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Maize (Zea mays L) is one of the most important cereals of the world and provides more human food than any other cereal. Maize is of American origin having been domesticated about 7000 years ago. Maize provides nutrients for humans and animals and serves as a basic raw material for the production of starch, oil and protein, alcoholic beverages, food sweeteners and, more recently, fuel. Maize is high yielding, easy to process, readily digested, and costs less than other cereals. It is also a versatile crop, allowing it to grow across a range of agroecological zones. Every part of the maize plant has economic value: the grain, leaves, stalk, tassel, and cob can all be used to produce a large variety of food and non-food products.

Corn grown is majorly of three types
- Grain or field corn,
- sweet corn used mainly as food
- Popcorn.

There are four types of Grain corn:
1. **Dent** corn has a pronounced depression or dent at the crown of the kernels.
2. **Flint** corn has the hard starch layer entirely surrounding the outer part of the kernel.
3. **Flour**, or soft, corn contains almost entirely soft starch, with only a very thin layer of hard starch.
4. **Waxy** corn has a wax-like endosperm.

Popcorn has a very high proportion of hard starch. When heated, the moisture in the kernel expands rapidly, resulting in an explosive rupture of the epidermis. The size of the kernel increases from 15 to 35 times, after popping. Maize in India is an important cereal, and both its area and production have steadily increased during the past two decades. Maize has varied usages from food preparation to poultry feed. In India, it is mainly used in poultry feed manufacturing.

**Climatic requirements**
Maize crop is grown in warm weather condition and it is grown in wide range of climatic conditions. About 85% of the total acreage under maize is grown during mansoon because of the fact that the crop stops growing if the night temperature falls below 15.60 C or 600 F.
World Scenario

Maize is an important staple food in many countries of the world and the acreage and production of maize in the world have been increasing continuously. Though the acreages have not been so erratic, the production has been a bit volatile mainly due to the variations in the yield. The area under the maize is continuously increasing over the years. If we examine production figures, global maize production reached its high of 712 million tons during 2004-05.

The variations in production are mainly due to yield which is affected by a lot of factors. Factors like Weather during crop growth, pest and disease attack, technological advances and development of new hybrids and varieties affect the yield of corn.

The US has the largest harvested area of corn and contributes one fifth of the world corn harvested area. China, Brazil, Mexico, India and Indonesia are the other countries which contribute significantly to the world harvested area. These six countries have around 60% of the world corn harvested area and the climatic conditions of these countries during the growth period of corn affect the yield and in turn the supply of corn in the world.
If we examine the above graph, it is inferred that USA has the lion’s share in total global maize production accounting for 30% of the production. Other major maize producers are China (15%), EU – 25 (14%), Brazil (4%) and India (3%).

**World Balance Sheet**

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<tbody>
<tr>
<td>Beginning Stock (MMT)</td>
<td>192.90</td>
<td>173.15</td>
<td>149.57</td>
<td>125.43</td>
<td>103.23</td>
<td>130.45</td>
<td>127.08</td>
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<td>Production (MMT)</td>
<td>590.48</td>
<td>599.91</td>
<td>602.95</td>
<td>625.16</td>
<td>712.29</td>
<td>691.74</td>
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<td>Consumption (MMT)</td>
<td>608.39</td>
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<td>625.86</td>
<td>646.37</td>
<td>684.08</td>
<td>696.73</td>
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<td>Ending Stocks (MMT)</td>
<td>173.15</td>
<td>149.57</td>
<td>125.43</td>
<td>103.23</td>
<td>130.45</td>
<td>127.08</td>
<td>91.21</td>
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<tr>
<td>Stock/Use Ratio (%)</td>
<td>28.46</td>
<td>24.07</td>
<td>20.04</td>
<td>15.97</td>
<td>19.07</td>
<td>18.24</td>
<td>12.65</td>
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Global stock to use ratio is declining in the last three years indicating consumption is increasing while production is not increasing in that pace. This indicates diversified usages of maize and it acts as a substitute for other cereals.
Domestic Supply Scenario

India is the fifth largest producer of maize in the world contributing 3% of the global production. In India, maize is grown in all the seasons i.e., kharif, rabi and summer. Of these three seasons, nearly 90% of the production is from kharif season, 7-8% during rabi season and remaining 1-2% during summer season. Since the maize is rain dependent, it is mainly grown during kharif season.

Maize Area, Production and Yield in India have seen a phenomenal growth over the last five decades and India has emerged from being a net importer to levels of self sufficiency. In the last five decades, India’s maize production has increased from less than 3 million tons to 15 million tons today. This is because of growth in technology coupled with rising demand for the produce. Diversified uses of maize also prompted higher production in the country. Presently, in India, maize is mainly used for preparation of poultry feed and extraction of starch. Out of total arrivals to the mandis nearly 75% of the produce is bought by the poultry feed manufacturers and 20% is purchased by the starch extractors.
If we examine the production over the years, maize production in India is remained almost stagnant with constant yield levels despite rise in acreage. Maize, like any other cereal is grown across all the states in India and in many states it is one of the important staple foods. Karnataka and Uttar Pradesh are the leading producers of maize in India while Andhra Pradesh, Bihar, Madhya Pradesh and Rajasthan are the other important producers.
Among the major producing states, Andhra Pradesh tops the list with the contribution of 17% to the total Indian maize production. Other producers are Rajasthan (14%), Madhya Pradesh (12%), Bihar (10%), Uttar Pradesh (9%), Karnataka (8%) and Gujarat (6%).

### Seasonality of Maize in India

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<tr>
<th>State</th>
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- **Sowing**
- **Harvesting**

### Indian Scenario during 2006-07

With the early onset of the South West Monsoon, maize sowing was started little earlier than normal planting period. According to Union Ministry of Agriculture, as on 10th July 2006, area brought under maize in India was 35.22 lakh hectares up from 27.36 lakh hectares planted during the corresponding period last year. Higher acreage under the crop raised the hopes of higher production this year.
Price Analysis

For analyzing price trend, spot prices of Nizamabad was considered since Andhra Pradesh is major maize growing region and major markets are located in this region. Apart from Nizamabad in Andhra Pradesh, Davangere market in Karnataka also acts as a major market in the country.

If we examine the price trend of maize in Nizamabad market, prices will be on their peak during the months of April to June. From July onwards prices start declining owing to start of kharif season. Looking at this trend we expect downward movement in maize prices during current year.

Price of maize mainly depends upon supply demand structure. In the last few weeks, maize is trading on higher side on account of supply demand mismatch. Food Corporation of India, which procured maize under market intervention scheme, is not releasing the stocks to the market. This created supply crunch resulting in surge in prices despite higher acreage under the crop.

We can expect fall in futures prices in the days ahead once the new produce start coming to the market. We can expect futures to trade below Rs.600 per quintal in the months of August and September.

**Price Target**

Based on the above mentioned fundamentals we expect futures prices to fall below Rs.600 per quintal level during the months of August and September.