Florida Banana Culture

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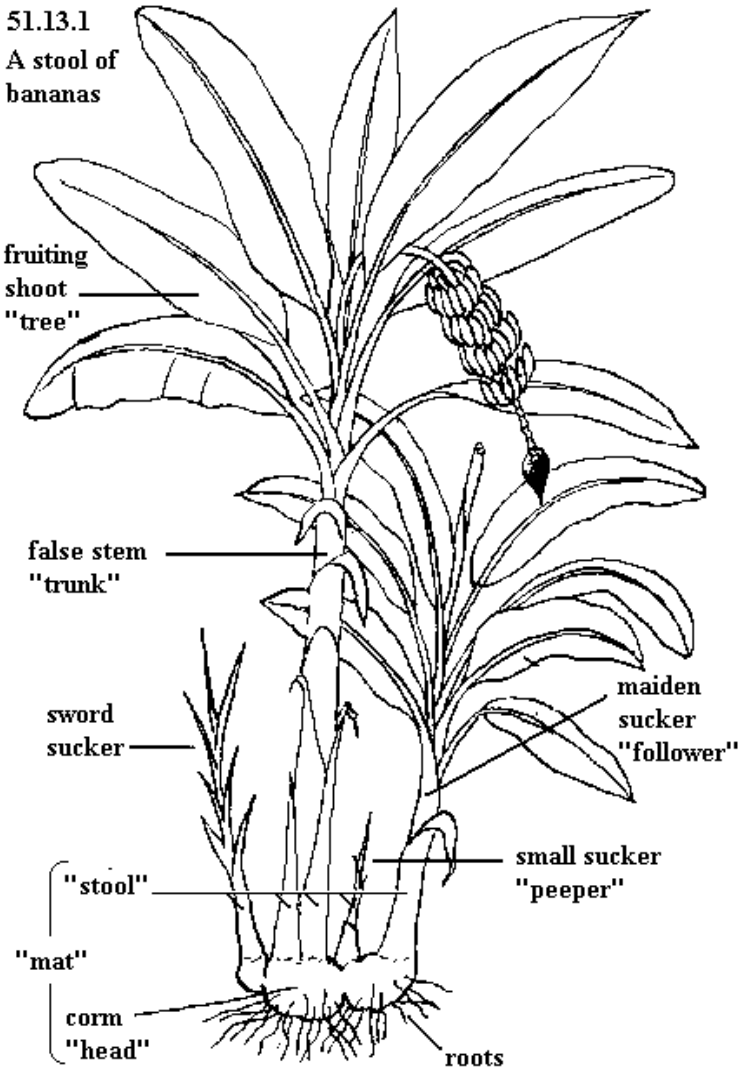
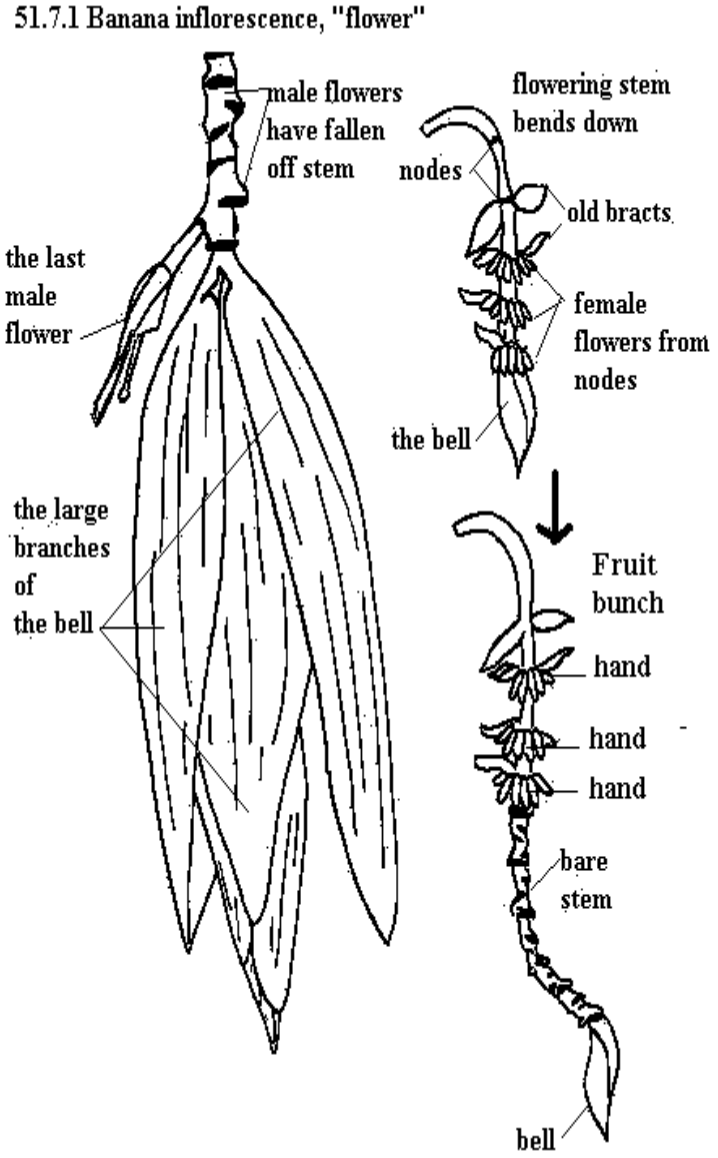
Banana Plant



