Different species of maize (Zea mays L.) in J&K

Arjmand Rashid and Dr. Pragya Shrivastav

Abstract
Maize (Zea Mays L) is an easily grown crop and the most important cereal crop in the world after wheat and rice, the second most important cereal crop cultivated over 0.31 million hectares with an annual production of 0.27 million tones having an average productivity of 0.89 tons per hectares. It is one of the oldest and most dynamic crop species which has gained popularity in modern world due to its applications in diverse dishes.

In Jammu & Kashmir, maize is the major crop, since last decade the average yield of this crop has nearly doubled, making it the area under highest yielding variety. During Kharif season, maize is grown and about 85% cropped area is rain fed. The different varieties of maize grown in Jammu & Kashmir C5 (Trikuta), C6 (Shalimar), C8, C14, C15 Super Composite – I (Mansar) Shalimar KG Maize – I, Shalimar KG Maize – 2.

Keywords: Zea mays, rain fed, dynamic

Introduction
Classification

Kingdom : Plantae (Plants)
Sub Kingdom : Tracheobionta (Vascular Plants)
Super Division : Spermatophyta (Seed Plants)
Division : Magnoliophyta (Flowering Plants)
Class : Liliopsida (Monocotyledons)
Sub Class : Commelinidae
Order : Cyperales
Family : Poaceae (Grass family)
Genus : Zea L (Corn)
Species : Zea mays L (corn)

In terms of hectarage, maize was the first ranking crop in J&K in 1994-95 and about 1/3 of the total cropped area was devoted to its cultivation. The average yield level of this crop has doubled since last decade. This increase in yield has mainly improved in varieties three times of the present average of the state. In J&K, maize is usually cultivated at higher altitude terrains, plains and Karewas under rain fed agriculture. The huge gap between attained and attainable conditions can be attributed to various biotic stress. About 15.6% of loss in yield due to biotic stress is caused by insects, pests alone (Dhariwal & Arora, 2006).

It is the staple food of Gujjars & Bakarwals living in the Kandi and hilly areas. Moreover, the grains form an important cattle food, being fed to farm animals. It provides huge quantity of fodder to the cattle in the state. Its parts are used for many industrial purposes as well, silk thread used as filter, husks for making mattresses, cobs for making of corn pipes. Oil is also extracted from maize used in cooking, glucose and dextrin.

Maize is widely cultivated in J&K grown in Kandi, Karewa and plain areas. It thrives up very well in the sandy and loamy soils. It also develops well in cold hilly and mountainous areas. Maize is also grown in all such areas where summers are long enough for its cultivation. It needs about 30 degree Celsius temperature at the time of germination, growth and development and 20 degree Celsius at the time of ripening. The crop requires adequate manuring even on fertile soils, infact maize is exhaustive crop grown under wide range of climatic conditions. The crop requires considerable moisture and warmth at the time of planting to the termination of flowering period. The amount and distribution of rainfall are
important in maize production. It cannot tolerate water stagnation, rainfall between 50 to 79 cm during vegetation period which is helpful for proper development of maize plant. Moisture stress in flowering period drastically lowers the grain yield.

**Different species of maize (Zea mays L) grown in J&K**

Agriculture is the predominant sector in the economy of J&K. Directly or indirectly it supports 80% of population. Its contribution in state revenue is nearly 60%. The total geographic area of the state is nearly 22.2 million hectares and population of 12.5 million which is approximately 1.04% of the total nation. J&K is divided into three agro climatic zones, cold arid desert area of Ladakh, temperate Kashmir valley and the humid sub-tropical region of Jammu having their own specific climatic conditions. In Jammu region the major portion of land is hilly whereas some portion lies in the plains along the borders of Punjab which gives advocate production of maize and wheat production that is about 67% of the area. In J&K maize is grown over the area of 315.80 thousand hectares and cultivated almost in all districts of J&K. The leading maize producing districts are Kupwara, Baramulla, Budgam, Anantnag, Doda, Rajouri, Punch and Udampur. In terms of production and yield Kupwara stands first among the maize production districts. The state has witnessed maximum increase in maize area except Leh and Kargil districts. It is a staple food of Gujjer and Bakarwals living in Kandi and hilly areas taken as breakfast and in afternoon tea.

