

Corn Nutrition, Physiological, and Weed Management:

Nutrient Management

Planting time is a very important factor in Maize cultivation.

Organic Manures

An application of organic manure is a must to get a good crop of Maize. The application of organic manure improves fertility and ensures good tilth and improves the water holding capacity. Therefore, an adequate quantity of organic matter should be added to soil before sowing in the form of farmyard manure, compost or green manure.

Fertilizers and Micro nutrients

Fertilizers should always be applied based on the fertility status of the soil and yield expectations. The quantity of fertilizers to be applied depends mainly on the soil status and the preceding field management. The recommendation below is a general guideline and the exact quantity of the fertilizer required should be determined after proper soil test. General fertilizer recommendation of major nutrients is given below.

Method of Fertilizer Application

One fourth of Nitrogen and total quantity of Phosphorous as well as Potash should be applied before sowing. The rest of the Nitrogen should be applied in two unequal doses. Half of the total nitrogen (75 kg/ N/ha) should be top-dressed at knee-high stage, while the rest of the Nitrogen should be applied from boot leaf to flowering stage. Nitrogenous fertilizer should be carefully applied 15-20 cm away from the plants to avoid any leaf injury. No Nitrogen fertilizer should be applied after flowering.

Nutrient Imbalance

Nitrogen (N)

Plants are spindly, pale and stunted. Lower leaves develop a yellow color in the shape of an "inverted V" beginning at the tip and following the mid-vein. Leaves may begin to die (fire) at the tip. Symptoms advance up the plant to younger leaves. Ears are small and pinched at the

tip. Symptoms are favoured by cold, pounded, dry or low organic matter soil and incorporation of low-N residues.



Typical leaf symptoms of 'N' deficiency

Phosphorus (P)

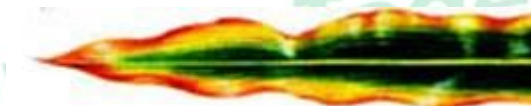
Leaves of plants are bluish-green and slightly narrowed, turning reddish-purple starting at the tips and along the edges. Leaf tips may die. If conditions for P uptake improve, newer leaves may be symptom free. Symptoms are seldom observed on knee-high and larger plants. Ears may be small and misformed, twisted with one or more kernel rows missing on one side of the cob.



Typical leaf symptoms of 'P' deficiency

Potassium (K)

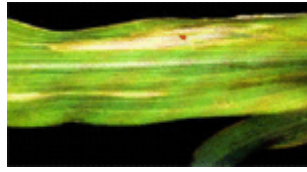
Symptoms are seldom seen before plants are knee-high. Edges of lower leaves turn yellow and die (fire), starting at the tip. Leaves may break away. Plants are shortened. Ears are small and chaff with poor tip-fill. Deficiency is favored by wet or compacted soils; sands and strongly weathered soil; organic soil; and heavy removal by previous crop.



Typical leaf symptoms of 'K' deficiency

Zinc (Zn)

This is major micro nutrient deficient in most maize growing areas. Symptoms are rare beyond seedling stage. Yellow to white bleached bands appear on the lower part of leaves while the mid-vein, margins and tip remain green. New affected leaves are sometimes described as "white bud". The deficiency is favored by high soil phosphorus, high pH, cool, wet soil and low organic matter such as from exposed subsoil.



Typical leaf symptoms of 'Zn' deficiency

Boron (B)

This deficiency is rare. Irregular white spots occur between leaf veins and may combine into white stripes with raised waxy appearance. Bush-shaped plants often fail to shoot a tassel or ear. Deficiency is favored by drought, high pH and sandy soil low in organic matter. Boron toxicity can cause yellow, dying leaf margins and tips.



Symptoms of 'B' imbalance

Magnesium (Mg)

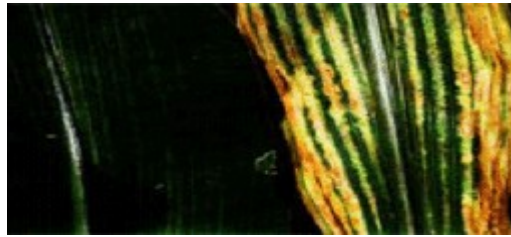
Yellow-white streaking occurs between veins of lower leaves. Eventually margins and tips of older leaves become reddish purple, then die. Deficiency is favored by low pH, sandy soil and high potassium levels.



Typical leaf symptoms of 'Mg' deficiency

Manganese (Mn)

Deficiency is rare. The area between leaf veins turns pale green-yellow. Stalks are thin and limber. Symptoms are favored by peat or muck soil, high pH and sandy soil high in organic matter.



Typical leaf symptoms of 'Mn' deficiency

Sources and Links

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