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

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### 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	:	<i>Zea</i> L (Corn)
Species	:	<i>Zea mays</i> L (corn)

In terms of hectareage, 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 (Dhaliwal & 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

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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 5 to 7 bt does not show 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.

**Table 1:** Varieties of maize

Varieties	Yield Potential	Maturity	Recommendations
Composite C5 (Trikuta)	55-60 q/ha	110-115 day in intermediate zone	
Composite C6 (Shalimar)	50-60 q/ha	125-130 days in mid-elevations and 155-16 days in the valley	Hilly areas upto elevation of 1800m amsl
Composite C8	55-60 q/ha	110-115 days in mid elevation and 150-155 days in the valley	Recommended for Uri and Karnah belts
Composite C14	50-55 q/ha	Early maturing 135-145 days in valley and 100-110 days in intermediate zones	Recommended for high altitude areas from 5500 to 6500 ft amsl
Composite C15	50-55 q/ha	135-140 days	Recommended for high elevation upto 2250m
Super Composite 1 (Mansar)	50-60 q/ha	140-145 days in lower elevation and 105-110 in intermediate zones	Recommended for Uri and Karnah belts of the valley
Shalimar KG Maize 1	45-50 q/ha	120-125 days	Recommended for cold hills of Kashmir about 6500 ft amsl especially Machil and Gurez
Shalimar KG Maize 2	45-50 q/ha	120-125 days	Recommended for cold hills of Kashmir about 6500 ft amsl especially Machil and Gurez

S. No	1	2	3
Variety	Composite C-6 (C6) 1976	Composite C-15 (C15) 1976	Super 1 Mansar 1978
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. Tassel branched and semi – compact. Silk predominantly light green. The variety is resistant to turicum blight under field 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. Tassel branched and semi – compact. Silk predominantly light green. Grains bold, orange yellow. The variety is resistant to turicum 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. Tassel branched and semi – compact. Silk predominantly light green. The variety is resistant to turicum 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.	Matures within 155 to 160 days in temperate zone and 125 to 130 days in intermediate zone. Early maturity.	Matures within 155 to 160 days in temperate zone and 125 to 130 days in intermediate zone and 110 to 115 days in plains.
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

1. Baba SH, Showket Mir A. Maize based farming system S&T interventions in agricultural & allied sectors for strengthening livelihood security in Kashmir Division. Final Report of NSTMIS DST research project, Supplement # 02. Sher-e-Kashmir University of Agricultural Sciences & Technology of Kashmir, Shalimar Campus, Srinagar 190 025 (J&K) 2018.
2. Jayesh Shesh, Santosh Kumar Jha, Ritesh Kumar Singh, Swati Kunjam. Effect of de-topping and nitrogen levels on yield and nutrients uptake of maize (*Zea mays* L.). Int. J Res. Agron.x 2020;3(1):45-48.
3. Eleduma AF, Aderibigbe ATB, Sanni KO, Obabire SO. Effect of cattle manure on soil nutrients dynamics and performances of maize (*Zea mays* L) grown on sandy loam soil in forest-savannah transition zone southwest Nigeria. Int. J Horti Food Sci. 2020;2(2):05-09. DOI: 10.33545/26631067.2020.v2.i2a.41
4. Rosegrant MW, Paisner MS, Meijer S, Witcover J. Global food projections to 2020: Emerging trends and alternative futures. International Food Policy Research Institute, Washington DC, 2001. Available at <http://www.ifpri.org/sites/default/files/publications/gfp.pdf>.
5. Sharma KL. Measurement of the effect of area, yield and prices in the increase of value of crop output in India. Agricultural Situations in India 1977;32(6):349-351.
6. Sood J. Chhattisgarh will not allow GM crops. Down to Earth Magazine, 2011.
7. USDA-FAS. Corn Area, Yield and Production, 2013. Available at [www.fas.usda.gov/psdonline/](http://www.fas.usda.gov/psdonline/) (verified on 08.07.2013).
8. Lewer P, Bandurski RS. Occurance and metabolism of 7-hydroxy - 2 - Indolinone -3 - acetic acid in *Zea mays* phytochemistry 1987;26(5):1247-50 [http://dx.doi.org/10.1016/s0031-9422\(00\)81790-2](http://dx.doi.org/10.1016/s0031-9422(00)81790-2).
9. Ehmann A. N - (Q-coumaryl) - tryptamine and N-ferulyltryptamine in kernels of *Zea mays* phytochemistry 1974;13(9):1979-83. [http://dx.doi.org/10.1016/0031-9422\(74\)85129-0](http://dx.doi.org/10.1016/0031-9422(74)85129-0)
10. Ebrahim Zadeh MA, Pourmorad F, Hafezi S. Antioxidant activities of Iranian corn silk. Turk J Biol 2009;32(1):43-49.
11. KPMG. Processed Food and Agribusiness Opportunities for Investment in India. A knowledge Paper, KPMG, India 2013.