

Zinc Deficiency in Citrus

BARC

SOIL SCIENCE UNIT
BRUNEI AGRICULTURAL
RESEARCH CENTRE

Citrus trees need the micro-nutrient elements such as zinc, copper and manganese for healthy growth and productivity. A lack of one of these elements in the tree can affect its health, yield and fruit quality. Zinc deficiency is found widely in all citrus growing areas and often occurs in association with manganese deficiency.

Symptoms

Symptoms of zinc deficiency appear on new growth and include distinctive chlorotic leaf pattern, small leaves and short internodes. The chlorosis develops in interveinal areas of the leaf, leading to a striking light green to yellow discoloration against an irregular dark green background, particularly the lateral veins. When the deficiency is mild, the symptoms usually develop only on a few widely scattered terminals. Leaves may be narrow and erect in growth at the terminals. In extreme cases of zinc deficiency the new growth appears bushy and upright and in advanced cases the tree is bushy and stunted, and twig die-back is common.

Zinc deficiency can be recognized by looking at the leaves. Where

symptoms are not clear, leaf analysis can confirm zinc deficiency. Analysis can also reveal the level of deficiency, giving the grower time to prevent a severe deficiency.

Treatment

Foliar sprays are most effective in controlling deficiencies of zinc. The sprays should be applied in the 'post bloom' stage when the leaves will absorb the nutrient readily.

The following foliar applications of zinc may be useful to correct zinc deficiency:

Zinc sulphate

Zinc sulphate sprays can be applied effectively to cure zinc deficiency. It leaves less residues on leaves and fruits. It must be applied at least three days before rain is forecast or an overhead irrigation is due. The spray consists of 150g zinc sulphate (23% zinc) in 100 litres of water or 100g zinc sulphate (36% zinc) in 100 litres of water.

Zinc oxide

Thoroughly pre-mix the zinc oxide into a paste before diluting with water. Add 200g of citrus grade zinc oxide to 100 litres of water. Vigorous agitation is important to avoid settling out.

Other than the fertilizers mentioned above, different types of foliar fertilizers containing zinc elements that are available in the market, can also be used for controlling zinc deficiency of citrus.

