

## Trends in Market Arrivals and Price of Pearl Millet in Haryana

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### ABSTRACT

*The present study is an attempt conducted to examine the market trends in arrivals and prices of pearl millet in Haryana. For that two main Markets were purposively selected in the vicinity of largest production areas of Pearl Millet. Last ten year records shows that Bhiwani is the largest Pearl Millet producing district followed by Mohindergarh district. So Markets of Bhiwani and Mohindergarh were taken under study. Study findings that in Bhiwani food grain market maximum arrival of Pearl Millet was observed in the peak period (September-December) followed by mid period (January-May) and minimum in lean period (June-August) and price are maximum in the lean period (June-August) followed by mid period (January-May) and minimum in peak period (September-December). The same trend was found in Mohindergarh district also. Seasonal indices analysis of arrival and price, showed that major portion of pearl millet received in market during peak period and price were highest during the lean period. It is also observed that arrival and price were increased year to year as the time was passed. The Arrival and price show linear relationship with time. The prices were inversely related with market arrivals, i.e. they increase with decrease in market arrivals and vice-versa.*

**Key words:** Pearl millet, Arrival, Peak period, Lean period, Seasonal indices.

### INTRODUCTION

In India Pearl millet is the next most important millet crop in terms of area and production after sorghum. India is also considered the secondary centre of origin for pearl millet with many distinct cultivars growing throughout the country. India is the largest producer of pearl millet, both in terms of area and production. Pearl millet cultivation

is done mainly during *Kharif* (rainy) season across the country. It is also grown to a lesser extent during *Rabi* (post rainy) season in Andhra Pradesh, Karnataka, Tamil Nadu and Pondicherry. Summer pearl millet cultivation varies from state to state with varying rainfall and soil type. Improved varieties have been developed for both food grains and fodder/forage purpose.

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But, due to negligence and policy for course paralysis cereals for a long period, the area under pearl millet has been reduced significantly, even though a moderate increase in yield and production was recorded at all-India level during the last ten years. The area under pearl millet is significantly decreasing in all states except Rajasthan. The area under pearl millet crop in Haryana was 7.73 lakh hectares during the year 1965-66, which declined to 5.85 lakh hectares in the year 2009-10. However, the yield has increased significantly over the above mentioned period. The growth in yield is significantly higher in Haryana. The production of pearl millet in Haryana has been increased from 2.06 lakh tonnes during the year 1965-66 to 9.32 lakh tonnes during 2009-10 and the productivity increased from 267 to 1593 kg/ha during the same period. This was increased further to 2069 kg/ha during the year 2011-12. In Haryana, the maximum area under pearl millet was in Bhiwani district followed by Mohindergarh, Rewari and Hisar districts during the year 2008-09. During the peak crop season when the produce arrives in the market, storage facilities becomes a big constraint. Besides this, the absence of accurate data with regard to marketed and marketable surplus make our plans unrealistic and consequently the producers do not get a remunerative price.

#### MATERIAL AND METHODS

Bhiwani and Mohindergarh district of Haryana was purposively selected on the bases of maximum area under pearl millet was in Bhiwani district followed by Mohindergarh district during last ten years. Market survey was conducted to assess the price spread across different value chain for pearl millet. Regulated and unregulated markets are selected in the district. The time series data with regard to arrivals and prices were collected for the period 2000-2011 from all the selected markets. Marketing pattern of pearl millet was examined with respect to time, place, agency, price received by different categories of farmers. However, at the market level the marketing pattern would indicate the

magnitude of arrivals and prices of pearl millet in different selected markets during peak, mid and lean marketing periods. Method of simple average is used to find out the seasonal indices which was used to worked out using the following formula

$$\text{Seasonal indices} = \frac{\text{Monthly average}}{\text{Average of monthly average}} \times 100$$

#### RESULTS AND DISCUSSION

##### Market trends in arrivals and prices of pearl millet.

The seasonal production of pearl millet renders it arrivals in the market a seasonal phenomenon. With the view to examine the marketing pattern of pearl millet the crop year was split up in to three period viz. (1) peak marketing period from September to December (2) mid marketing period from January to may and (3) lean marketing period from June to august.

Table 1 indicates that market arrivals were in the range of about 66.4 per cent (2004-05) to 99.43 per cent (2009-10) of total arrivals during arrivals in peak period. Simultaneously, market arrival were in the range of about 0.55 per cent (2009-10) to 31.99 per cent (2004-05) of total market arrivals during the mid period and in the range of about 0 .02 per cent (2009-10) to 4.00 per cent (2010-11) during arrivals in lean period. This has clearly indicated that market arrivals were at maximum during peak period followed by mid and minimum in lean period.

