



Growing **Sapodilla** in Florida

Alexander Salazar

Collier Fruit Growers, Naples, March 19th, 2019

Introduction

- ▶ Owner of Tropical Acres Farms, Inc.
- ▶ Grew up in south Florida, graduated from USF in Tampa
- ▶ Began studying mangos and tropical fruit as a teen
- ▶ Began growing commercially in 2011
- ▶ Located in West Palm Beach on historic Sturrock family property, previous experience growing in Loxahatchee Groves in central Palm Beach County
- ▶ Currently growing about over 295 varieties of mango, along with 10 sapodilla and 49 avocado. Also provide consulting services to other growers.

Farm in West Palm Beach, FL

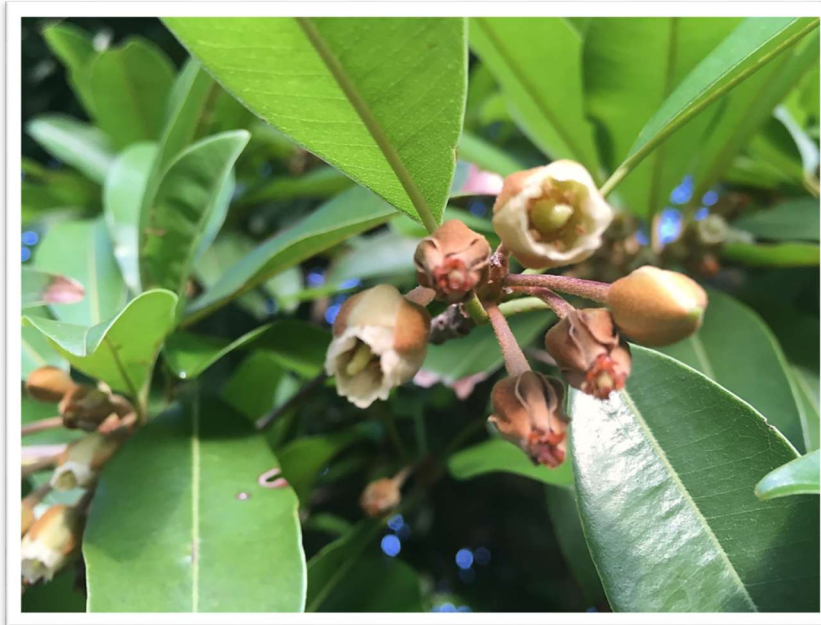


The Sapodilla

Manilkara zapota

- Originated in Yucatan region of modern Mexico, becoming endemic to central America
- Cultivated since ancient times. At one points hundreds of millions of trees likely grew in southern Mexico/central America
- Botanically a berry and In the Sapotaceae family, which includes mamey sapote, and canistel (“eggfruit”)
- Flesh may be gritty or smooth, brown or red in color, often likened to a “brown sugar soaked pear”, though this description is dubious for superior cultivars with more complexity
- Size can range from a couple ounces to several pounds on larger varieties
- Spread throughout tropical world after being introduced to Asia by Spanish from New World

