# Nitrogen deficiency in Maize

## Prevention

- Test your soil for nitrogen levels 1-2 months before planting.
- Practice soil conservation and carry out cultural practises to prevent erosion.
- Apply lime and manure to improve water holding capacity and minimize leaching of nitrogen.
- Keep the field weed-free to reduce nutrient competition.
- Rotate and intercrop with leguminous nitrogen-fixing crops e.g. beans, cowpeas, soya bean, etc.
- Plant early to take advantage of the nitrogen flush.
- Apply compost or mulch to preserve microorganisms and other useful organisms that assist in nitrogen cycling.
- Use nitrogen-fixing agroforestry such as *Leucaena*, *Calliandra*, *Sesbania* spp. and alley crops with deep roots to help intercept leached Nitrogen.
- Plant varieties that utilize N more efficiently such as KDH4, KDH5, KDH6, WH003 (0-1000 masl), WS102 and WH002 (0-1200 masl).

## Monitoring

- Test soil for N levels yearly.
- Look out for affected plants in the field with:
  - Yellow colouration in V shaped pattern from the stem which progresses from the leaf end to the stem.
  - Yellow colouration that progresses from the lower to upper leaves.
  - Stunted crops showing chlorotic symptoms. They may occur in patches or in the whole field.
  - Take action when the V shaped yellow colouration appears on the leaf.

## Direct Control

- Use bio-slurry from biogas digesters and from animal sheds at the rate of 1 litre/square metre (4000L/acre).
- Use organic fertilizer (e.g. compost, farm yard manure) at the rate of 4 tons per acre.
- Use Yad bio-vitalizer organic fertilizer at a rate of 750 kg/ha.
- Leave the farm fallow for at least 1 season.
- Incorporate *Tithonia diversifolia* in soil at a rate of (2 tons/acre).
- Top dress with N fertilizer in 2 splits per crop at knee high and flowering (CAN, AS, Urea, NPK).

## Direct Control

- Apply inorganic basal fertilizer with N during planting as recommended after soil testing (DAP, NPK, Mavuno, YaraMila cereal).

## Restrictions

- Use rates recommended after soil testing.
- When applying fertilizers always wear protective clothing.
- Excessive use can lead to eutrophication in water bodies affecting aquatic animals.
- Inappropriate application can lead to undesired changes in soil pH and scorching of the plant.
- Top dress with N fertilizer in 2 splits per crop at knee high and flowering (CAN, AS, Urea, NPK).