Prevention of phosphorus deficiency in maize

Recognize the problem
Phosphorus is one of the most critical nutrients for maize production. Its deficiency results in reduced yields and is common in soils in many parts of Malawi. Symptoms of phosphorus deficiency are that young plants look dwarfed and thin with dark green leaves. Leaf margins, veins and stems show purple tints which may spread over the whole leaf blade. Phosphorus deficiency is also manifested by reddish discoloration at juvenile stages of growth.

Background
Phosphorus helps the maize crop plant to better establish itself, get good development, hasten maturity stage, prevent harvest losses, and improve the overall maize yield. Its deficiency in soil therefore results in catastrophic consequences. Its deficiency is among others exacerbated by acidic or very alkaline conditions, low organic matter, cold or wet conditions and soils with low phosphorus reserves.

Management
Phosphorus deficiency can be managed by applying the following:

- Apply manure e.g. well decomposed compost manure made from plants. Apply 12.5 tonnes/Ha at least five weeks before planting maize. This can be achieved by applying an equivalent of 20 L tin of manure (16-18 Kg) by broadcasting every 8 metres/steps. If manure is not adequate, apply 2 handfuls (0.5-1.5 kg) per planting station and mix with the soil before planting.
- Apply inorganic fertilizers such as 23:10:5+6S+1.0Zn at the rate of 100 kg/Ha using a bottle top of a 300 ml glass Fanta bottle with lining inside at 10 cm away from the planting station and 10 cm deep with planting stations spaced at 25 cm apart (one-one planting pattern).

The recommendations in this factsheet are relevant to: Malawi

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