

EVALUATION OF CITRUS PROPAGATION AND CULTIVATION TECHNIQUES

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Thesis

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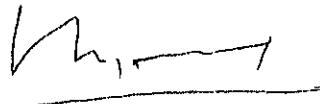
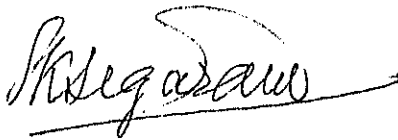
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## ABSTRACT

Five trials were conducted on the propagation of citrus.

In the first trial seeds soaked in six concentrations, 10 to 100 ppm, of NAA and IBA for 12 hours significantly increased germination from 48 to 76%, averaged across all the five citrus types tested: grapefruit (Citrus paradisi), pummelo (C. maxima), local mandarin (C. reticulata), sweet orange (C. sinensis) and local lime (C. aurantifolia). Soaking seeds in water alone for 24 hours increased germination to 68%, not significantly different from hormone treatment for 24 hours.

In the second trial rooted cuttings potted for four or eight weeks prior to field planting had significantly greater shoot elongation and shoot and leaf number than those field planted immediately on rooting. Growth declined significantly however when cuttings were kept in pots for eight weeks.

In the third trial air-layered shoots of lemonlime (C. lemon x C. aurantifolia) rooted in only four to seven weeks, Philippine red lime (C. calamondin) took 8 to 12 weeks. Even though less than the recommended size, when 3mm diameter shoots were air layered, all rooted, but growth was significantly faster with air layered shoots of 5 and 10mm. The subsequent growth of rooted air layers was significantly faster when cut from the mother tree one or two months after initial root formation.

In the fourth trial chip budding had 91 to 94% budtake on a Florida rough lemon rootstock 6 to 10.0mm diameter. Inverted T budding had 93% budtake on rootstocks 10mm or more in diameter but only 87% on those less than 10mm. Eighteen weeks after budding pineapple sweet

orange had more growth than Bibile sweet orange and had greater bud take, 96% versus 85% and the time to maximum bud take was less, by four weeks to eight weeks.

In the fifth trial local acid lime grew faster than grapefruit, sweet orange and Bali mandarin when planted in the field at one year old and compared at two years. All four varieties had a significant increases, up to 200%, in their vegetative growth when irrigated by drip irrigation with the same quantity of water applied by handwatering.