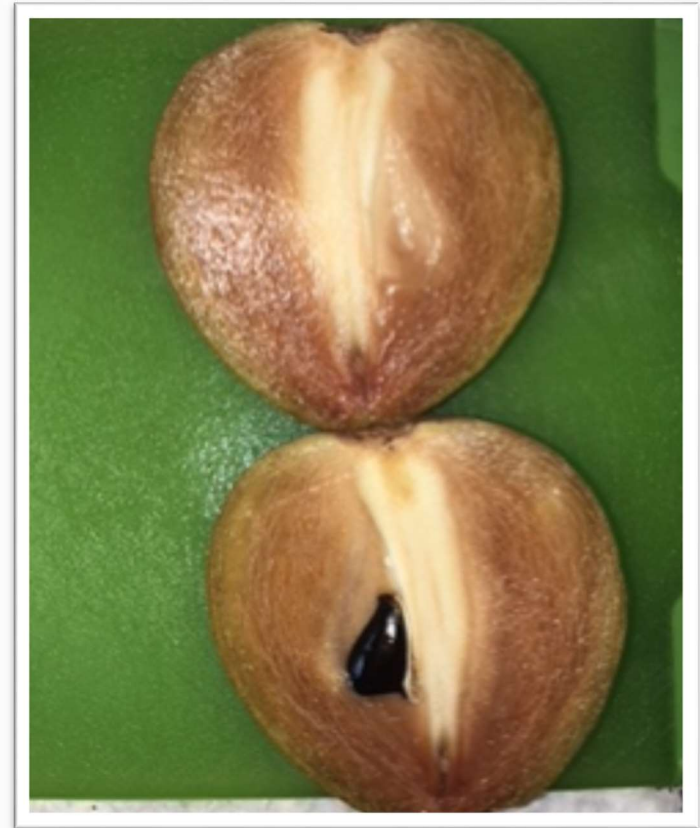
Sapodilla Flowers



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Martin



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Manilkara zapota

- ▶ Now commonly found in India, east Asia, and all over tropical Americas.
- ▶ May be grown from seed, but considerably variability and primarily Propagated by grafting.
- ▶ Commercial acreage limited to <20,000 acres worldwide. Not a significant commercial tropical fruit crop despite reputation
- ▶ The white latex sap from the tree is known as 'Chicle' and was the primary ingredient in chewing gum at one time (hence the name 'Chiclets). Chicle was chewed by the Aztecs and Mayans whose civilizations occurred in the sapodilla's native range.
- ▶ Timing from flower to harvest is approx. 6 months.

Cooking latex



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Fruits



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

“Sapodilla”: Uncommon name for common fruit

People from different parts of the world rarely know the fruit as “sapodilla”

- ▶ **“Chiku”** – North India/Pakistan, parts of Asia.
- ▶ **“Sapota”** – Much of central/southern India, parts of Latin America.
- ▶ **Nispero** – Much of Latin America.
- ▶ **Neeseberry/Naseberry** – West Indies/Caribbean

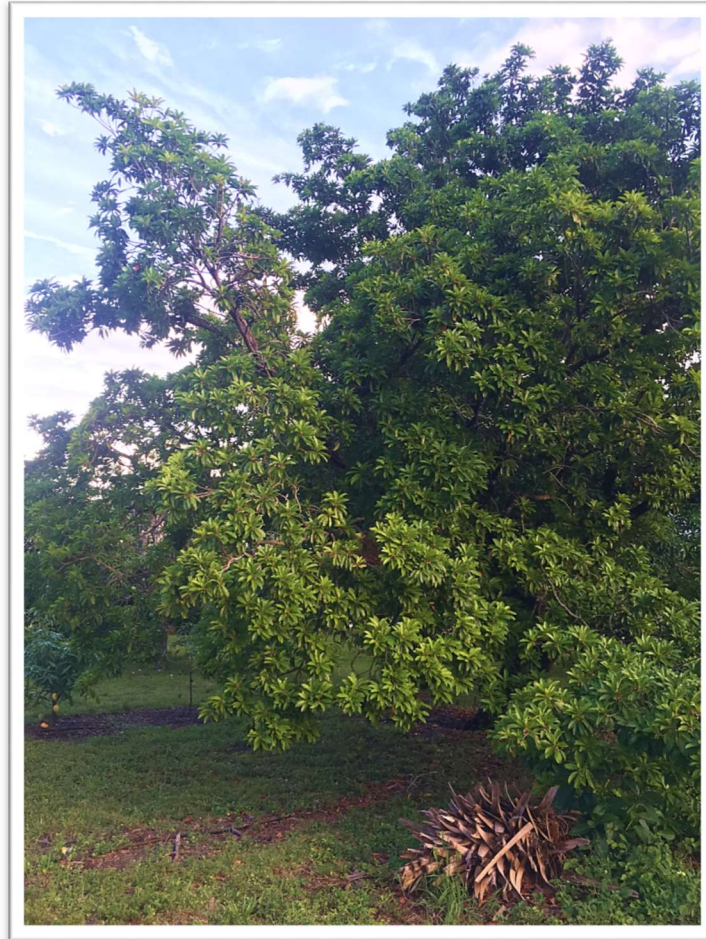
The Sapodilla

The Sapodilla in Florida

- ▶ Thought to have been introduced to Florida via the Bahamas during the 19th century.
- ▶ Early introductions were seedlings and of poor quality.
- ▶ Tree was found to perform well in marginal soils; became common in the Keys where many fruit trees did poorly.
- ▶ Superior selections began to be made in early 20th century.
- ▶ Later introductions were made to Florida from outside regions such as Mexico and Thailand (e.g 'Alano' and 'Hasya').
- ▶ While commercial plantings were and remain extremely limited, sapodilla has become a common backyard fruit tree.
- ▶ Season here primarily winter/spring.
- ▶ Geographically limited to south-central Florida due to climate.
- ▶ Classified as 'invasive' by UF, with questionable merit.