Fruiting Parts



Why are bananas seedless?

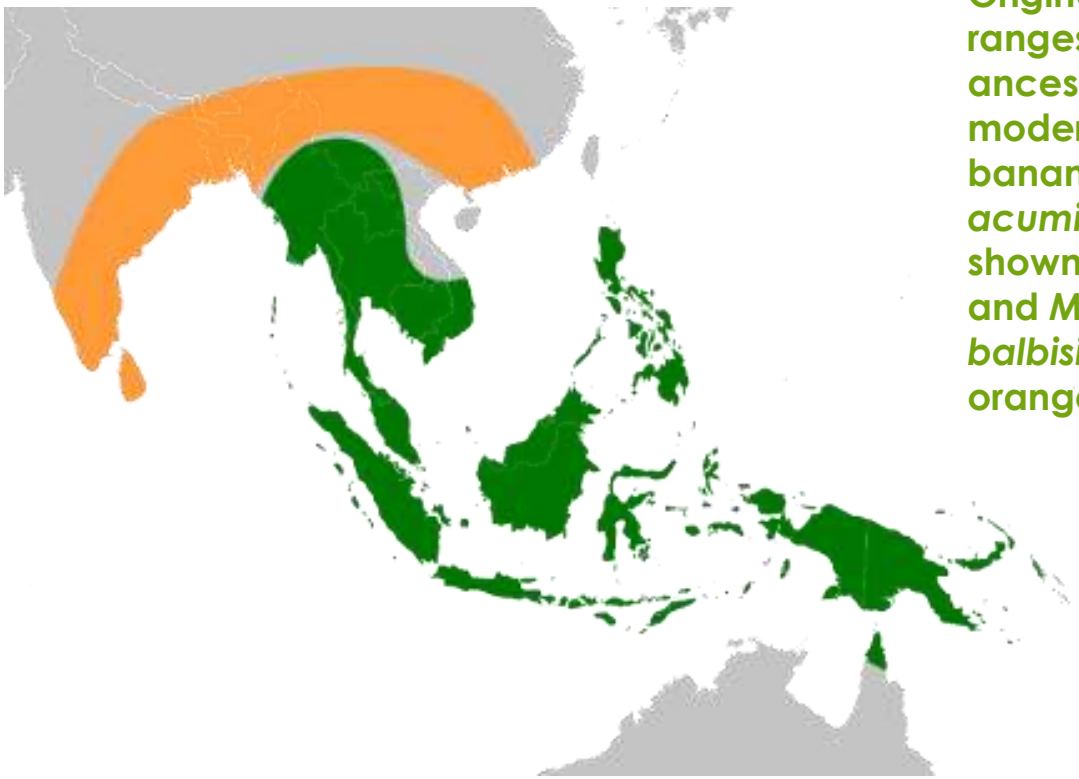
Musa acuminata (Asian Banana)	X	*Musa balbisiana* (Asian Banana)	=	*Musa X paradisiaca* (Hybrid Banana)
AA (fertile)		BB (fertile)		AAB or ABB (etc.) (sterile)

