

The shape of nursery trees in the future to improve mechanical harvesting efficiency

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Mechanical harvesting Field Day

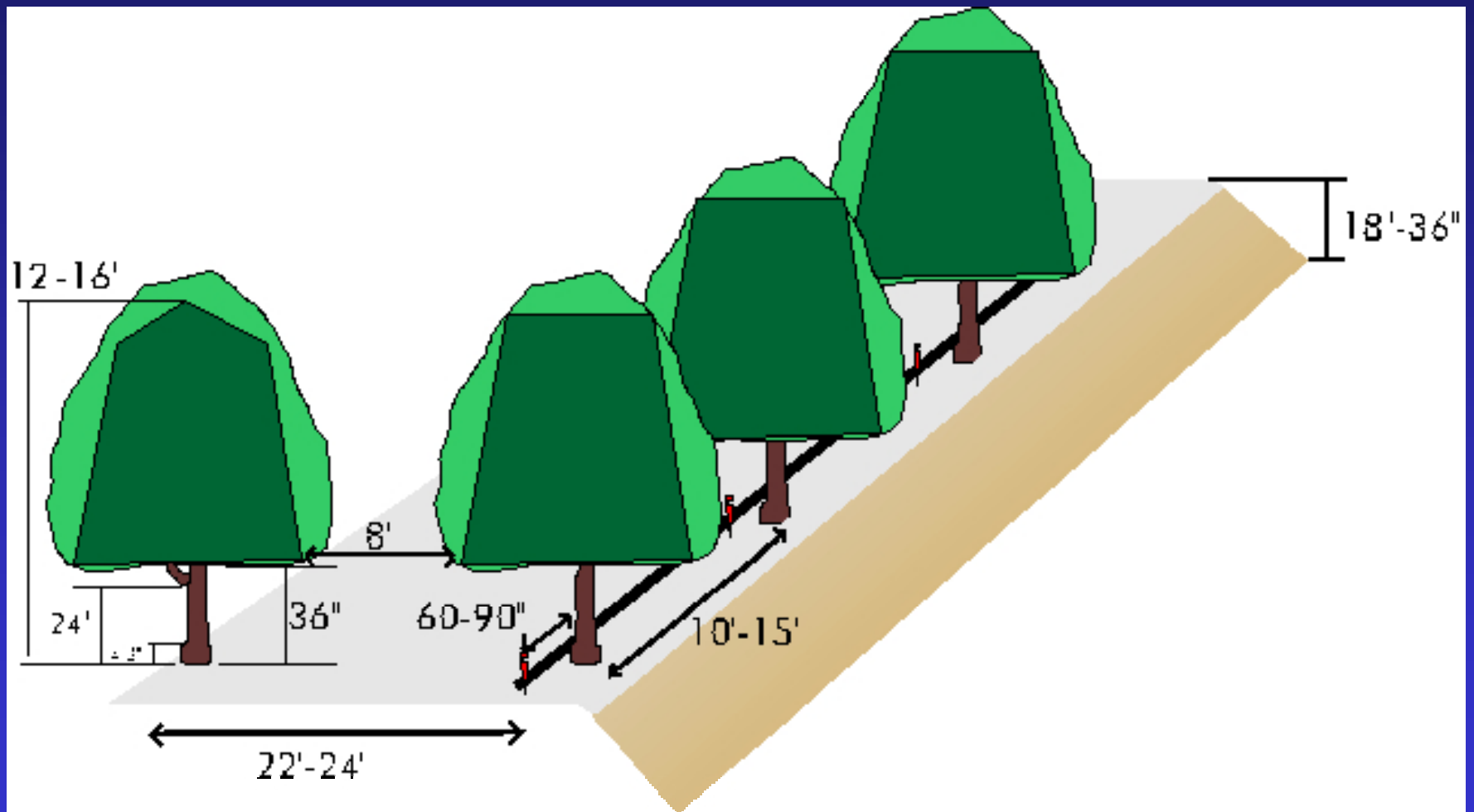
April 6, 2006

UF/IFAS

Southwest Florida Research & Education Center

Immokalee

Concept Grove of the Future



Building the Grove of the Future

- Existing trees are not “hurt” when skirted and pruned.
- No negative trade-offs between horticultural goals and mechanical harvesting goals.
- We can shape the grove of the future to fit mechanical harvesting.
- Changes are needed when we grow a nursery tree and there are grower adjustments.

Growing a 'High-Headed' Nursery Tree for the Future

- Heading high – 24 inches
- Requires a clean, straight trunk
- Should stand on its own when field planted
- Six-inch Citripot not adequate for $\frac{3}{4}$ diam.
- Six to 8 months longer in nursery (24 months)
- Added cost of \$0.50 - \$1.00 minimum
- Required higher wrap & more sprouting



24 inch flag

Bud union





Field-grown tree



Container-grown tree



Changes in Citrus Nursery Industry

- DPI Budwood sources trees move out of commercial citrus production area
- Guidelines developed to grow nursery trees in protective structures to exclude insects and diseases
 - (current and anticipated pests)

Nurseries Lost

- Before Hurricanes spread canker
 - 16 Field nurseries
 - 29 Greenhouse nurseries
 - 8 Combination nurseries (field & greenhouse)
- Remaining Nurseries propagating trees
 - 50% field nurseries
 - 75% greenhouse nurseries

Nursery Propagations

- 2000-01 5,575,773
 - 2001-02 5,846,373
 - 2002-03 4,898,157
 - 2003-04 3,971,782
 - 2004-05 2,145,259
 - 2005-06 1,022,440 (22 nurseries)
- » Current inventory 581,856 (20 Nurseries)

