

## **NEW BUDDING SYSTEM COULD CHANGE THE FRUIT INDUSTRY**

*by Rod Santa Ana III*

**Weslaco - An innovative method of producing infant citrus trees could revolutionize the fruit tree industry by saving growers time, space and money.**

**The new method, called micro-budding, was developed by Dr. Mani Skaria, a plant pathologist at the Texas A&M-Kingsville Citrus Center in Weslaco. "Isn't this incredible?" Skaria asked as he looked over a two year old micro-budded citrus research block that is already producing fruit. "This has lots of potential."**

**Edible fruit trees normally have rootstocks that are unable to withstand many soil conditions and pathogens. Rootstocks that can survive usually produce inedible fruit. So, for over a century, nurseries worldwide have been grafting buds from tasty fruit trees onto hardy rootstocks. But the grafting process is tedious, time-consuming, and expensive. In the case of Texas citrus, it takes up to two years before a grafted tree is planted in an orchard. It takes another three to four years before the infant plant gets over the shock of transplant and grows sufficiently to produce fruit. Even then, fruit production is initially low.**

**By micro-budding, the entire process is reduced to just over two years. Rootstocks are grown from seeds in tube containers in a nursery for three to four months, then a single bud is inserted into the rootstock with a very sharp knife and capped, not taped as with conventional grafting. Within two to three weeks, the newly budded rootstock begins to grow and is ready for transplanting into an orchard under drip irrigation.**

**"There are fewer stages in micro-budding," said Skaria, "and all the nursery care and irrigation is given to the micro-budded tree, not to the rootstock like in conventional budding." Skaria planted his first micro-budded orchard in the summer of 1997 and by the fall of 1999, several varieties of micro-budded citrus, including lemons, oranges and grapefruit, were producing fruit. "This micro-budded orchard answered two major questions about this new method: Will micro-budded plants survive in the field, and will they grow normally? The answer to both questions is 'yes,'" said Skaria. "We don't know why, but some actually started producing fruit in less than two years. It's something we'll have to investigate scientifically." The cost to growers of a conventionally grafted tree is about \$6.50; a micro-budded tree will cost about \$1.25, Skaria said.**

**The potential benefit to growers, he said, are many. With lower costs per tree, growers can plant higher density orchards, reduce water, pesticide, and fertilizer costs, and get increased returns on their investments sooner. And unlike conventional grafting methods**

that can only be done in the spring and fall when tree sap is flowing, micro-budding can be done year-round. Skaria said there are still a few 'bugs' to be worked out in his new method, but the citrus demonstration block in Weslaco proves that micro-budding works. Pending further studies, he can only suspect the method will work in other fruit trees.

Despite many failed attempts over several years to devise and perfect the new method, Skaria said he was encouraged to persist in finding a new, cheaper and quicker way to produce infant citrus trees when he realized that freezes, high initial investments and increasing land values in South Texas were pushing many growers out of the business. "I just knew there had to be a better way to do things," he said.