The price of pearl millet in all the marketing period i.e. peak, mid and lean season have shown considerable increase in Mohindergarh market. In the marketing season average price ranged between Rs 315 to 912.60 per quintal in the selected time period 2001 to 2010. This indicate that a great variation in price from year to year which may be due to change in cost of production and change in minimum sport price (MSP) of pearl millet. Among all the ten years (2001-10), the highest price of pearl millet was found in the year 2010-11 during lean period. In peak marketing season price was low during the

year 2001-02. It is also concluded from the table that the price were inversely related with

market arrivals, i.e. they increase with decrease in market arrivals and vice-versa.

**Table: 1 Arrivals and price of pearl millet in Mohindergarh district during the year (2001-10)**

Year	In Peak Period (Sept-Dec)		Mid Period (Jan-May)		In Lean Period (June- Aug)		Total arrival
	Arrivals (qtls)	Price (Rs per quintal)	Arrivals (qtls)	Price (Rs per quintal)	Arrivals(qtls)	Price (Rs per quintal)	
2001-02	12360 (94.54)	315.00	491 (3.75)	353.60	225 (1.71)	360.00	13076 (100)
2002-03	6967 (81.92)	441.67	1393 (16.62)	458.40	18 (1.82)	469.00	8378 (100)
2003-04	6288 (85.46)	464.00	1090 (14.26)	471.80	21 (0.28)	478.00	7399 (100)
2004-05	19860 (66.4)	525.25	9530 (31.99)	585.50	477 (1.61)	625.32	29867 (100)
2005-06	10662 (95.29)	590.00	848 (3.99)	605.00	78 (0.69)	631.25	11588 (100)
2006-07	34016 (94.59)	659.33	1265 (3.52)	665.20	680 (1.89)	680.00	35961 (100)
2007-08	42747 (87.55)	593.50	6025 (12.34)	673.20	53 (0.11)	685.40	48825 (100)
2008-09	94018 (94.15)	737.00	1903 (1.92)	761.00	3935 (0.393)	780.67	99856 (100)
2009-10	80682 (99.43)	786.67	447 (0.55)	852.60	13 (0.02)	900.75	81142 (100)
2010-11	83478 (93.36)	803.50	2386 (2.64)	870.20	3536 (4.00)	912.67	89400(100)

Source: Market committee office, Narnaul

Figures in parenthesis percentage of total market arrival and price

Table 2 indicates that in Bhiwani Market, arrivals were in the range of about 59.12 per cent (2001-02) to 98.10 per cent (2009-10) of total market arrivals during peak period. Arrival were in the range of about 1.49 per cent (2010-11) to 37.32 per cent (2001-02) of total market arrivals during the mid period and in the range of about 0.12 per cent (2009-10) to 21.47 per cent (2000-01) of total arrival during lean period.

The price of pearl millet in all the marketing period i.e. peak, mid and lean season have found to be considerable increase in Bhiwani market. In the marketing season average price ranged between Rs 330 to

994.33 per quintal in the selected time period in year (2001-10). This indicated that a large variation in price was observed from year to year which may be changed due to change in cost of production of pearl millet and change minimum support price (MSP) of pearl millet during these years. Among all the ten years (2001-10), the highest price of pearl millet was found in the year 2009-10 during lean period. In peak, marketing season price was low during the year 2001-02. It is also concluded from the table that the price were inversely related with market arrivals, i.e. they increase with decrease in market arrivals and vice-versa.

**Table: 2 Arrivals and price of pearl millet in Bhiwani district during (2001-10)**

Year	Peak Period (Sept -Dec)		Mid Period (Jan-May)		Lean Period (June- Aug)		Total Arrival
	Arrivals (Qtls)	Price (Rs per quintal)	Arrivals (Qtls)	Price (Rs per quintal)	Arrivals (Qtls)	Price (Rs per quintal)	
2001-02	3799 (60.50)	330	1130 (18.03)	336.67	1348 (21.47)	353	6277 (100)
2002-03	2115	437.25	1341	448.20	128	451.67	3584

	(59.12)		(37.32)		(3.56)		(100)
2003-04	10888 (92.19)	440	636 (5.39)	449.60	286 (2.42)	456.25	11810 (100)
2004-05	5686 (71.13)	478.67	1571 (20.19)	490.80	253 (3.36)	512.5	7510 (100)
2005-06	5006 (91.45)	557.67	405 (7.39)	576.40	64 (1.16)	662.75	5475 (100)
2006-07	23238 (92.37)	678	1289 (5.12)	678.80	634 (2.51)	680.33	25161 (100)
2007-08	56045 (95.23)	646.67	2112 (3.59)	680.60	694 (1.18)	703	58851 (100)
2008-09	57185 (93.56)	710	1970 (3.22)	631	1964 (3.21)	846	61119 (100)
2009-10	34632 (98.10)	854.67	629 (1.78)	856.2	44 (0.12)	935.75	35305 (100)
2010-11	59749 (98.03)	859	908 (1.49)	923	292 (0.48)	994.33	60949 (100)

