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Growth and Yield Analyses of Citrus Orchard's Farmers

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Abstract

Almost all the Citrus fruit-trees' centers in Java and Bali, had been destroyed by green disease. Some farmers tried to establish new orchards around but out of the old centers. Some were successful, but most of them were not, due to some reasons; (a) the new locations were not free from infection or ecologically were not suitable and (b) lack of knowledge and skill needed for successful farming.

To make those orchards more productive, we need a scientific based solution. For that reason a thorough field survey was carried out. This survey showed two types of citrus orchard performance. The first was a young depressed, not yet productive citrus orchard of 3-4 year old, and the second was a depressed productive citrus orchard of 6-10 year old.

The young not yet productive orchard characterized with broomstick and ellipse canopy type. The light distributed more evenly in the broomstick canopy than in the ellipse canopy. The growth rate of the two was however the same, that was very low. Except Calcium, the macro and micro nutrient status in the soil as well as in the leaf-tissue was optimum to very high. The Calcium status in the leaf tissue was deficient, although in soil was high enough. All the fact indicates that the main issue in this orchard was the poor aeration, due to the poor drainage, and the unproductive canopy structure.

On the contrary the second orchard (the depressed fruiting trees) showed excessive nutrient status, in the soil as well as in the leaf tissue, except for nitrogen that was low. The canopy structure was umbrella type. The main issue for this orchard type is, therefore, how we can let the tree growths vigorously for at least one year without bearing fruits, and just than be fruited in the next following years.

This paper also discusses the measurement techniques to make unproductive orchard to be more productive.

Keywords: Canopy structure, citrus, growth analyses, nutrient status, soil and leaf tissue analyses