



Tropical Horticulture: Lecture 25



Lecture 25 Coconut & Date

Coconut
Cocos nucifera, Arecaceae
The word coco derives from the word monkey because the nut resembles a monkey's face.
Coconut is the most important of cultivated palms.
Origin in southeast Asia with secondary center in India.





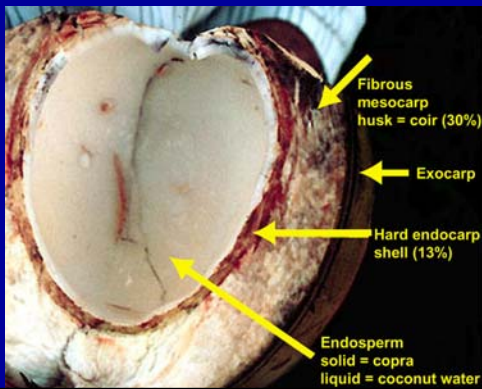


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Morphology

An unbranched monoecious palm, 40 to 100 ft tall,
18–24 inches in diameter
Flowers in the 6th year.
Matures 16–18 months after pollination

Fruits weigh 2–3 pounds each, are 24% water



Uses

Trunk: Source of timber Leaves: Thatch
Flowering stalk: tapped for sugar source of alcoholic beverage [palm wine (toddy); spirit (arrack)]
Nuts (many products)
Whole coconuts
Copra (dried kernel): 5500 nuts yield 1 tonne
Coconut oil: 8960 nuts yield 1 tonne
Coconut oil cake
Fiber (coir)
Desiccated shredded coconut
Coconut milk and coconut protein
Shell for charcoal

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Coconut Production (2001)		
Continent	1000 tonnes	Chief countries
World	50,886	
Africa	1,750	Tanzania (350), Ghana (315), Mozambique (300)
North America	1,933	Mexico (1,163), Dominican Rep. (331), Jamaica (115)
South America	2,339	Brazil (1,999), Venezuela (111), Colombia (91)
Asia	42,559	Indonesia (14,300), Philippines (13,214), India (9,000)
Oceania	2,305	Papua New Guinea (1,032), Solomon (330), Vanuatu (248)

Propagation

Plant is seed propagated.
Embryo is dormant up to 6 weeks after harvest.
Coconut is usually 2/3 covered with soil.
Seedlings are transplanted at 5–6 mo.
A desirable type is called macapuno with jelly-like endosperm and acts as a genetic recessive.
However recessive types are sterile because nuts do not germinate.
Selfing the heterozygote produces 25% macapuno nuts.
Could be overcome by embryo culture.
Need for tissue culture propagation.

Harvest

Nuts per hectare of mature trees

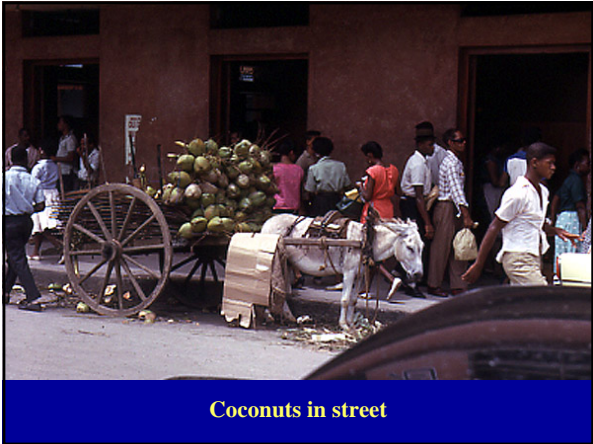
Tall	4,000–6,000
Dwarf	8,000–10,000
Tall × Dwarf	4,000–6,000

Future of the crop is for use in intercropping systems.
This is a low input crop mostly produced by small holders.
Coconut oil is widely used to manufacture detergents.