**Area favourable for cultivation**

Maize can be grown on a wide variety of soils but it performs well on well drained fertile loams and silty loams. It does not yield well on poor sandy soils and heavy clay soils except with heavy application of fertilizers, deep cultivation and also ridging is necessary to improve drainage in such kind of soil. It shows high growth on soil having PP of 5t0 7t bdt does not shiw growth at its peak at the ph of 6-7. The area with trees, ant hills, shady areas, hard pans, compacted soils, muddy and clayey soils are not favourable for the cultivation of maize. Maize seeds are sown in lines, 60 to 75 cms apart. The seed to seed distance is 20 cms and at least three seeds are sown 3 to 5 cms deep at a place. It is done with a seed drill or seed are sown behind the plough or by dibbling. The young plant establishes over a month period, the extra plants are removed and a robust plant is allowed to grow at a point. If the plants fail to grow the transplantation is done at such places.

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**Table 1: Varieties of maize**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Variety</th>
<th>Yield Potential</th>
<th>Maturity</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Composite C5 (Trikuta)</td>
<td>55-60 q/ha</td>
<td>110-115 day in intermediate zone</td>
<td>Hilly areas upto elevation of 1800m amsl</td>
</tr>
<tr>
<td>2</td>
<td>Composite C6 (Shalimar)</td>
<td>50-60 q/ha</td>
<td>125-130 days in mid-elevations and 155-160 days in the valley</td>
<td>Recommended for Uri and Karnah belts</td>
</tr>
<tr>
<td>3</td>
<td>Composite C8</td>
<td>55-60 q/ha</td>
<td>110-115 days in mid elevation and 150-155 days in the valley</td>
<td>Recommended for high altitude areas from 5500 to 6500 ft amsl</td>
</tr>
<tr>
<td>4</td>
<td>Composite C14</td>
<td>50-55 q/ha</td>
<td>Early maturing 135-145 days in valley and 100-110 days in intermediate zones</td>
<td>Recommended for high elevation up to 2250m</td>
</tr>
<tr>
<td>5</td>
<td>Composite C15</td>
<td>50-55 q/ha</td>
<td>135-140 days</td>
<td>Recommended for cold hills of Kashmir about 6500 ft amsl especially Machel and Gurez</td>
</tr>
<tr>
<td>6</td>
<td>Super Composite 1 (Mansar)</td>
<td>50-60 q/ha</td>
<td>140-145 days in lower elevation and 105-110 days in intermediate zones</td>
<td>Recommended for cold hills of Kashmir about 6500 ft amsl especially Machel and Gurez</td>
</tr>
<tr>
<td>7</td>
<td>Shalimar KG Maize 1</td>
<td>45-50 q/ha</td>
<td>120-125 days</td>
<td>Recommended for cold hills of Kashmir about 6500 ft amsl especially Machel and Gurez</td>
</tr>
<tr>
<td>8</td>
<td>Shalimar KG Maize 2</td>
<td>45-50 q/ha</td>
<td>120-125 days</td>
<td>Recommended for cold hills of Kashmir about 6500 ft amsl especially Machel and Gurez</td>
</tr>
</tbody>
</table>

**Ecology**

| Lower belts of Kashmir Valley and higher reaches of Jammu region (1500 to 1800 amsl) | Higher belts of Kashmir Valley and Jammu region | Recommended for cultivation in all the zones of J&K State |

**Salient Features**

- Plants medium tall, vigorous with air placement at reasonable height. Leaves deep green with narrow apex, stilt roots strong. Ears medium thick with compact green husk cover. Tussel branched and semi – compact. Silk predominantly light green. Grains bold, orange yellow. The variety is resistant to turcicum blight under field conditions. The plant does not lodge and escapes stem breakage under high fertility conditions.
- Plants tall vigorous with air placement at reasonable height. Leaves deep green with narrow apex, stilt roots strong. Ears medium thick with compact green husk cover. Tussel branched and semi – compact. Silk predominantly light green. Grains bold, orange yellow. The variety is resistant to turcicum blight under field conditions. The plant does not lodge and escapes stem breakage under high fertility conditions.
- Plants tall vigorous with air placement at reasonable height. Leaves deep green, stilt roots strong which make the plant lodging resistant. Ears medium thick with compact green husk cover. Tussel branched and semi – compact. Silk predominantly light green. The variety is resistant to turcicum blight under field conditions. The plant does not lodge and escapes stem breakage under high fertility conditions.

**Maturity**

- Matures within 155 to 160 days in temperate zone and 125 to 130 days in intermediate zone.
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**Yield**

- Yield potential is 45 to 50 days q/ha under suitable management conditions.
- Yield potential is 45 to 50 days q/ha under suitable management conditions.
- Yield potential is 50 to 60 days q/ha under suitable management conditions.

**References**

2. KPMG. Processed Food and Agribusiness Opportunities for Investment in India. A knowledge Paper, KPMG, India 2013.


