



Constraints in Kinnow Orchards of Arid-Irrigated Zone of Punjab

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Abstract : An extensive survey of 27 Kinnow mandarin orchards located in the arid tropical climate of north India was conducted during 2007–2010. Kinnow orchards soils were found poor of fertility status. The orchard soils had very high pH values, low level of EC and medium level of CaCO₃ content. The values for available nutrients in soil were found to be as very low of N, P, K and Zn. Values of Cu, Mn and Fe ranged between high to low. The leaf macronutrient values were medium to high in N, P ranged between medium to low in K. The leaf micro-nutrient contents were as follow, ranged from medium to high in Mn, However Cu, Fe and Zn were in high levels. These reference values of soil and leaf analysis were later observed to be well within the range of values obtained for high performance orchards (138.10–142.70 kg tree⁻¹), confirming the hypothesis that soil fertility and leaf nutrient levels maintained under high yielding orchards could be used provisionally as nutrient diagnostics. Nutrient constraints in the form of N, P, K, Mn, Cu, Fe and Zn were identified using these diagnostics, which deserve a place in a fertilizer program of Kinnow orchards of the region to obtain sustainable optimum fruit yield.

Key Words: Constraints, Kinnow Mandarin, North India, Nutrient Diagnostics, Leaf Analysis, Soil Analysis, Optimum Yield.
