



Crop Management Practices

An Agricultural Extension Initiative of **INDORAMA**

Maize



INDORAMA



UREA
N - 46% +

...E Don Beta!



For Agricultural use only

NET WEIGHT
50 Kg.

Maize



Introduction

Nigeria produces approximately **8 million metric tonnes of Maize per year**. Maize is one of the most versatile emerging crops having wider adaptability under varied agro-climatic conditions. Globally, Maize is known as queen of cereals because it has the highest genetic yield potential among the cereals. It is cultivated on nearly 150m ha in about 160 countries having wider diversity of soil, climate, biodiversity and management practices that contributes 36% (782 MT) in the global grain production.

Soils

Maize can be grown successfully in variety of soils ranging from loam-sand to clay-loam. However, soils with good organic matter content having high water holding capacity with neutral pH are considered good for higher productivity

Fertilizer Management

Maize hybrids are responsive to nutrients applied either through organic or inorganic sources. The rate of nutrient application depends mainly on soil nutrient status/balance and cropping system.

- Application of **120-150 kg N (Indorama Urea 264-330 kg/ha) @, 70-80 kg P₂O₅, 70-80 kg K₂O and 25 kg ZnSO₄ ha** is recommended. Full doses of P, K and Zn should be applied as basal preferably drilling of fertilizers in bands along the seed using seed-cum-Fertilizer drills.
- Nitrogen (Indorama Urea) should be applied in splits for higher productivity and use efficiency.
- Nitrogen application at grain filling results in better grain filling
- One or two sprays of 2% Indorama Urea and application of micronutrient mixture can be given in 3-5 week-old crops to restore the vigor which may have received setback because of delayed weeding and inadequate drainage.
- The Fertilizers should be applied 10-12 cm away from the base of the plant to avoid plant injury. Soon after application, the Fertilizer on the soil surface should be covered to minimize losses.
- Volatilization losses in Indorama Granular Urea are almost half of Prilled Urea. Lesser quantity of Indorama Granular Urea gives better yields than Prilled Urea due to saving in leaching and Volatilization losses.

Maize Life Cycle



Seed Rate

About 20 kg of seed would be needed to sow one hectare. Seeds should be sown about 5 cm deep to ensure good seedling growth and vigor.

A clean, smooth, deeply ploughed but firm seedbed is ideal. It is desirable to sow the crop on ridges to avoid damage due to waterlogging and to provide adequate moisture in the root zone.

Weed Control

Weeds having broad leaves and most of the grasses can be conventionally controlled with a single pre-mergence application of Atrazine @ 1kg/ha. In addition, for 2 inter-cultivations are needed to keep weeds under check.

Insect Pest Management

Control of Chilo (Stem Borer) and Sesamia (Pink Borer): For control of Chilo and Sesamia, foliar spray of 0.1% Endosulfan {700 ml (35 EC) in 250 litre water} 10 days after germination is very effective.

The Maize Stalk Borer, Chila partellus is a major pest, foliar application 0.1% Endosulfan (35EC) or 0.05% Lindane (20.EC) should be applied in

10-15 days old crop followed by second application of 4% Endosulfan granules or 1% Lindane granules @ 15 kg/ha in plant whorls a fortnight later, if necessary.

Disease Management

The best way to avoid these diseases is to grow resistant varieties and undertake timely sowing. Turcicum and Maydis Leaf-blights can be controlled by 2 or 3 sprays of Zineb (Dithane 2-78) @ 2.5kg/ha 1000 litres of water at intervals of 10-15 days.

Harvesting

Harvesting is done when grain moisture reaches 20-25%. This can be noticed when the cobs-sheath (husk) dries up completely. After harvesting, cobs should be dried in sunlight for about a week. The cobs are then ready for shelling. Hand-sheller and Powersheller, driven by current or tractor are available and they can be used for shelling. After shelling, the grain can be dried for 2 to 3 days, cleaned and graded. The seed treatment with thiram@2gram per kilo of seed can be done and stored safely when seed moisture is about 8 to 10% . Storing in air tight containers reduces and other storage pests and diseases.

Deficiency Chart of Micronutrients

Boron: Discoloration of leaf buds. Breaking and dropping of buds

Sulphur: Leaves light green. Veins pale green. No spots.

Manganese: Leaves pale in color. Veins and venules dark green and reticulated

Zinc: Leaves pale, narrow and short Veins dark green. Dark spots on leaves and edges.

Magnesium: Paleness from leaf edges. No spots Edges have cup shaped folds. Leaves die and drop in extreme deficiency.

Phosphorus: Plant short and dark green. In extreme deficiencies turn brown or black. Bronze colour under the leaf.

Calcium: Plant dark green. Tender leaves pale. Drying starts from the tips. Eventually leaf buds die.

Iron: Leaves pale. No spots. Major veins green.

Copper: Pale pink between the veins. Wilt and drop.

Molybdenum: Leaves light green/ lemon yellow/orange. Spots on whole leaf except veins. Sticky secretions from under the leaf.

Potassium: Small spots on the tips, edges of pale leaves. Spots turn rusty. Folds at tips.

Nitrogen: Stunted growth. Extremely pale color. Upright leaves with light green/yellowish. Appear burnt in extreme deficiency.

**THE COLOUR REPRESENTED ARE INDICATIVE.
THEY MAY VARY FROM PLANT TO PLANT**