Maize needs phosphorus for good growth

Recognize the problem
Maize leaves that become brown to red (see photo right) may lack phosphorus. Leaves appear burnt and dry up in severe cases. The affected plants are underdeveloped and the older leaves drop early. A lack of phosphorus will reduce maize yields. Shortage of phosphorus in maize fields does not spread like a disease since plants are only affected in patches where this element is in short supply.
In some maize varieties like "Githigo" (in Kikuyu) and Hybrid (H614D), the sheaths are naturally red in colour due to the natural chemical anthocyanin. It can be confused with maize lacking phosphorus. Anthocyanin colouring occurs in the whole field while lack of phosphorus occurs in small areas.

Background
Phosphorus is important for the germination of seeds, the production of flowers and fruits and the growth of roots. There are several reasons why maize cannot get enough phosphorus. Phosphorus is washed from the soils during heavy rainfall and cool temperatures.
In acid (sour) soils, phosphorus is blocked and may not be available for maize use. Maize may also struggle to take up phosphorus because soils are too dry.
Since there are many reasons for lack of phosphorus, it is important to discuss this with the Ministry of Agriculture staff on the best advice. The main reason for a shortage of phosphorus is probably low rates of fertilizer application.

Management
You can treat plants which show a lack of phosphorus but it is much better to ensure that there is enough in the soil before sowing maize seeds.
• Prepare seedbeds early, two (2) months before planting and add vegetative materials such as maize stovers. (Use maize stovers only if they are free of diseases and pests such as stem borers.)
• Plant at the onset of rains using fertilizers that contain phosphorus like DAP, TSP, SSP, NPK and Compost manure.
• Monitor your crops for early detection and corrective action.
• Treat early symptoms of phosphorus deficiency by applying foliar feeds like Agro-leaf with high Phosphorus on affected plants (spot sprays).
• For further advice contact the Ministry of Agriculture Extension staff, KARI, KEPHIS and other research institutions.

The recommendations in this factsheet are relevant to: Kenya

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