

# Scientific cultivation of maize (*Zea mays*)

## KRISHI VIGYAN KENDRA, LOHIT IN NAMSAI DISTRICT, ARUNACHAL PRADESH

**Varieties:** Use suitable Composite/Hybrid seeds for cultivation like -

**Composite** : KISAN, NAVJOT, Compo-NLD, AMBER.

**Hybrid** : Ganga 5, Deccan hybrid, Hi-Starch, Prabal, Vivek

**Land Preparation** : Land should be prepared well by ploughing/hoeing.



**Manures & Fertilizers:** A combination of organic and inorganic fertilizer gives better yield.

Compost or FYM(Gobar) @5 t/ha should be applied

Nutrient	Requirement (Kg/ha)	Form	Fertilizer (Kg/ha)	For 1 Bigha (Kg/ha)
N	60	Urea	134	12.0
P <sub>2</sub> O <sub>5</sub>	40	SSP	250	16.5
K <sub>2</sub> O	40	MOP	67	4.25

FYM (GOBOR) or compost should be applied during land preparation. The entire quantity of SSP, MOP and half of the total urea is to be applied in furrows and covered with soil. Remaining half of the urea should be side dressed followed by earthing up operation.

**Seed Rate:** Sow 18-22 Kg seeds/ha.

**Seed Treatment:** Seeds should be treated with Bavistin @ 2g/kg of seed.

**Time of sowing:** Summer : **March - April**

Rabi : **September - October**

**Method of sowing:** Seeds should be dibbled at a depth of 3-4 cm in rows 65-75 cm apart and at a distance of 20-25 cm from seed to seed within the rows. Two seeds per hill are to be sown followed by thinning 10 days after germination retaining one seedling/hill.

**Weeding and intercultural operation:** Light hoeing and earthing up should be done as and when necessary. Weeds should be removed.

**Irrigation and Drainage:** Irrigation should be provided whenever available particularly during silking and grain filling stage. Provision of drainage is to be made for removing excess water.

### **Plant Protection: IPM Modules**

**Pre sowing-**Proper ploughing done to destroy stubbles, weeds and volunteers host. Remove all residue from



the

field. Seed treatment with *Tricoderma viridae* @ 4g per Kg of seed.

**Flowering to Cob formation**-Manual removal of infested plants.

One need based application of Dimethoate@ 1 litre/ha.

Matured cobs can be protected from bird damage by tying cobs with leaves of the same plant.

**Harvesting:** Harvesting should be done as soon as the husk covers turn brown and the silks are completely dry. Ears (cobs) should be thoroughly dried in the sun before shelling.

### Insect Pests

#### 1. Pink borer (*Sesamia inferens*)

##### Symptoms:

- Result of attack the plant weakness and cobs stunted.
- Stalk breaking, ear-dropping and Shrivelled ears.



Control measures:

- Deep summer ploughing.
- Destruction of crop stubbles and residues.
- Application of carbofuran dust @25kg/ha on whorl.

#### 2. Stem borer (*Chilo zonellus*)

##### Symptoms:

- Shot hole shown in new emerging leaves.
- Severe attack results in drying of central whorl of Plants-dead heart.
- Plants become stunted.

**Control measures:**



- Destruction and burning of crop stubbles and residues.
- Spray of Rogor 1ml or whorl application of carbofuran 3G @ 5-6 granules per whorl at 25 kg/ha at 20-25 DAG.



### 3. Aphid (*Rhopalosiphum maidis*)

#### Symptoms:

Nymphs and adults suck the Leaves/shoots and excrete honey Dew, on which sooty mold grow.

#### Control measures:

Spraying rogor 1ml/litre of water.



## Diseases

### 1. Downy mildew (*Perenosclerospora spp.*)

#### Symptoms:

Malformation of tassel.

#### Control Measures:

- The eradication of collateral and wild hosts near maize field and rouging infected maize plants has been recommended.
- Destruction of plant debris by deep ploughing and other methods.
- Use of resistant varieties like DMR 1, DMR 5 and Ganga 11. Seed treatment with Carbendazim 2.5 g/kg of seed and foliar spray of Mancozeb 2.5 g/l or Metalaxyl MZ at 2g/l is recommended.



### 2. Head smut (*Sphacelotheca reiliana*)

**Symptoms:**

- Malformed Tassel.
- Tassel infection may be confined to individual spikelets. In cases floral bracts grow out in to leafy structures, some times in to small shoots.
- Ears infected plants may be smutted or aborted with leafy buds replacing normal ears. Such plants do not produce pollen. Infected plants are dwarf with increased tillering.



such

**Control measures:**

- Field sanitation.
- Crop rotations.
- Seed treatment with Thiram or Captan 3g/kg seed