Macadamia in Florida: Potential and Considerations

Lauren Diepenbrock, Associate Professor of Entomology & Citrus Entomology Extension Specialist

UF/IFAS Citrus Research and Education Center

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Take home message

- Macadamia can thrive in central Florida
- Macadamia has the potential to be a profitable crop, and our team is working to develop it for larger production volumes in Florida

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Environmental requirements

- Wild species adapted to a range of temperatures, humidity levels, rainfall, and varying sunlight availability
  - Traits carry forward to the varieties and hybrids
- Soil pH 5-6.5
- Optimal temperature range: 65-85° F
  - Can tolerate higher/lower, but may impact growth
- Can withstand flooding for prolonged periods, but prefer well drained soils

Propagation and varieties available

- Some varieties from Hawaii and Australia are available from regional nurseries
- Several nurseries provide air-layered trees
- UF IFAS team currently working with a commercial nursery to improve grafted macadamia trees in FL
  - Gives options for rootstocks!
- Not certain all are “true to type”- macadamia perform better with cross-pollination, so trees from seed will be a hybrid of some sort

Soil organic matter is critical!

- Macadamia CAN be grown without soil organic matter (SOM), BUT:
  - SOM increases nutrient retention
  - SOM increases water holding capacity, critical for drought periods

- Ways to increase SOM:
  - Add compost- make your own or purchase
    - Mulched trimmings and husks can be incorporated
  - Grow cover crops- residues can be incorporated

Water management

- Macadamia need water, but don’t like to sit in water for long periods
- Drainage of water away from trees can be done with mounding, adding drainage ways in orchards

Macadamia grown in flood plain near Bundaberg, Australia. Mounds of SOM hold enough water near roots; the rest drains down.

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Canopy management

- Selective pruning is critical for light and wind penetration
- Young trees- prune low for wind, bring up skirt later when trees are larger

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Expected pathogen challenges

- Phytophthora- a management plan will be necessary if planting into groves previously impacted by this
- Other pathogens will appear over time, monitoring will be important

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Expected invertebrate challenges

- Nut borers
- Stinkbugs
- Root weevils
- Mealybugs & scales
- Likely others..

Expected vertebrate challenges

- Hogs
- Rodents
- Humans?

Squirrel feeding- Lake Alfred, FL

Hog fence- Hilo, HI

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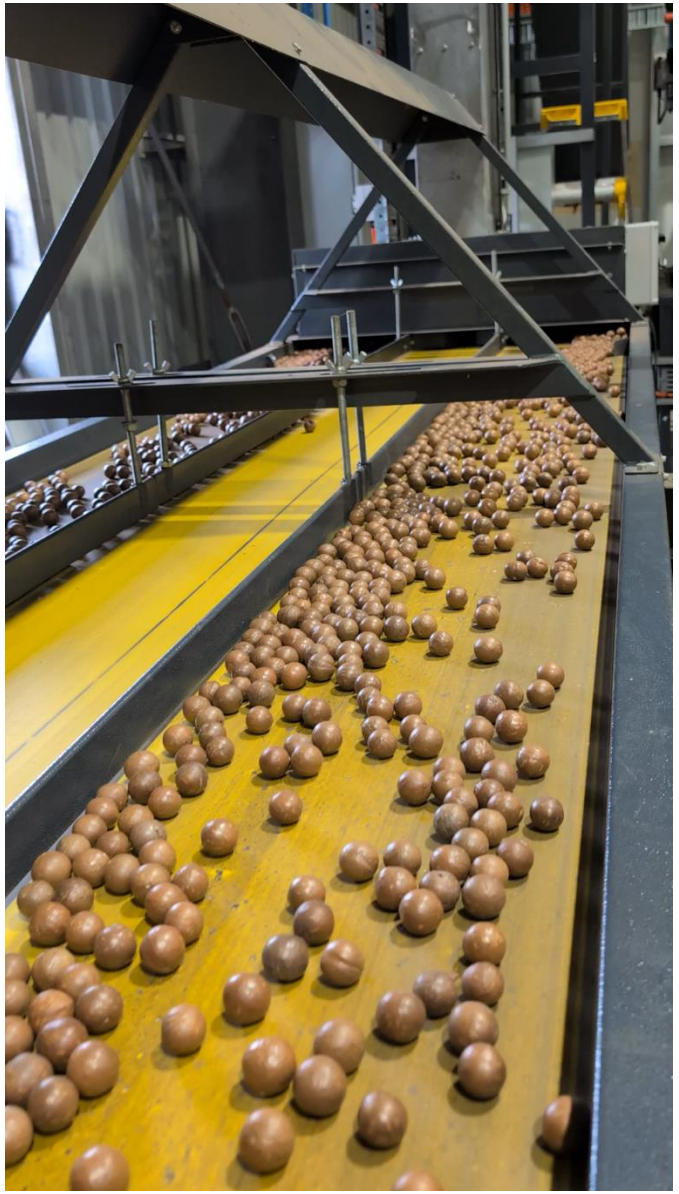
Post-harvest

- Dehusking- must complete shortly after harvesting
  - In field
  - On farm in a shed
  - Third party

Sorting before storage

- Before nuts in shell (NIS) can be stored, damaged nuts must be removed via sorting



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Nut in kernel storage

- To preserve nut quality, forced air necessary to slow the degradation process
- Nut moisture is CRITICAL! Nuts in silo must be down to at least 15% moisture

Forced air design for on-farm storage after de-husking.

Industrial scale has much larger capacity and scaled to size.

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Cracking & Processing

- Nuts cracked with industrial equipment
  - Quality sorted for damage, whole vs pieces, and graded by color & size for whole

- Processing
  - Roasting, flavors added

Anticipated challenges

- Sufficient nursery production
- Cost of equipment
- Unknown pests & pathogens
- Humidity- maintaining nuts post-harvest at the right humidity is important for nut quality and safety
- Severe weather

Nuts harvested from an orchard in Fort Pierce

One of many healthy varieties of macadamia growing in Lake Alfred

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Conclusion

- Macadamia has the potential to be a profitable crop for Central and South Florida
- Infrastructure including processing facilities will be necessary to grow the production scale
- The team at UF/IFAS CREC is ready to support macadamia growers in central and south Florida!

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THANK YOU

Contact information:

Lauren Diepenbrock

ldiepenbrock@ufl.edu

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