Source : Market committee office, Bhiwani

Figures in parenthesis percentage of total arrivals and prices

### Seasonal indices in the prices and arrivals of Pearl millet in selected market

In order to examine the extent of seasonal variations in arrivals and price, time series analysis was applied by using monthly data on arrivals and price for different selected market

The seasonal indices for pearl millet are summarized in table 3. The arrival of pearl millet was higher in peak period September to December in both the market. Nevertheless the

market arrival starts decreasing sharply January and February onwards in Bhiwani and Mohindergarh market respectively. Arrivals were lowest in the month of July in Bhiwani market and during June in Mohindergarh market. The arrival indices were above average in the month October to November and September to December during the peak period in Bhiwani and Mohindergarh markets, respectively.

**Table: 3 Seasonal indices in the prices and arrivals of Pearl millet in selected market during (2001-10)**

Month	Bhiwani				Mohindergarh			
	Arrivals	Percent	Price	Percent	Arrivals	Percent	Price	Percent
<b>Peak</b>								
September	568	48.32	570	92.27	10483	313.69	595	94.50
October	9017	767.19	585	94.69	17179	514.07	605	96.09
November	1914	162.84	601	97.28	4168	124.72	609	96.72
December	967	82.27	605	97.93	3957	118.41	617	97.99
<b>Mid</b>								
January	494.9	42.10	599	96.96	1381	41.32	620	98.47
February	286	24.33	606	98.09	623	18.64	623	98.95
March	447	38.03	608	98.42	851	25.46	626	99.42
April	91	7.74	616	99.71	378	11.31	630	100.06
May	187	15.91	630	101.98	689	20.61	633	100.54
<b>Lean</b>								
June	47	3.99	673	108.94	82	2.45	662	105.14
July	17	1.44	659	106.67	84	2.51	666	105.78
August	68	5.78	661	107.00	226	6.76	670	106.41

Price indices were above average from June to August during the lean period and also in May during the mid period, while below average

from September to December and January to April during peak period and mid period, respectively in Bhiwani district. In

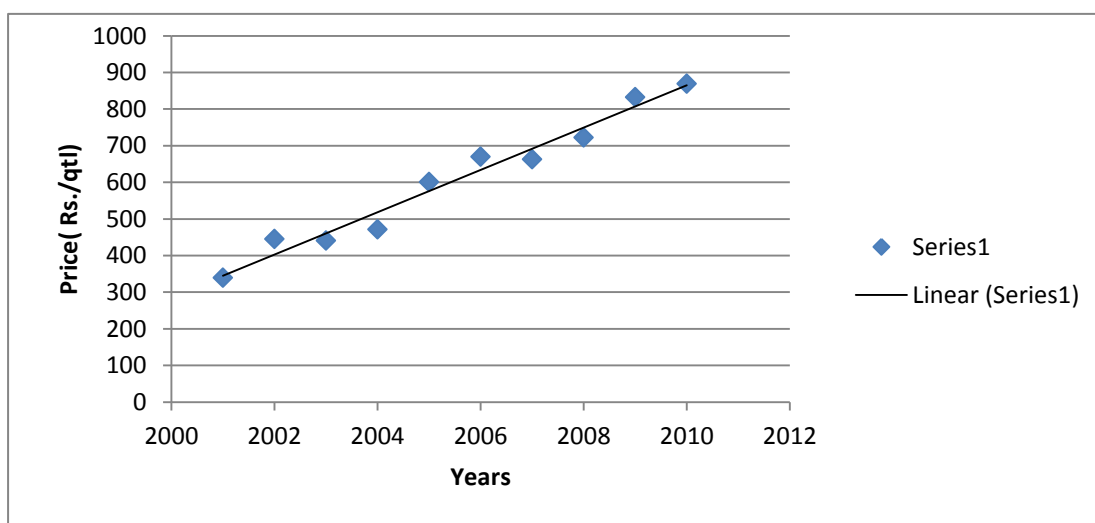
Mohindergarh market price indices were above average from April to May during the mid period and June to Aug during the lean period, while below average from January to March and September to December during mid and peak period, respectively.

