



Standing Tall

High-minded growers should take a look at high-headed trees when considering the use of mechanical harvesting.



High-headed nursery trees are grown in an approved structure as required by the new Florida Citrus Nursery Stock Certification Program.

By Bob Rouse, Nate Jameson, and Mike Kesinger

The Florida citrus industry has gone through the most dynamic change during the past two years as any time in history. Losses in acreage from canker-control actions along with the discovery of greening disease have changed production practices for both growers and nurserymen. On the grower side, production cost has increased due to disease control costs. On the nursery side, the Citrus Nursery Stock Certification Program Rule 5B-62 became effective January 2007, requiring all citrus nursery stock to be grown in DPI-approved protective structures. This eliminated outside "field nursery" production.

Florida citrus nurseries have for the past 20 years produced between four and six million saleable trees annually. The past couple years, tree production was reduced to between one to two million trees. Currently, there are about 40 nurseries propagating trees for commercial plantings, down from the 290 citrus nurseries in 1985. The current annual tree capacity is estimated at three million sale-

able trees annually from nurseries in protected structures.

The loss of producing trees to canker-control actions under the 1,900-foot rule and citrus greening disease have increased nursery tree demand for resets and replanting blocks within groves. The current disease pressure has growers and nurserymen working together more than in previous years. These new relationships,

along with the need to replant large blocks, present a unique opportunity. By establishing uniform plantings of high-headed trees suitable for mechanical harvesting, growers may be able to decrease their harvesting cost. With availability for harvesting labor questionable, the ability to harvest fruit with a greatly reduced labor force deserves serious consideration.

High Headed Trees

Growing high-headed trees in greenhouses requires nurseries to extend the time of production and gain a larger caliper trunk to support a tree with branching starting at 24 inches. Due to this change, more advanced planning is needed. Although the time required to produce the tree is greater, and there is some delay in planting, the benefits of decreased harvesting costs, shorter time to harvest from planting, and decreased tree exposure time to diseases could offset delays in planting. High-headed trees are well suited for mechanical harvest. Other high-headed facts include:

- High-headed trees have a longer than normal trunk that has the scaffold branching beginning at 24



Nursery trees headed at 24 inches are suitable for mechanical harvesting.



inches or greater. Time in the nursery will be extended by about 6 to 8 months, which means trees will be 18 to 24 months from budding before ready to plant in the grove.

- These trees are suited to accommodate mechanical harvesting catch frames under the tree and have horticultural and practical use advantages in the grove.
- Growers have always preferred a straight trunk, and mechanical harvesting requires a clean, straight trunk for the catch frame to fit snug around the trunk to avoid fruit falling to the ground. A straight trunk is required to accommodate a trunk shaker clamp if this type of machine is used.
- Current practice of budding at 4 to 6 inches for the bud union is suitable.
- Trees should be able to stand on their own without staking when planted in the grove, and this will require a trunk diameter of about


$\frac{5}{8}$ to $\frac{3}{4}$ inch. Current 4-inch citrus containers may not be adequate to get much over $\frac{1}{2}$ -inch diameter, and recently some nurseries are using larger containers. Perhaps a permanent stake (metal or PVC) could be used in the nursery that would go with the tree to the grove.