Proposed Change RULE 5B-62

Citrus Nursery Stock Certification Program

➤ January 2006

- All budwood for increase must come from screenhouse
(already in effect)

➤ January 2007

- Trees must be grown in an approved protective structure one mile from commercial citrus
(commercial citrus = solid set planting of 40 trees)
- Existing sites before April 1, 2006 may remain

➤ January 2008

- Unlawful to distribute trees not grown in protective structure

➤ January 2010

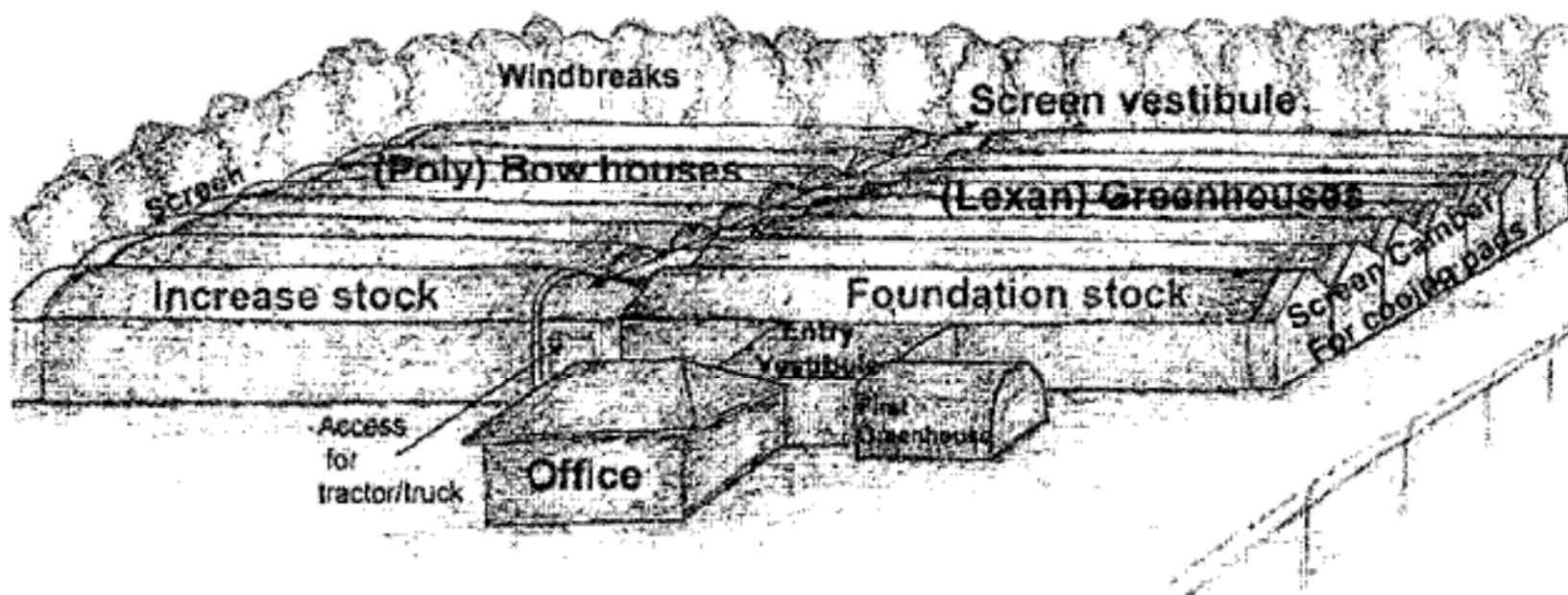
- Scion trees located in screenhouse one mile from commercial citrus & 660 ft from other citrus or relative

DPI Relocate Budwood Source Trees

- Relocate Foundation trees at Dundee and Winter Haven to protective structures at the Division of Forestry in Chiefland
- This protective site is outside the commercial production region and ten miles from any commercial citrus

New DPI Budwood Facility

Chiefland Budwood Complex



Minimum Requirements for Nurseries

- Structure fully enclosed insect proof (minimum screen size 266 x 818 μm), double entrance with positive air pressure displacement
- All citrus nurseries shall be one mile distance from any citrus or citrus relative (unless established before April 2006)
- Site must be fenced
- Site should incorporate natural or artificial windbreaks











Container-grown high-headed trees

- Successfully treated for aphid, leafminer, and Psyllid before delivery
- May require staking
- Tree delivered with stake
- Can be delivered without being headed
- Requires taller tree wrap
- May require more sprouting
- Higher delivery weight and size (800 vs 2000 trees)
- Easier to sort trees for size at delivery

Grower Advantages of High-Headed Trees

1. Larger tree requires less care after planting
2. Tree fruits sooner because larger and older
3. Skirting is easier to maintain
4. Cost of preparing tree for MH reduced or eliminated
5. More uniform wetting pattern from emitters

Grower Advantages of High-Headed Trees

6. Emitters easy to check for clogging and repair
7. Better distribution of fertilizer (dry and liquid)
8. Reduced herbicide damage to low foliage
9. Less exposure to brown rot, greasy spot with improved air drainage under canopy
- 10. Lower harvesting cost** when trees become productive

What does the Future Hold

?

Whatever the future holds the survivors in the industry will be mechanical harvesting their citrus to remain profitable and competitive.

Demand high-headed trees
from the nursery suitable for MH

Accept nothing less

Pay a little more now,
or a lot more later