

Technologies

- Retrofitting of Citrus nursery phase for optimizing the production costs of planting stock. 1. The technology restricts the nursery phase to about 11-12 months through direct seeding compared to the traditional citrus nursery system (18-20 months) thus reducing in the cost of the nursery (33-52%) than the traditional method.
- Palates of Microbial consortium for better soil health and growth response of citrus.
- Customized micronutrient mixture for addressing multiple micronutrient deficiencies in Nagpur mandarin orchard in Central India. It's a tailor-made micronutrient mixture to enhance citrus productivity.
- Leaf nutrient and soil suitability standards were developed and the INM schedule has been standardised to save 25% chemical fertilizer.
- Fertigation schedules developed with 30% saving on fertilizers and 40% saving on water (compared to the conventional method).
- Technology for plantation of Nagpur mandarin and acid lime on raised-bed with fertigation for reduced *Phytophthora* incidence and higher yield has been developed.
- High-density Planting of Nagpur mandarin and acid lime for higher yields and early income.
- Subsurface Micro-Irrigation and fertigation schedule for quality production of Nagpur mandarin. Reduce cultivation costs by saving water as well as labour, enhancing input-use efficiency, safeguarding the environment and saving water up to 60-70%.
- Management of citrus leaf miners using pheromone lure has been standardized. Percent reduction of citrus leaf miner infestation was up to 55% both in nursery and open field over a period of 4-8 months.
- Cyantraniliprole 10.26 per cent w/w OD @ 60 g a.i./ha against citrus psylla, thrips, leaf miner and @70g a.i./ha against lemon butterfly can be recommended for the effective management of these insect pests of citrus below ETL.
- Evaluation of different repellents against fruit-sucking moth (FSM) by hanging polypropylene sachets with phorate or acephate 10g @ 2 per tree coinciding with colour breaking stage of 'Nagpur' mandarin fruits of Ambia significantly reduced the fruits drop (< 7 per cent) due to FSM.
- Mass multiplication protocol for talcum powder-based *Trichoderma harzianum* NRCfBA – 44 strain useful for the management of *Phytophthora* root rot of citrus has been standardized.
- Mass multiplication protocol for predator *Mallada desjardensi* has been standardised for the management of sucking pests.
- Demonstration of Mechanical automatic pruning and spraying for increasing the productivity of Nagpur mandarin orchards. It reduces the cost of pruning (50-55% cost saving over manual pruning), is faster (3.5 acres/hour) and saves labour costs. Some non-bearing orchards also started bearing and saving in time was 75% over manual pruning.
- Weather parameters are finalized and given to Govt. agencies as riders for orange crop compensation to be given by Insurance companies.
- Crop regulation and fruit drop management technologies in Citrus have been disseminated. Technologies for increased fruit size have been developed.



Micro budding techniques



Automatic drip/ Micro-jet irrigation system



Citrus leaf miner pheromone trap



High density plantation in Acid lime



Trichoderm