | Prices | Arrivals         | Prices | Arrivals       | Prices | Arrivals         | Prices | Arrivals       | Prices |
| April   | 5352                | 1926   | 537.5           | 4407   | 126.92           | -14.59 | 60.74          | 18.95  | -94.73           | 0.1    | -93.67         | 46.34  |
| May     | 274                 | 1687   | 126.5           | 4605.5 | 9.49             | 4.03   | 33.6           | -2.53  | -57.3            | -13.69 | -              | -      |
| June    | 12.5                | 2407   | 78.5            | 5201   | 68               | -23.85 | -73.25         | 1.42   | -60              | -52.14 | -93.63         | 40.03  |
| July    | -                   | -      | 83              | 5168   | -                | -      | -              | -      | -                | -      | -              | -      |
| August  | -                   | -      | 123.5           | 4309   | -                | -      | -              | -      | -                | -      | -              | -      |
| Sept    | 316                 | 646    | 46.5            | 4351   | -91.14           | 67.18  | -              | -      | 570.57           | 180.19 | -              | -      |
| October | 3405.5              | 1467   | 20.5            | 4948   | -29.35           | 40.97  | 70.73          | 10.93  | 1207.47          | 44.31  | 363.41         | 15.46  |

|          |         |        |        |         |        |       |        |       |        |        |        |        |
|----------|---------|--------|--------|---------|--------|-------|--------|-------|--------|--------|--------|--------|
| November | 19162.5 | 1319.5 | 416.5  | 4615    | -17.45 | 56.12 | 112    | 65.83 | 64.24  | 78.86  | -21.73 | 22.34  |
| December | 26320.5 | 1371.5 | 1948.5 | 4326.5  | -13.12 | 53.26 | 28.2   | 80.28 | -20.9  | 62.09  | -94.05 | 45.01  |
| January  | 29991.5 | 1691.5 | 2528.5 | 4525    | -31.5  | 29.88 | 1.92   | 90.85 | 19.27  | 12.15  | -98.5  | 15.14  |
| Feb      | 28177   | 1964   | 1999.5 | 4904    | -58.64 | 9.16  | -24.68 | 29.67 | -34.14 | -10.59 | -95.1  | 987.54 |
| March    | 15283   | 1911.5 | 985    | 5014.5  | -83.72 | 3.37  | -24.16 | 16.08 | -86.82 | 12.58  | -95.94 | -3.1   |
| Total    | 128295  | 1490.1 | 8894   | 4697.88 | -31.2  | 58.21 | 4.56   | 34.25 | 21.36  | 26.51  | -91.54 | 152.15 |

**Table 1:** Percentage change in Arrivals and Prices of green and dry Chilli over the base year in APMC Nandurbar District.

### Trends in arrivals and prices of green and dry chilli in APMC Nandurbar

The results of compound growth rates for arrivals and prices of green and dry chilli for the period from 2009-10 to 2018-19 are estimated and presented in Table -2.

| Sr.No. | Green                |         | Dry       |                    |
|--------|----------------------|---------|-----------|--------------------|
|        | Arrivals.            | Price   | Arrivals. | Price              |
| 1      | 1.9531 <sup>NS</sup> | -18.72* | -18.2429* | 3.91 <sup>NS</sup> |

**Table 2L:** Compound growth rates of green and dry chilli in APMC Nandurbar.

It can be revealed from the table 2 that, the annual compound growth rates of arrivals of green chilli (1.95) were found positive and prices were negative (18.72). Arrivals non-significant and prices significant at 10 per cent level indicating thereby the arrivals of green chill were increased by 1.95 per cent prices were decreased by 18.72 per cent per annum during period under study. The markets showed inverse relationship between arrivals and prices of green chilli. Higher arrivals of green chilli in the market may be due to higher demand to green chilli in Nandurbar. The results of present findings is in close conformity with the result reported by Andhalkar, et al. [1] examined arrivals and prices

of major pulses in selected APMC in Amravati District.

In case of dry chilli, the annual compound growth rate of arrivals were found negative (18.24) but prices were found positive (3.91). Indicating thereby the arrivals of dry chilli decreased by 18.24 per cent per annum and prices were increased by 3.91 per cent per annum during period under study. The markets showed the decreased arrivals and increased prices in the period under study which may be due to the increased demand from nearby state market.

### Seasonal indices of arrivals and prices of green and dry chilli in APMC, Nandurbar

**Green Chilli:** From Table-3 depicted that peak arrival was found to be during the months of January (300.98) followed by December (246.04) and it was the lowest and negligible from May to September. The highest price was recorded during the month of March (135.03) followed by February (133.85) while it was lowest during the month of July (13.91). The results of present findings are in close conformity with the result reported by Bhanumate [2] & Benke, et al. [3] examined trend analysis of agricultural commodities. In APMC, Solapur & economic analysis of green gram arrivals & prices behavior in Akola district of Maharashtra.

| Sr.No. | Months   | Green    |        | Dry      |        |
|--------|----------|----------|--------|----------|--------|
|        |          | Arrivals | Prices | Arrivals | Prices |
| 1      | April    | 35.42    | 115.3  | 65.46    | 102.1  |
| 2      | May      | 2.27     | 93.86  | 22.24    | 75.34  |
| 3      | June     | 0.21     | 106.4  | 13.25    | 109.1  |
| 4      | July     | 0.06     | 13.91  | 8.22     | 57.78  |
| 5      | August   | 0.03     | 37.68  | 12.13    | 60.35  |
| 6      | Sept     | 3.15     | 80.96  | 4.36     | 51.84  |
| 7      | October  | 119.84   | 109.2  | 13.66    | 94.28  |
| 8      | November | 196.19   | 122.5  | 102.32   | 105.8  |
| 9      | December | 246.04   | 125.2  | 265.29   | 112    |
| 10     | January  | 300.98   | 126    | 279.36   | 117.2  |
| 11     | Feb      | 215.18   | 133.9  | 265.09   | 204    |
| 12     | March    | 80.68    | 135    | 147.85   | 110.1  |

**Table 3:** Seasonal indices of arrivals and prices of green and dry chilli in APMC, Nandurbar.

**Dry Chilli:** It can be observed that the highest arrival was found to be during the month of January (279.36) while it was lowest in September (4.36). The highest price was recorded during the month of February (204.01) while the lowest price was observed during the month of September (51.84).

To sum up the indices of chilli shown higher arrivals during harvesting period i.e end of *kharif* season with steady prices. The results of present findings are in close conformity with the result reported by Dhakate [4] & Kadu [5] examined arrivals and prices of agricultural commodities in Akola A.P.M.C & arrivals and prices of major food grains in APMC, Karanja, District Washim.

### Conclusions

1. The increasing trend was found in case of arrivals and prices of green and dry chilli except arrivals of green chilli in 2014-18 and prices of dry chilli in 2018-19.
2. Arrivals of green chilli increased with decrease in prices and prices of dry chilli increases with decreases in arrivals over period of time.
3. The indices of chilli shown higher arrivals during harvesting period *ie* end of *kharif* season with steady prices.

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