MAIZE

Designed by:

Crop Manager Team

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Varieties

Common varieties include:longe 1, longe 2H, longe 4, longe 5H, longe 2H, white star, western queen, Kawanda composite A.

Soil requirement.

Maize requires a well-prepared field. Soils should be deep, fertile and well drained. For a new field plough twice before planting, only for machine planting might a fine seed bed be required.

Climatic conditions

Maize is grown in temperatures between 18-27degrees Celsius during the day and around 14degrees Celsius at night

Land Preparation

Plough at a depth of 15-20cm when soil moisture is right, that is when soil particles 15cm below the surface separate and only thin portion sticks to the figure but no ball forms. Harrow twice with 2-3 passing to break the clods.

Make furrows a day before or on the day of planting spaced at 75cm or 8cm deep

Planting

Best time to plant: You need to plant your maize at the onset of the rains either in March or in August to September. However, you could also plant your maize when it's still dry but during the time when the rains are expected soon. In this case though, you need to treat your seeds against soil pests before planting.

Depth of planting: make an estimate of about 5-7 cm deep, and you can make the holes deeper for dry planting and sandy soil. Saw at least 3 seeds per hole. Sawing should be in rows then thinly cover with a layer of soil.

Spacing: Adopt a spacing of 45 cm between rows and 20 cm between plants in the row.

Population: 10 - 11plants/m2.

Fertilizer application

Apply NPK fertilizers as per soil test recommendation as far as possible. If soil test recommendation is not available adopt a blanket recommendation of 135:62.5:50 NPK kg/ha.

Apply quarter of the dose of N; full dose of P2O and K2O basally before sowing.

In the case of ridge planted crop, open a furrow 6 cm deep on the side of the ridge, at two thirds the distance from the top of the ridge.

Apply the fertilizer mixture along the furrows evenly and cover to a depth of 4 cm with soil.

If bed system of planting is followed, open furrows 6 cm deep at a distance of 60 cm apart.

Place the fertilizer mixture along the furrows evenly and cover to a depth of 4 cm with soil.

When Azospirillum is used as seed and soil application, apply 100 kg of N/ha (25% reduction on the total N recommended by soil test)

Weed control

Weeding maize is quite simple and you can do it manually with hand hoe or spraying. We recommend that you weed your maize plantation as early as possible; at least within the first 45 days.

Weeding depends on the environment, rainfall amount and the soil weed bank.

Broad spectrum herbicides' like roundup could also be used before ploughing the field during land preparation to control perennial weeds and to generally control weeds in young plants.

Disease management

Northern Corn Leaf Blight

Symptoms

- Long, elliptical, grayish-green or tan lesions ranging from 2.5 to 15cm in length develop firston the lower leaves
- Severe infection causes premature death and gray appearance that resembles frost ordrought injury

Management

- Grow tolerant hybrids.
- Apply foliar fungicide sprays e.g Abacus, Amistar, Bravo, Duett and Score when lesions occur on 1/3 of the leaves before pollination
- Clean ploughing, crop rotation, or both may

Northern Corn Leaf Spot

Symptoms

- Produces circular or oval foliar lesions with concetric zones within them
- These lesions may have a reddish-brown appearance on the leaves, sheaths and husks
- Infected kernels can develop a black, felt like mold

Management

- Grow Seed Co tolerant hybrids
- Apply foliar fungicide sprays e.g Abacus, Amistar, Bravo, Duett and Score when lesions occuron 1/3 of the leaves before pollination
- Clean ploughing, crop rotation, or both

Common or Boil Smut

Symptoms

- Kernels are replaced by galls
- The galls are at first covered with a glistening, greenish-white to silvery-white tissue that later ruptures to release masses of black smut spores
- Severe in young, actively growing plants after mechanical injuries

Management

- Grow Seed Co tolerant hybrids
- Avoid mechanical injuries to plants during cultivation and spraying
- Maintain well-balanced soil fertility
- Remove and burn galls from infected plants before they rupture

Fusarium Ear Rot

Symptoms

- The caps of individual kernels or groups of kernels scattered over the ear develop a salmon pink to reddish discoloration
- A powdery, cottony pink mold forms later. Infection commonly follows channels made by earworms or stalk borers.

Management

- Grow Seed Co tolerant hybrids
- Control earworms, stalk borers and other ear feeding insects with insecticides e.gDipterex, Thionex, Karate Zeon and Decis Tab
- Harvest as soon as moisture levels permits.

Maize Streak Virus

Symptoms

- Long discontinuous chlorotic streaks distributed uniformly over all leaf surfaces
- Chlorosis with broken yellow streaks along the veins that contrast with the dark green of normal leaves
- Poorly filled cobs or lack viable kernels

Management

- Grow Seed Co tolerant hybrids
- Control vectors using seed treatment with insecticides e.g Gaucho and Criuser followed by foliar sprays with insecticides e.gDimethoate, Fenvalerate and Imidacloprid, plant certified seed only

Pinking

Causes

- A physiological disorder caused by genotype by environment interaction and occurs sporadic innature
- Common on hybrids with loose husks that expose the kernels at the tip of the cob to sunlight, which triggers the pink pigment formation

Notes

- Should not confused with Gibberella ear rot that causes a red discolouration starting from the cob tips due to fungal growth
- Pinking is restricted to the pericarp and does not affect flour colour after milling

Multiple Ears on same Shank

Causes:

- The condition is rare but some hybrids may be genetically prone to developing multiple ears on a single ear shank. A threshold genetic trait may be triggered by particular stress events that occur during primary ear formation
- A secondary ear may develop if the first ear does not adequately set seed during pollination
- A third, fourth, and fifth ear could develop on the same node, as each preceding ear did not set adequate seed

Management

- Minimizing crop stress conditions that might impact normal development of the primary ear,including using appropriate pest management practices, maintaining appropriate soil fertility,selecting adapted hybrids and seeding rates consistent for soil yield potential and date ofplanting

- Favourable growing conditions also result in more than one ear per plant in certain hybrids especially at lower than normal plant populations.

Harvesting

Harvest is best at 7-8th week of planting, harvest your maize when the cob is well filled or dry for the drying type or harvest it fresh.