Origin Of Triploid Banana From Asian Parents

A = one haploid set of chromosomes from *M. acuminata*

B = one haploid set of chromosomes from *M. balbisiana*

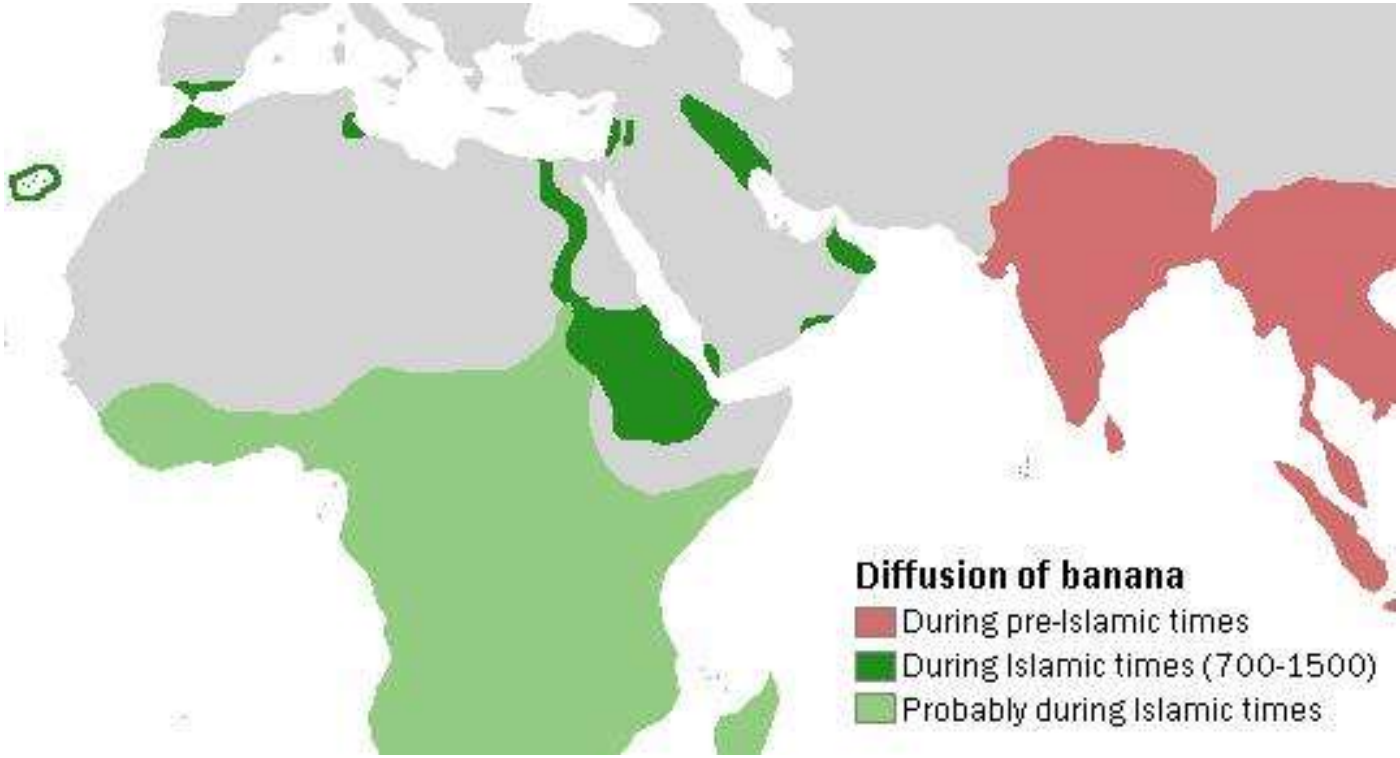
Original Range



Original native ranges of the ancestors of modern edible bananas. *Musa acuminata* is shown in green and *Musa balbisiana* in orange

Bananas may be the world's oldest cultivated crop. There is evidence that bananas were cultivated in the highlands of New Guinea at least 7,000 years ago and that Musa varieties were being bred and grown in the Mekong Delta area of Southeast Asia as long as 10,000 years ago.