The Sapodilla

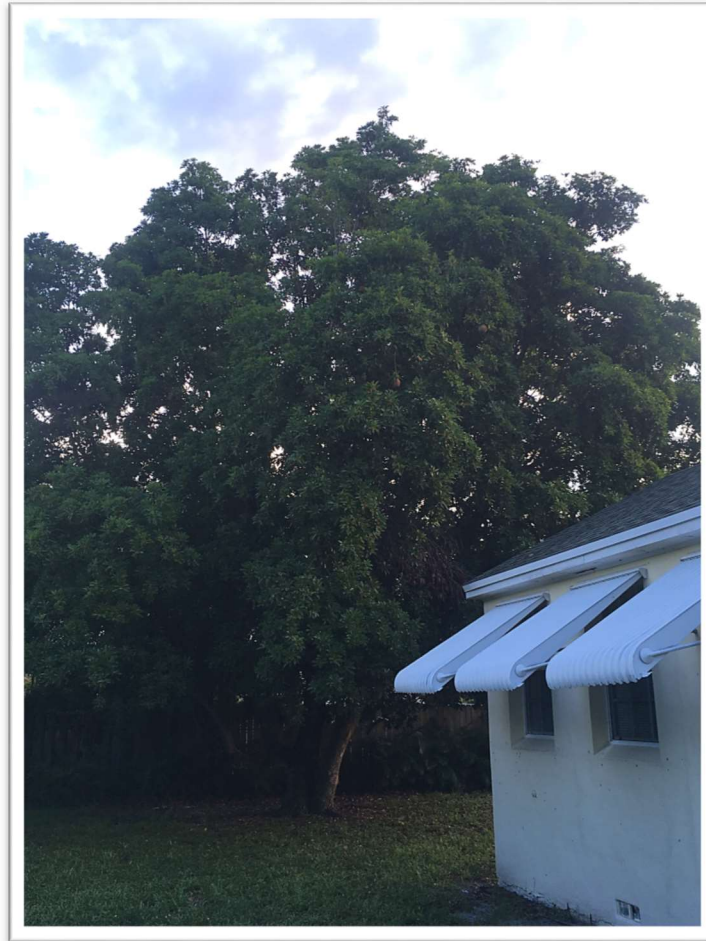
Tree



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Tree



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Why grow sapodilla?

Pros:

- Excellent tasting dessert fruit.
- Trees tend to be consistent producers requiring little care.
- Very adaptable to different soil-types and perform well in high pH, nutrient poor soils.
- Very few disease or pest problems.
- Sub-tropical cold tolerance. Mature trees can withstand some freezing temperatures without major damage.
- Potential for very extended season, often with multiple crops.
- Valuable fruit commercially (prices can exceed \$5/pound)

The Sapodilla

Why grow sapodilla?

Drawbacks:

- Frustratingly Slow to establish and grow initially.
- Brittle wood and prone to limb breakage (*some worse than others).
- Difficult to determine maturity of fruit.
- Not a versatile fruit in its consumption; unusable green due to astringency.
- Some varieties may produce poorly without a pollinator (e.g. 'Hasya')

The Sapodilla

Tree care tips

- ▶ Plant grafted trees of known varieties.
- ▶ Trees should be planted in well draining spot, in full sun wherever possible.
- ▶ Prune tree from young age to achieve desired shape and manage size in long term to make harvesting easier.
- ▶ Trees can and should be maintained under 15 ft in height.
- ▶ Apply a balanced N-P-K fertilizer with minors during first years of tree's life to encourage healthy growth.
- ▶ Limit N from the diet of large/old trees to discourage excessive vegetation vs flowering
- ▶ Irrigation beneficial for first few years, unnecessary thereafter but may improve fruit set/retention in dry periods.
- ▶ Better production often achieved with addition of a second variety.

The Sapodilla

Pest

- ▶ Most common pests of sapodilla are piercing-sucking insects (aphids, mealybugs, scale, etc)
- ▶ These are readily controlled with several applications of horticultural oil (organic options)
- ▶ Young trees may be targeted by chewing insects such as caterpillars and Sri Lankan weevil
- ▶ May be physically removed, or killed with insecticides such as Carbyl (Sevin) or Imidacloprid.

