

Prevention of boron deficiency in pawpaw

Recognize the problem

Boron deficiency in pawpaw results in poor quality and a reduced yield of fruit. The problem of boron deficiency is common in many parts of Malawi. Symptoms of boron deficiency in pawpaw are deformation of new leaves and the young leaves becoming distorted and brittle. Mature plants are dwarfed/stunted and fruit set is severely reduced. The affected fruit tend to be seedless, poorly developed and deformed.

Background

Boron is a minor element but plays an important role in nitrogen metabolism, protein formation, cell division, and cell wall formation. It also helps to maintain a balance between sugars and starches in plants. Boron is also essential for pollination and seed production. Its absence in soil results in deformation of new leaves and the young leaves becoming distorted and brittle. Often the deformed fruit caused by boron deficiency are mistaken for a viral infection.

Management

Boron deficiency can be managed by applying the following:

- Apply 5-10 kg of well decomposed manure per plant annually at the beginning of the rainy season.
- Apply 0.5-5 g of Borax fertilizer around the base of a young pawpaw plant. For mature plants, foliar spray applications of water-soluble boron can correct a boron deficiency more rapidly than soil applications.

Leaves of boron-deficient pawpaw plants are deformed and bunched at the apical meristem. (Photo by Wayne Nishijima)



Poorly developed and deformed fruits due to boron deficiency. (Photo by Wayne Nishijima)



The recommendations in this factsheet are relevant to: Malawi



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