Spread of Bananas



In the first or second millennium BCE Arab traders carried banana suckers from Southeast Asia back home and introduced the fruit to the Middle East and the east coast of Africa

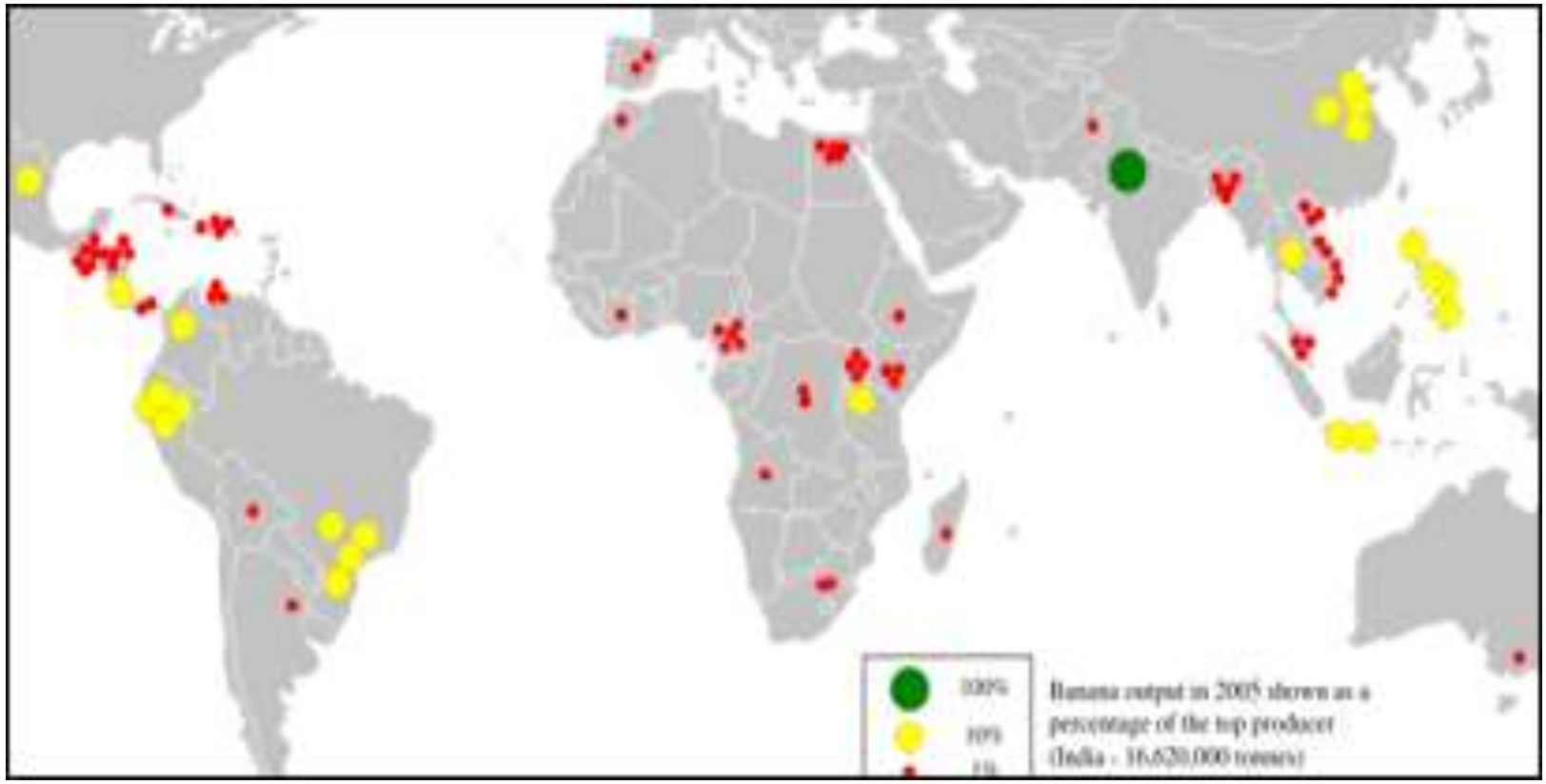
Bananas were discovered by the Portuguese on the Atlantic coast of Africa. They cultivated the fruit on the Canary Islands. From there it was introduced to the Americas by Spanish missionaries.

Americans have only been eating bananas since the 19th century. The first bananas marketed in the United States were brought from Cuba in 1804

The first commercial banana farm in the United States was established in Florida, near Silver Lake, in 1876.