Big Benefits

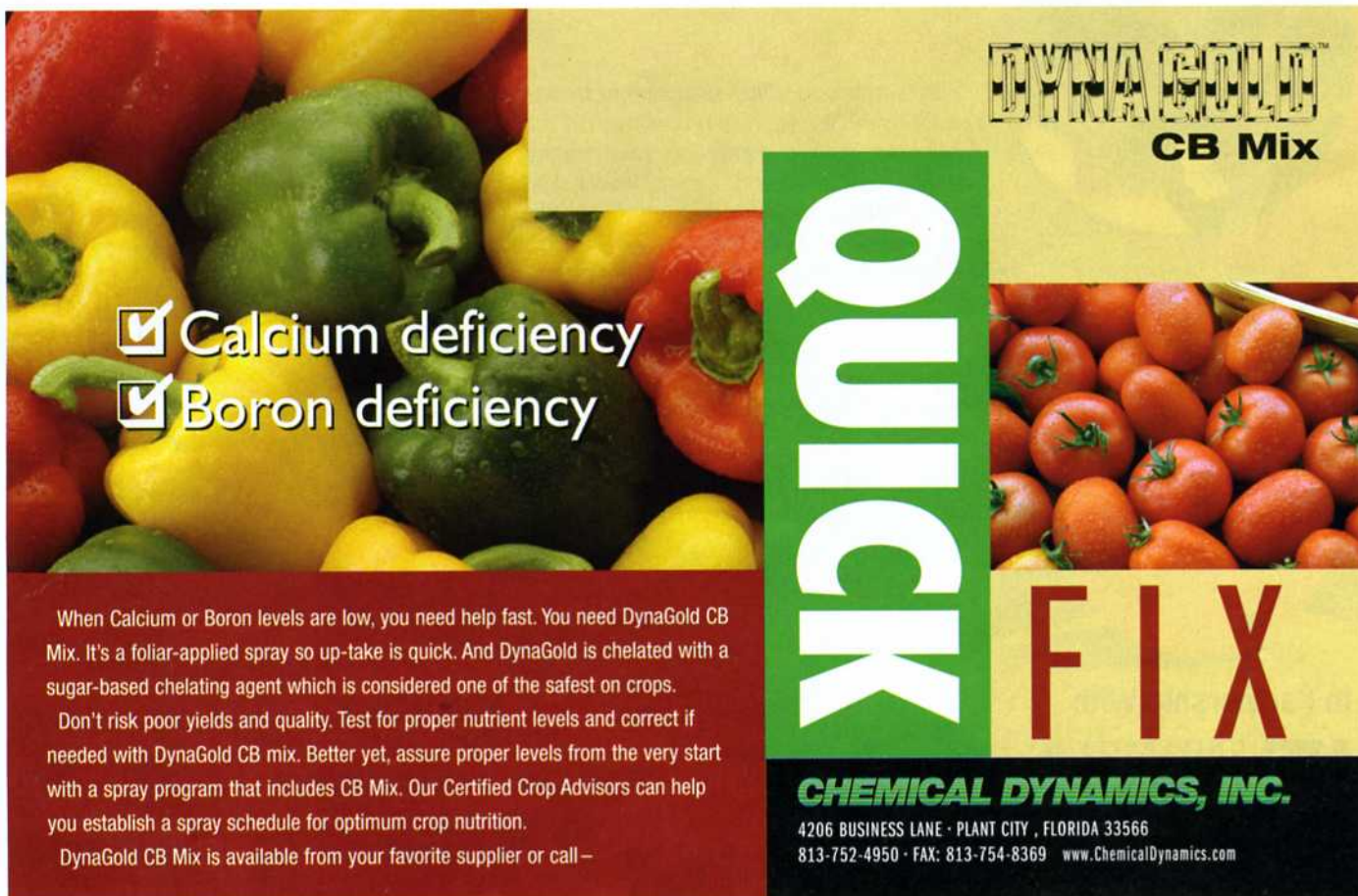
In addition to preparing for the future of mechanical harvesting and improving the recovery of fruit, there are many horticultural and management benefits to high-headed trees:

- Fruit production in early years may increase faster by planting an older tree.
- Irrigation emitters are more visible for checking proper operation and maintenance.
- Micro-emitter irrigation pattern is not affected by low-hanging branches and water distribution is more uniform.

- Improved fertilizer placement and distribution.
- Herbicide application is more uniform, and there is less injury to low-canopy tree foliage and to the herbicide equipment.
- Herbicide booms don't contact low hanging foliage, which reduces the chance for spread of canker.
- Reduced brown rot and greasy spot infection as air drainage under the canopy is improved.
- Reduce severity and frequency for mechanical skirting.

Planting high-headed trees does not necessitate mechanical harvesting. It does, however, allow a grower to pursue the mechanical harvesting option. It might be appropriate to consider the old adage, "better to have it and not need it, than to need it and not have it." 

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