Studies on Irrigation and Nutrient Interactions in Sweet Orange (Citrus sinensis Osbeck)

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Abstract : Sweet orange (Citrus sinensis Osbeck) is one of the most important commercially cultivated fruit crop in India. It stands on second position amongst citrus group after mandarin. Irrigation and fertigation are vital importance of sweet orange orchard and considered to be the most critical cultural operations. The soil acts as the reservoir of water and applied nutrients, the interaction between irrigation and fertigation leads to the ultimate quality and production of fruits. The increasing cost of fertilizers and scarcity of irrigation water forced the farmers for optimum use of irrigation and nutrients. The experiment was conducted with object to find out irrigation and nutrient interaction in sweet orange to optimize the use of both the factors. The experiment was conducted in medium to deep soil. The irrigation level I3,drip irrigation at 90% ER (effective rainfall) and fertigation level F3 80% RDF (recommended dose of fertilizer) recorded significantly maximum plant height, plant spread, canopy volume, number of fruits, weight of fruit, fruit yield kg/plant and t/ha followed by F2 , fertigation with 70% RDF. The interaction effect of irrigation and fertigation on growth was also significant and the maximum plant height, E-W spread, N-S spread, canopy volume, highest number of fruits, weight of fruit and yield kg/plant and t/ha was recorded in T9 i.e. I3F3 drip irrigation at 90% ER and fertigation with 80% of RDF followed by I3F2 drip irrigation at 90% ER and fertigation with 70% of RDF.

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Keywords : sweet orange, fertigation, irrigation, interactions

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