

reduced considerably. To control the weeds through chemicals, pre-emergence application of Atrazine or Simazine @ 2 a.i. kg / ha has been found promising. In integrated weed management practice, apply Atrazine or Simazine @ 1 kg a.i./ha at the time of sowing and one hand weeding followed by earthing up at knee high stage effectively control the weeds.



Maize + soybean intercropping

Inter-cropping System:

Adopt inter-cropping to get additional income viz., maize + pigeonpea, maize + soybean, maize + urdbean (1:1 ratio), maize + groundnut (2:2) and maize + ricebean. Intercropping of groundnut with maize found successful, which gives higher maize equivalent yield as compared to sole cropping of maize.

Crop protection:

Adopt timely plant protection measures to save the crop from disease and pest infestation.

Field Cricket: Cricket has been found causing severe damage to newly germinated plants. They cut the seedling at the base resulting into the complete loss of plant population in the field. Apply Carbofuran 3 G granule (Phorate) at the time of incidence.

Stem borer: Stem borer is the main pest for maize. The larva feed on leaves first and later it bores into the stem. The stem is riddle with hole and produce dead hearts. The pest can be controlled by application of Carbofuran or Phorate granules @ 1-2 gram per whorl at 30-40 days after sowing or at the time of incidence.

Cob Borer : This pest caused severe damage to the crop by eating the cobs. To control this pest, spray Monocrotophose 0.05 % at 80-90 days after sowing.



Cob borer damage ▶

Diseases : Cob borer damage **Brown spot, downy mildew, head smut, leaf rust and leaf blight:** Always use treated seed with Thiram or Captam @ 4 gm/kg of seed and to check the brown spot and smut diseases adopt crop rotation and remove the stubbles from the field. To control the downy mildew, apply copper fungicide such as captan or Dithane M-45 (0.8 %) solution. The best way to avoid these diseases is to grow resistant varieties, follow crop rotation and undertake timely sowing.

Harvest and post harvest technology:

The crop should be harvested when the grains are nearly dry (20-25 % moisture). First the cobs are removed from the standing crop. Harvested cobs are dried in sun before shelling. Green cobs with half matured grain are also harvested and used for eating as such after slight roasting in fire.

The shelling of dry cobs are to be done when the cobs are properly dried by using maize sheller developed by ICAR Research Complex for NEH Region, Umiam for saving of time and money. Store the grain in dry place either in Pusa Bin and to save the grain from store grain pest by using salphos tablets in seed bin.

Compiled and edited by :

A. S. Panwar, Jayanta Layek, L.L. Shivastava, Anup Das,
Ramkrushna G.I., Badapmain Makdoh,
Devika Jana and Vidyapati Taoram

ICAR Research Complex for NEH Region, Umiam

For further information, please contact:

Director,
ICAR Research Complex for NEH Region
Umiam, Meghalaya -793103

Designed & Printed at print21, R.G.Baruah Road, Guwahati-781024

Maize

(Production Technology)



Division of Crop Production
ICAR Research Complex for NEH Region
Umiam, Meghalaya-793103



Maize (*Zea mays* L.) is the second largest producing cereal crop of the North Eastern Hill Region (NEHR). It is grown in a wide range of climatic conditions and altitude ranging from low (upto 800 m), medium (800-1300 m) to high (1300- above) as a rainfed crop in upland and *jhum* land both as mono crop or mixed crop. It has very high yield potential and is a promising crop for the purpose of human consumption as well as animal feed. The average productivity of maize in NEH region is even lower than that of our national average and far behind global average, showing a greater need to enhance the yield potential of this crop. The yield of maize can be increased through adoption of high yielding varieties and improved technology. Therefore, to harvest a bumper crop, it is essential that the farmers of NEH region should use scientific technology given as under:

Selection of Soil:

Maize can be grown on a wide range of soil but thrives well in well drained loamy and sandy loam soil. Low laying area where water stagnation during rainy season occurs must be avoided.



Healthy cobs of maize

Seedbed preparation :

Two to three cross ploughing are necessary to get the soil well pulverized and weed free. It is desirable to sow crop on ridges to avoid damage due to water logging and to provide adequate moisture in the root zone. In case of flat surface sowing, earth up the crop 30 days after sowing. Apply lime (passed through 100 mesh



Small furrow in being made

sieve) @ 2 t/ha and incorporate into the soil at least 1-2 week before sowing. This practice may be followed once in three years cycle or alternate year depending upon the acidity of the soil.

Improved varieties:

Improved varieties provide an immediate and direct advantage to the farmers through adoption of appropriate agronomic practices. The varieties recommended for cultivation are as:

Variety	Yield (Q/ha)	Maturity (days)
RCM 1-1	45-55	125
RCM 1-2	35-40	110
RCM 1-3	45-60	125
RCM 1-75	45-65	125
RCM 1-76	45-65	125
DA-61-A	50-70	120
Vijaya Composite	50-55	125
Gujarat Makki-1	55-60	120
Lakshmi	50-55	125
Hemant	45-50	125

Seed selection and treatment:

Selection of healthy seed free from seed born disease is advisable for uniform and better germination. The seed should be treated with Thiram or Captan @ 4 g/kg seed, to avoid the seed borne disease in seedling stage.

Seed rate and spacing : Seed is being placed in furrows The seed rate varies according to seed size and spacing. Use optimum seed rate for desired plant population. The higher yield potential can be achieved through maintenance of 65,000 to 75,000 plants/ha, which requires 20-25 kg seed/ha. The spacing recommended for different altitudes are as follow:



Seed is being placed in furrows

Altitude/Variety	Row to Row (cm)	Plant to Plant (cm)
High altitude	40	20
Mid and Low Altitude	60	30
Local Varieties	30	15

The hybrid seeds require little wider spacing in comparison to composite and local.

Sowing time:

Timely sowing of maize crop is more important to fulfill the certain growing conditions at vegetative as well as reproductive phases. Though the sowing time depends upon the onset of the monsoon, but tries to complete the sowing as per the scheduled time given below:

For high altitude : Early March to end of April
For mid and low altitude: Early / mid-February to May

Manure and fertiliser:

Besides obtaining high yield, it is desirable to build up soil fertility for sustainable production. Apply well decomposed FYM @ 5-10 t/ha and incorporate it into the field at least one or two week before sowing. For obtaining high yield of maize and according to the soil test value 80:60: 40 kg N, P₂O₅ and K₂O/ha may be applied for hybrid and composite maize. While in case of local varieties 60:40:40 kg N, P₂O₅ and K₂O/ha should be applied. Half dose of nitrogen and full dose of phosphorus and potash should be applied at the time of sowing. Remaining half N may be applied in 2 equal splits as 1st split at knee high stage of crop i.e. at 3-4 week after sowing and 2nd at pre-flowering stage as side placement.



Application of lime and FYM at sowing

Soil Amendment:

The soil of NEH region is acidic, hence require correction. Therefore, powdered lime or press mud @ 2 t/ha must be applied 2-3 weeks before sowing in the field. The amendment should be broadcast and mixed up through ploughing and cross ploughing. This is essential to get beneficial effect of applied fertiliser and to increase the availability of other nutrients from native soil. This process of lime application should be repeated once in every three years.

Interculture and weed control:

The crop should be kept free from weeds upto 35 days, which is the critical period. At this stage weeding and earthing up should be done to maintain good stand. If weeding is delayed at this stage the yield