Trends analysis of price of pearl millet in the selected market of Mohindergarh and

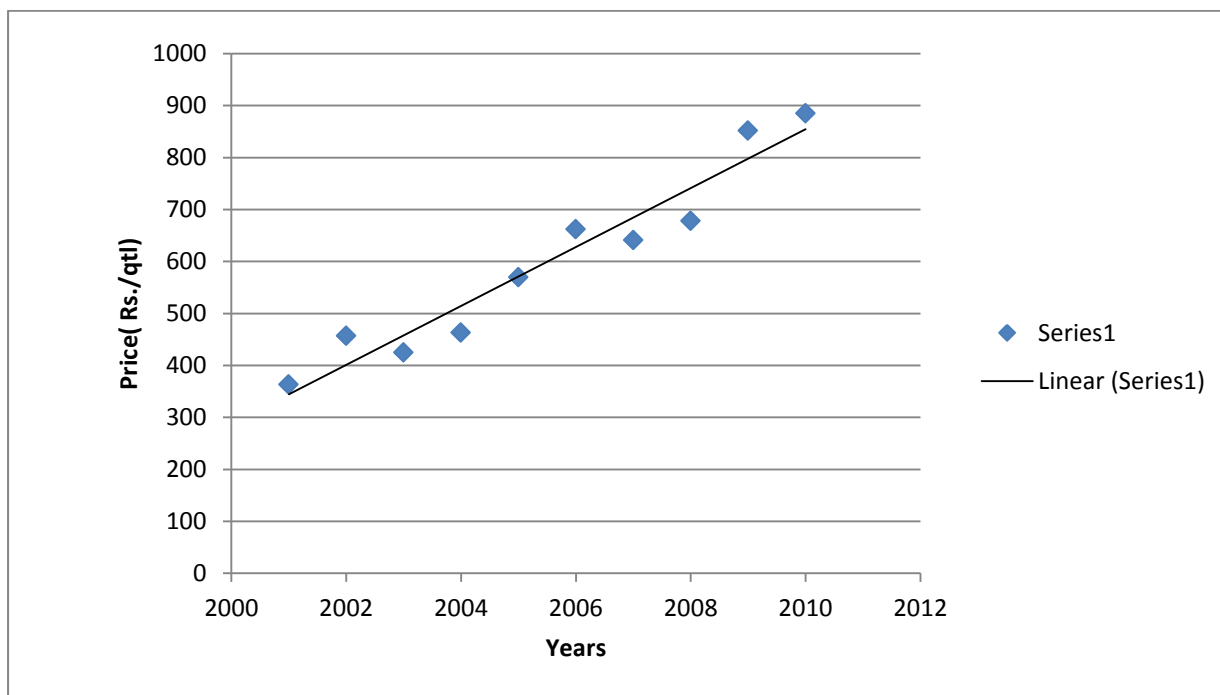
Bhiwani district presented in table 4. The table revealed that the value of intercept in the Bhiwani district was 280.91, coefficient was 59.879 and the value of standard error was 1533.59 and intercept in the Mohindergarh market was 287.8, value of coefficient was 56.689 and the value of standard error was 1863.08.

**Table: 4 Trends in Price of Pearl Millet**

Name of market		Period	R Square	Equation fitted
Bhiwani		2001-10	0.95	$y = 280.91 + 59.879x$ (1533.59)
Mohindergarh	2001-10	0.93	$y = 287.8 + 56.689x$ (1863.08)	



**Fig. 1: Trends in Price of Pearl Millet in Mohindergarh Market**



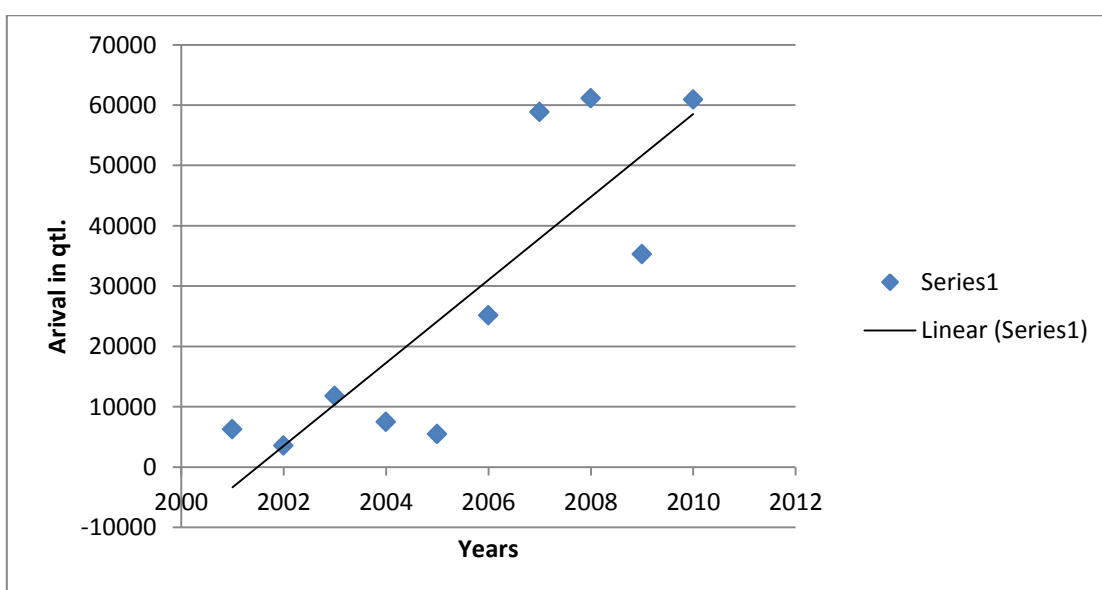
**Fig. 2: Trends in Price of Pearl Millet in Bhiwani Market**

