



Navel orange production in relation with replacement of chemical fertilizers by organic manures on sandy soil in Egypt

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Abstract: The possibility of reducing use of mineral fertilizers by partial substitution with organic manure and the effects of them on growth, nutrients status, yield and fruit quality of Washington navel orange planted in Sadat city, El Minufiya governorate, Egypt were studied during two successive seasons. Combination of market residue compost with chemical fertilizers were applied in different ratios. Growth (tree canopy & leaf area), fruit characteristics (number, weight, peel thickness, total soluble solids, total acidity & ascorbic acid "V.C."), yield, crop efficiency, macronutrients (N,P,K); micronutrients (Fe,Zn,Mn,Cu); heavy metals (Pb,Ni,Cd) in the leaves & fruits were determined. Furthermore, all applications led to sufficiency levels of mostly nutrients in orange leaf and maintained the permissible limits in the juice for good health of the human. It can be concluded that fertilizing Navel orange tree grown on sandy soil with combinations of chemical fertilizers + organic manure at ratios 1:1 till 1:3 which led to improve the growth, increase the yield and maintain fruit quality.

Keywords: chemical fertilizers, organic manure, navel orange, growth, nutrients, fruit quality, yield.

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