Caterpillar Damage



Collier Fruit Growers, Naples, March 19th, 2019

Mealy Bugs



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Determining fruit maturity

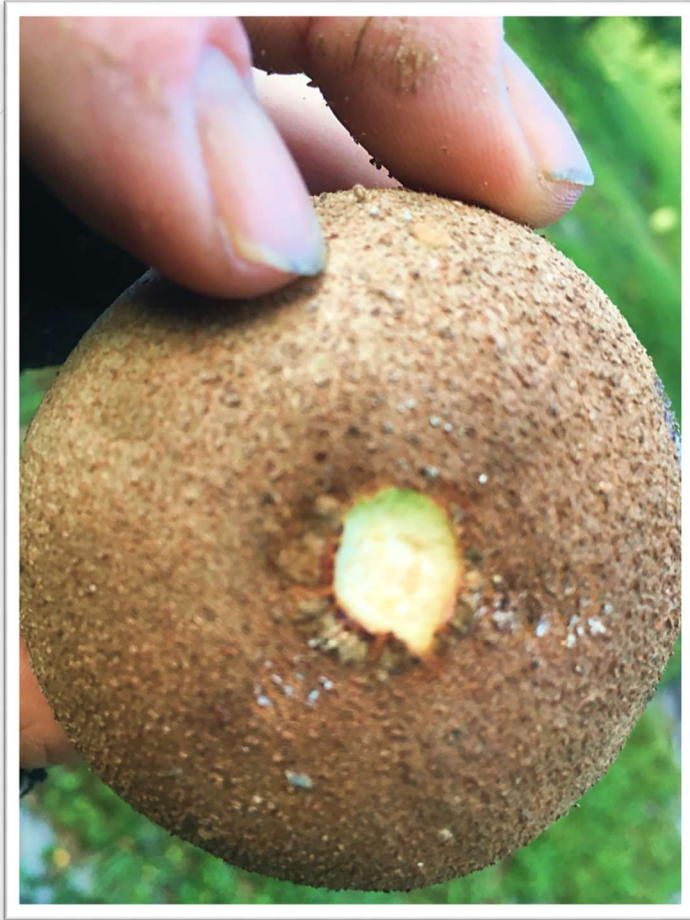
- Fruit will often begin losing “scurf” and smooth out.
- Brown color lightens and skin may take on grayish tone.
- Small ‘tip’ at bottom of fruit will fall off.
- **Scratch test:** underneath skin color changes from dark green to light green/yellowish color at maturity.
- When harvested fruit bleeds no or little latex, this is a signal fruit is physiologically mature.

Determining fruit maturity

Scratch test: Not ready



Determining fruit maturity



Fruit bleeds no or little latex



Physiologically mature

The Sapodilla

Recommended Cultivars

- ▶ **Alano:** Originally from Hawaii. A bulletproof tree. Only medium vigor, highly productive and typically multiple cropping. Main Season December-February but often has fruit in late-summer/fall. Small-to-medium sized oval shaped fruit, extremely sweet.
- ▶ **Hasya:** From Mexico, where it is grown on commercial scale. An outstanding flavored fruit, medium-to-large size, round/oval shaped. Trees may be light producers particularly without other cultivars nearby to pollinate. Can be highly productive under right circumstance. Very vigorous, handsome trees.

The Sapodilla

Fruit



The Sapodilla

Fruit



The Sapodilla

Recommended Cultivars

- **Tikal:** From Florida, one of the better local selections. Very good quality fruit with reddish flesh containing no grit. Medium size fruit, ripening in spring.
- **Thomas:** round shaped fruit, outstanding eating quality with reddish flesh with significant variation in fruit size. Unusual in that smaller fruits tend to be seedless. Moderate production, season March-May. Soon to become available.

The Sapodilla

Tikal



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Thomas



Collier Fruit Growers, Naples, March 19th, 2019

The Sapodilla

Recommended Cultivars

- **Molix:** From Mexico, pronounced “Moleesh”. Season March to May, similar flavor to Hasya but fruit tend to be smaller and brown-fleshed, later season.
- **Makok:** Dwarf tree with low growth habit, small fruit with brown flesh of excellent, super sweet eating quality. “summer sapodilla”, season May – October. Best choice for limited space.

The Sapodilla

Fruit



The Sapodilla

Gigantia



Collier Fruit Growers, Naples, March 19th, 2019

New Diseases impacting Mangos

Mango Bacterial Black Spot (*Xanthomonas* sp.)