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Date

Phoenix dactylifera,
Arecaceae

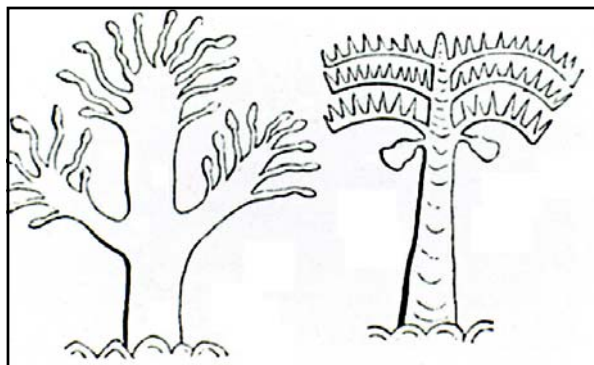
Cultivated in arid parts of the
Near East since 4000 BCE.

A dioecious plant with
staminate and pistillate
trees.

Must be pollinated to get
good fruit set.

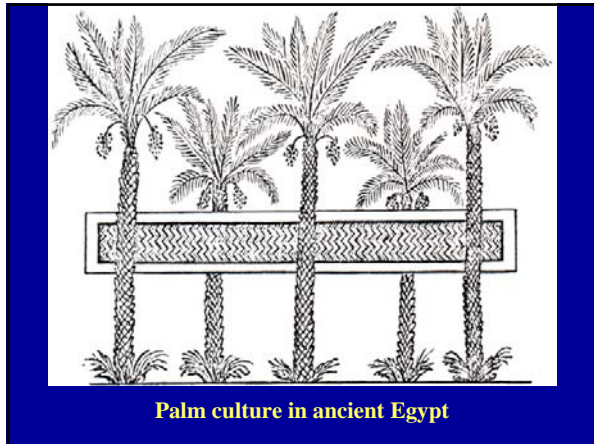






Ancient drawing of dates in Mesopotamia

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Date Production (2001)

Continent	1000 tonnes	Chief countries
World	5,353	
Africa	1,981	Egypt (1,102), Algeria (370), Sudan (177)
North America	18	US (15), Mexico (3)
Asia	3,346	Iran (900), Saudi Arabia (712), Pakistan (550)
Europe	7	Spain (7)

Rich source of nutrients when dried, 70% carbohydrates, 2% protein, 2.4% fat.
 Dates can be fermented into arrack, a potent spirit
 Fronds used for basketry and thatch
 Propagated by suckers but is very slow.
 A plant of a good cultivar may be worth \$200–500 each.
 At the present time tissue culture using somatic embryos is being used.
 A single tree can produce 100 pounds of dates.
 Must be irrigated to obtain high yields.
 Baud disease, a fusarium, is causing losses in North Africa.
 Fruit cluster is protected by wrapping in plastic.

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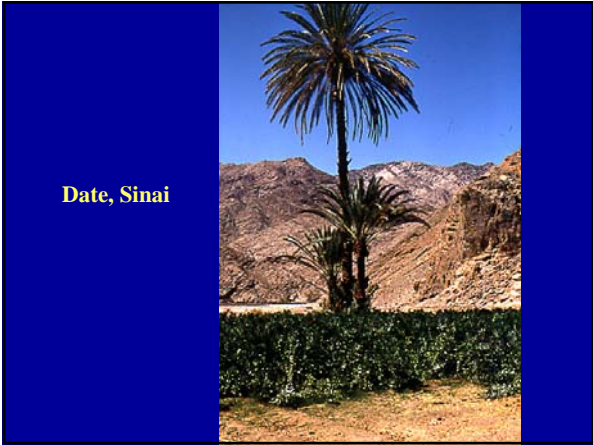






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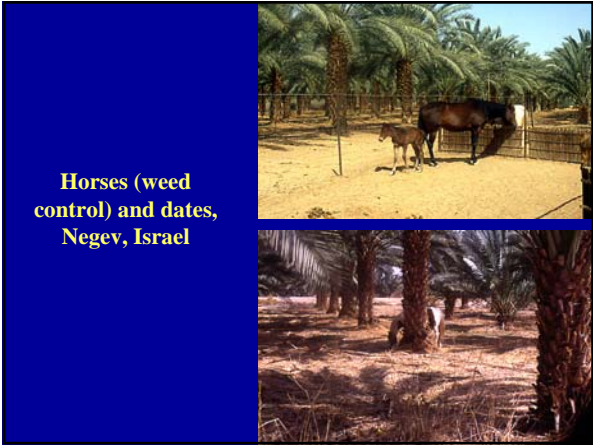






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