Currently Florida produces commercial bananas on about 500 acres and the crop is worth about $2 million annually. Primarily Bluggoe types (aka Orinoco, Horse Banana) used by local Latino populations. Growing areas are in southern Miami-Dade and the south shore of Lake Okeechobee.

Commercial Banana Production



Successful Culture of Bananas in Florida

Clean planting stock

Irrigation

Frost-free interval

Fertilization

Soil amendments

Sanitation

Mat maintenance

Clean stock is a must.
Tissue cultured plants are best.

Cleaned sword suckers are next best

Bananas require consistently moist soil.

Drought conditions will stunt plants, increase crop times, and reduce yields

Drought Stress

The banana is a plant of tropical origin. When grown in the subtropics, as it is in Florida, one of the most limiting factors is temperature.

It is therefore important to understand some of the effects of temperature on growth.

Leaf emergence stops at about 48 or 50°F.

During the summer, each plant may produce 4 or 5 leaves a month but in the winter only about half a leaf a month.

Fruit emerging in spring mature in three months compared to six months in the fall

Leaf emergence stops when temperatures are 100°F or above

Leaves can be damaged by cold even without below freezing temperatures or frost. Below is ‘Gran Nain’ after a night in January 2018 with a low of 37°F with no frost

Typical frost (can form at 38°F) and freeze damage

Cold damage removed and early spring recovery

After frost/freeze damage

Keep soil consistently moist

Remove dead leaves and psuedostems after full moon in March

Fertilize after full moon in March

Banana plants when actively growing are heavy feeders

Not particular about what they will feed on

The 1:3 (nitrogen:potassium) ratio is recommended (ex. 9-3-27)

The plant establishes how much fruit it is going to produce on the basis of how much fertilizer and moisture are available at the time the inflorescence embryo is in formation stage

Bananas have a wide tolerance of soil pH. They can grow well between pH of 4.5 and 11 but a near neutral pH is ideal for nutritional uptake

I try to fertilize every two months late March through October

Improve sandy/rocky soil with composted organic matter! Pile it high!

Livestock bedding/woodchips

Horse/Rabbit/Poultry manure

Leaf matter

Grass clippings (herbicide and systemic pesticide free ideally)

Composted kitchen scraps

No banana refuse! (More to come on this subject)

Damaging nematodes flourish in sandy soils!

Mulched

Proper sanitation is key to breaking pest and disease cycles

Prune off dead and diseased leaves.

Remove spent psuedostems.

Compost banana refuse away from banana plants and do not use banana refuse compost on banana plants

Why?

Black Sigatoka an ascomycete, *Mycosphaerea fijiensis* is a windborne fungal disease. Commercial plantations treat 25-40 times a year with protectant and systemic fungicides.

Chemical control is NOT PRACTICAL FOR HOME GROWERS!!!

Rely on cultural control (good mat spacing for air flow, routinely prune off and dispose of diseased foliage)

Banana weevil borer (corm borer), *Cosmopolites sordidus*, a native of Malaysia and Indonesia, occurs in banana growing regions.

Impractical chemical control for home growers

Sanitation to break the cycle

1) Don't bring them home (plant clean stock)

2) Immediately dispose of affected plants (to the landfill)

3) Plant less susceptible varieties

4) Do not replant bananas in area of outbreak for a couple of years

Other Pests:

Gazes of Raccoons
Rats
Squirrels
Spiraling Whitefly
Saddleback and IO Moth Caterpillars

Saddleback and IO Moth Caterpillars

Banana mat maintenance for optimum production and proper air flow

Ideal banana mat:

Mature fruiting psuedostem

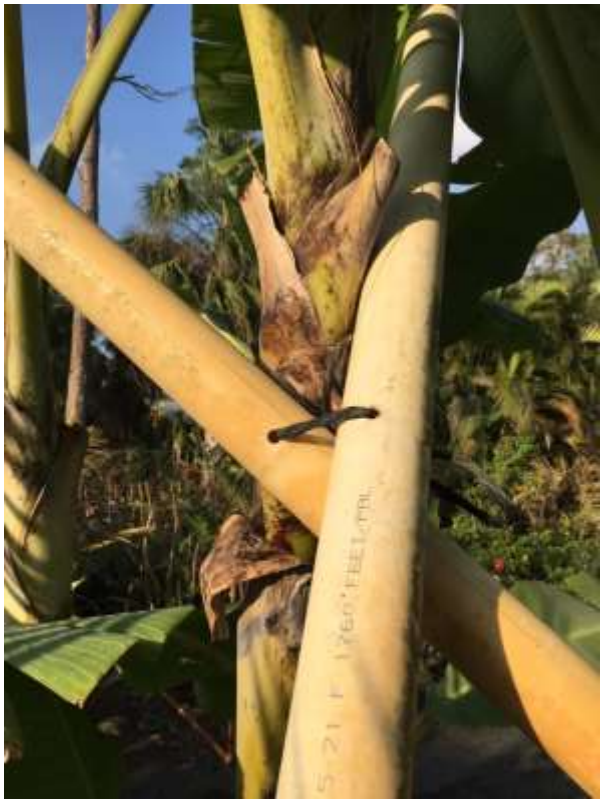
Psuedostem ¾ mature (follower)

Psuedostem ¼ mature (sword)

*Remove surplus and water suckers before ¼ mature

Odds and ends

Support of heavy racemes of fruit
Tripod made from two pieces of bamboo or pvc pipe tied together



Best readily available varieties for Florida

'Raja Puri'
'Gold Finger' (FHIA-01)
'Mona Lisa' (FHIA-02)
'Sweetheart' (FHIA-03)
'Dwarf Namwa' / 'Ice Cream'
'Mysore'/ 'Pisang Ceylon'
'Apple'/ 'Manzano'
'Cardaba'
'Kandarian'
'Orinoco'/ 'Burro' / 'Dwarf Orinoco'

For those that prefer grocery store banana flavor and texture:

‘Dwarf Cavendish’

‘Double Mahoi’

‘Gran Nain’ current commercial variety

‘Williams’

‘Gros Michel’

‘Lacatan’

Plantain Types

‘Dwarf Puerto Rican’ commercial plantain

‘African Rhino Horn’

‘Cardaba’

‘Orinoco’ / ‘Dwarf Orinoco’

‘Hua Moa’

‘Saba’

‘Mothan’

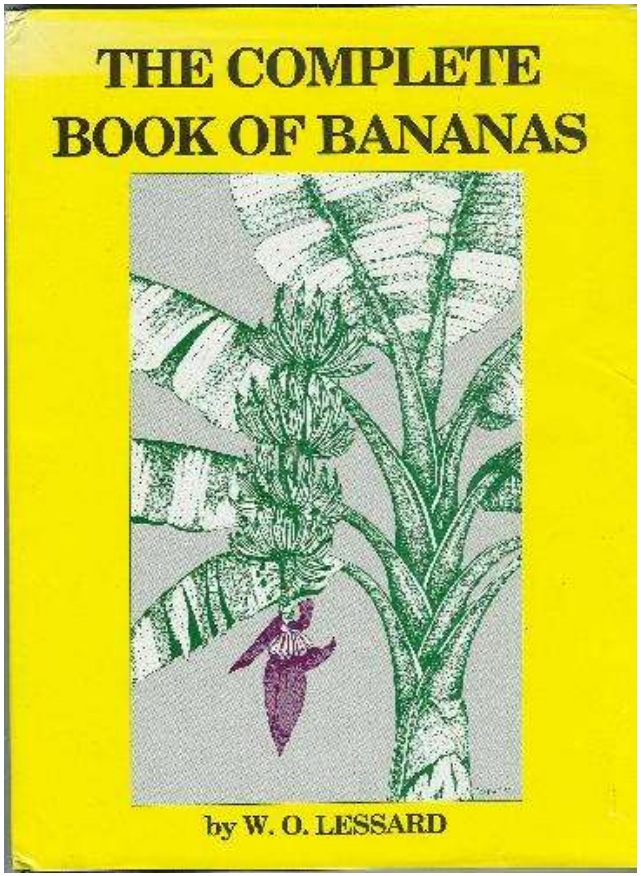
Finicky Varieties in Florida

'Kru' cold sensitive

'African Rhino Horn' corm borer magnet

'AeAe' pH and cold sensitive

Good reference book



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