Trends analysis of arrivals of pearl millet in the selected market of Mohindergarh and Bhiwani market presented in table 5. The table revealed that the value of intercept in the Bhiwani district was -10204, value of coefficient was 6874.4 and the value of stranded error was 4.42. The value of intercept

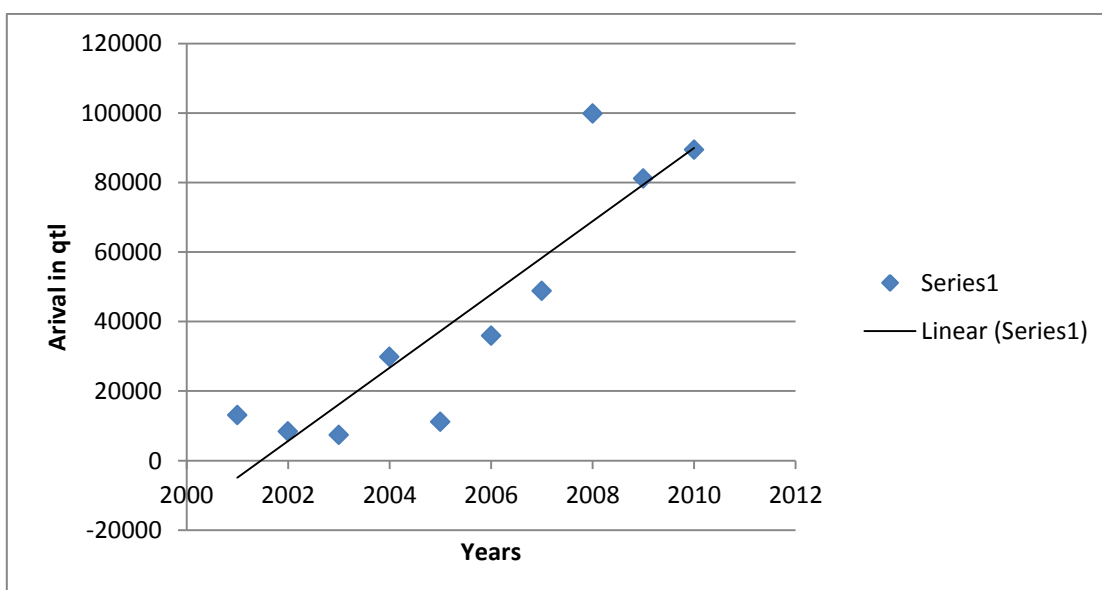
in the Mohindergarh market was -15497, value of coefficient was 10547 and the value of standard error was 5.24. Table shows linear relationship between dependent variable arrival and independent variable time in both the markets.

**Table: 5 Trends in arrival of pearl millet**

Name of market	Period	R Square	Equation fitted
Bhiwani	2001-10	0.71	$y = - 10204 + 6874.4x$ (4.42)
Mohindergarh	2001-10	0.80	$y = - 15497 + 10547x$ (5.24)



**Trends in arrival of pearl millet in Bhiwani Market**



**Trends in arrival of pearl millet in Mohindergarh Market**

### CONCLUSION

The trends of arrivals and price was found similar in both the major Pearl Millet production area districts (Bhiwani and Mohindergarh). From the seasonal indices analysis of arrival and price, it can be concluded that major portion of pearl millet received in market during peak period and price were highest during the lean period. The price showed the linear relationship with time, may be due to minimum support price of pearl millet was announced by commission for agriculture cost and price (CACP) and the state government every year.

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