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D+1
 Cereal Crop: Maize
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Cultivation of Maize Crop

Vernacular Name- Corn, Indian corn, American corn(English), Makkacholam(Tamil), Makka(Hindi), Makka jonna(Telgu), Bhutta(Bangoli).

Importance- Maize is the third most importance cereal grain after wheat and rice. Globaly, Maize is known as “queen of cereals” because it has the highest genetic yields potential among the cereals. The term “maize” is drived from the ancient word mahiz from the Taino language, a now extinct Arawakan language, of the indigenous people of pre-Columbian America. The name “maize” is derived from the South American Indian Arawak name ‘mahiz’.

Maize is used as a staple food particularly in developing countries and as feed for livestock and raw material for many industrial products in developed countries.

In India, maize is used as human food (25%), poultry feed (49%), animal feed (12%), industrial (starch) products (12%), beverages and seed (1% each).

Origen: Maize is originated in Mexico, Andean highlands of Peru, Bolivia and Ecuador.

Distribution: Maize is grown in USA, Canada, Brazil, Mexico, China, India, Indonesia, France, and South Africa. In India Maize growing state is Andhra Pradesh, Karnataka, Rajasthan, Maharashtra, Bihar, Uttar Pradesh, Madhya Pradesh and Himachal Pradesh.

Classification of maize: The principal maize groups with their peculiarities, distribution and importance are furnished as follows:

1. Dent Corn (Zea mays var. indentata sturt)
2. Flint Corn(Zea mays var.indurata sturt)
3. Swet Corn(Zea mays var.saccharata sturt)
4. Flour Corn (Zea mays var.amylacea sturt)
5. Pop Corn(Zea mays var. everata sturt)
6. Pod Corn(Zea mays var. tunicata sturt)
7. Waxy Corn (Zea mays var. ceritina kulesh)

Climate: The climatic parameters are given blow:

- Warm season crop.
- It is grown in the latitude 58°N to 40°S up to an altitude of 3000 m from MSL.
- 750-1250mm rainfall during its life period.
- It is a short day plant.
- Optimum light is 32.2-86.1 klux.
- Optimum and maximum temperature 10°C.
- Optimum and maximum temperature for germination 7°C and 21°C respectively.
- Optimum soil temperatures for germination, early seeding growth are 15 to 27° and at tasseling 21 to 30°C.

Soil: Well drained sandy loamy to silt loamy soil are desirable. pH value ranges from 5.5 to 7.5. Saline and alkaline soil may be avoided.

Varieties and Hybrids:

Special type of maize verities in India

S.No	Corn type	Cultivars
1.	Quality Protein Maize (QPM)	H:HQPM 1 & HQPM 5 (all state of India), HQPM 7, Vivek QPM 9, Shaktiman 1,2,3,& 4 (Bihar)
2.	Baby Corn	H:HM-4, Prakash C: VL Baby Corn 1, Him 123, VL 64, PEHM-1,2
3.	Sweet Corn	H:HSC1 for J&K amd HP

		C:Madhuri, WIN Orange, Priya
4.	Pop Corn	C:Jawahar, Ambar popcorn, pearl popcorn, VL almora popcorn
5.	Green-Eared Corn	Harsha, Ashwini, Deccan,103, paras
6.	High Starch Corn	Ganga 111, Histarch, Deccan 103,105
7.	High Oil	HOP-1,2
8.	Fodder Maize	C:African tall,PFM-66, J 1006 & partap chari-6

Seed and Sowing: 15 kg/ha. For hybrid and 20 kg/ha. For composites.

- Spacing-60cm x 20cm with a plant population of 83,333/ha.
- Seed treated with Bavistin+captan in1:1 @ 2g/kg seed.

Method of Sowing:

- Raised bed sowing:
- Flat bed sowing:
- Ridges and furrow sowing:

Weed management:

Hoe and hand weed on the 17th or 18th day of sowing, if herbicides not applied.

- Pre-emgence application of Atrazine @ 1.0-1.5 kg a.i./ha in 600litre water.
 - Alachlor @ 2-2.5 kg a.i./ha.
 - Metolachlor @ 1.5-2.0 kg a.i./ha.
 - Pendimethalin @ 1-1.5 kg a.i./ha.
- } 3 days after sowing for control of many annual and broad leaved weed.

Manure and Fertilizers application:

Application of FYM @ 10 t/ha, 10-15 days prior to sowing supplemented with 150,70,70 NPK and 25 kg Zn/ha.

Fertilizers recommended for different maturity groups in India

Nutrients	Early season group(80-90 Days)	Medium group(90-100 Days)	Winter maize group
N	80-100 kg/ha	120 kg/ha	150-180 kg/ha.
P	60 kg/ha.	60 kg/ha	60 kg/ha
K	40 kg/ha.	40 kg/ha	40 kg/ha.

Water Management:

Irrigation scheduling for maize

Growth stage	Duration (Days)	No. of Irrigation		Irrigation frequency	
		HS	LS	HS	LS
Germination stage	1-14	1	1	At sowing 4 days	At sowing 4 days
Vegetative stage	15-39	3	4	12 days interval	10 days interval
Flowering stage	40-65	2	4	12 days interval	10 days interval
Maturity stage	66-95	1	2	10 days before harvest	10 days before harvest

Pest and disease Management:

Disease/Insects-Pest	Fungicide/Pesticide	Rate of application (g/Kg seed)
Turcicum leaf blight, Banded leaf blight and sheath blight	Bavistin+Captan in 1:1ratio	2.0
Brown stripe, downy mildew(BSDM)	Apran 35 SD	4.0

Pythium stalk rot	Captan	2.5
Termite and shoot fly	Imidachlorpit	4.0

Yield:

Yield of maize in different climatic regions

Region	Crop Duration (Days)	Mean Yield (t/ha.)	Maximum Yield (t/ha.)	Harvest Index (%)	Kernel Number/m²
Temperate	160	3.5	22	54	3360
Sub-Tropics	135	1.8	12	47	3000
Tropics	112	1.0	8	38	2750

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