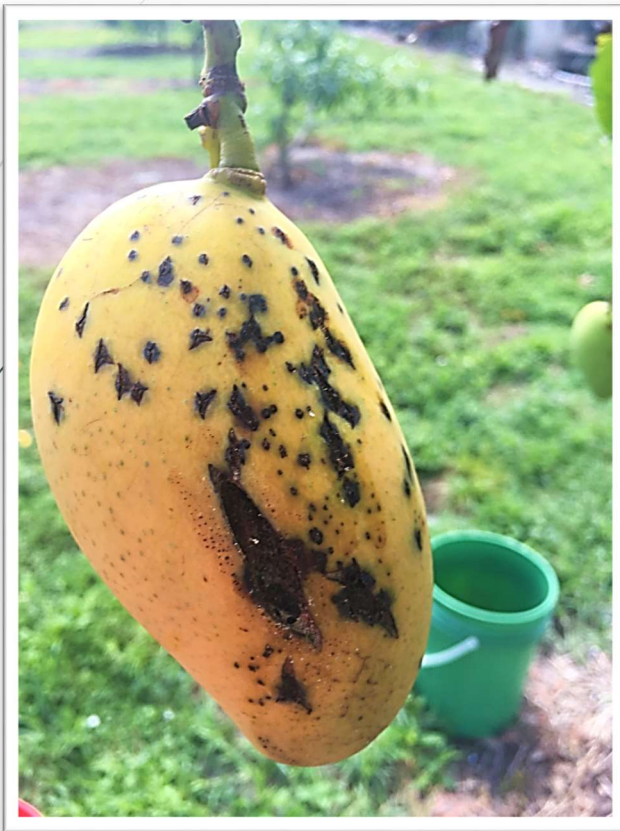
- Originally found only on leaves in Florida, new strain attacks fruit as well, causing raised black star-shaped lesions that appear before fruit reaches maturity. Can cause the fruit to split open and drop off tree. Lesions often become colonized by rot fungi and also provide entry for fruit fly.
- Spread by wind-driven rain and infected nursery-stock.

Bacterial Black Spot



New Diseases impacting Mangos

'Lemon Meringue'



Collier Fruit Growers, Naples, March 19th, 2019

New Diseases impacting Mangos

Mango Bacterial Black Spot (*Xanthomonas* sp.)

- Susceptibility varies by cultivar, but many older Florida mango varieties appear highly prone. In particular, mangos descended from the 'Brooks' cultivar (Kent, Keitt, Hatcher, others) along with various 'Haden' descendants. Varieties descended from Julie appear resistant.
- Treatment options are limited to copper (of dubious effectiveness) and removing and burning severely affected limbs. Windbreaks may offer some prevention. Cultivar resistance is likely most promising solution.



New Diseases impacting Mangos

“The Rot” (Botryospharial sp. and other fungi .)

- Begins as small lesion on the fruit as it starts to reach maturity, expanding across much of the fruit as it turns ripe. Brown/greyish in color.
- Rot will penetrate flesh and destroy inside of affected portion of fruit, rendering it inedible.
- Primary Causal agents are thought to be *Neofusicoccum* sp. and *Phomopsis* sp, frequently invading splits and small skin abrasions, as well as cankers created by Bacterial Black Spot.

New Diseases impacting Mangos

“The Rot” (Botryospharial sp. and other fungi .)

- ▶ Can impact 50-100% of crop on highly susceptible varieties.
- ▶ Oddly Appears to ‘come and go’, often impacting first half of a trees crop and disappearing on later fruit.
- ▶ No recommended fungicide yet. Strobilurin-group likely offers best control in rotation with other fungicidal class but is prohibitively expensive for home growers. **Cultivar resistance appears to line up with MBBS resistance and offers best long-term solution.**

New Diseases impacting Mangos

The Rot



Collier Fruit Growers, Naples, March 19th, 2019

New Diseases impacting Mangos

The Rot



Collier Fruit Growers, Naples, March 19th, 2019

Any Questions?



Thank you for your time.



Contact Us



Alexander Salazar
Tropical Acres Farms, Inc.
Open everyday during mango season!



www.TropicalAcresFarms.com



1010 Camellia Road, West Palm Beach, FL 33405.



561-358-8566



Tropicalacresfarms@gmail.com



TropicalAcresFarms



TropicalAcresFarm