


TREE OF LIFE

Content

(An uncommon knowledge about a common plant)

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General

- Botanical Name : *cocos nucifera*
 - *Cocos* – “Monkey Face”
 - *Nucifera* – “Nut Bearing”
- Kingdom : Plantae
- Division : Magnoliophyta
- Class : Liliopsida
- Family : Arecaceae
- Genus : *Cocos*
- The coral is considered the world's most stable ecosystem and the coconut palm is its most successful plant



History

- Believed to be originated in Godswanaland 250 MYBP.
- Distributed when Godswanaland breaks up 200 MYBP.
- Believed to be spread all over the world by sea.
- Fossil aged 15 million years found from New Zealand
- Fossil aged 2 million years found from southern Queensland.



- **First written reference** - The coconut palm is referred to for the first time in the Sallier papyrus which states that there was a specimen of this plant in the botanical collection of Tothmes I (around 1650 BC).
- Coconut is featured in Sanskrit writings as early as 4th century BC.
- Also Ramayan and other Hindu epic stories have a place for coconut.



Environmental Conditions

- Sandy soil
- Rainfall : 750-2000 mm annually
- Humidity : 70-80 %
- Temperature : 24 °C
- Sun light is preferred.
 - Which makes shorelines of the tropics more suitable.



Coconut in Sri Lanka

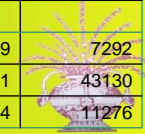
- The per capita consumption of coconut is estimated at about 120 nuts per year.
- First large scale manufacturing of soap using coconut was reported to be done in Sri Lanka and exported to England during 1820-1830.
- The export of fresh coconuts from Sri Lanka to England started in the 1880s.
- Sri Lanka stands in fourth place of coconut production in the world

Country	Percentage (%)
Indonesia	28,1
Philippines	26,0
India	17,7
Sri Lanka	4,6



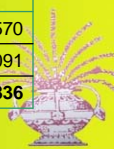
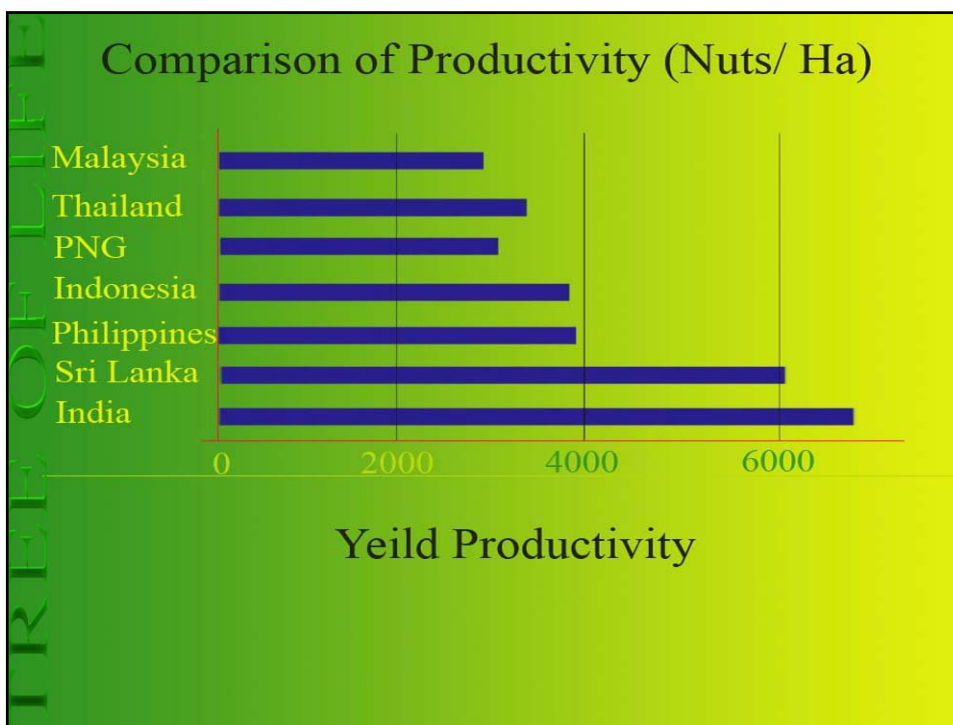
Coconut distribution in Sri Lanka

Province	District	Small Holder (MT)	Estate Sector (MT)	Total (MT)
Southern	Galle	11669	875	12544
	Matara	13317	1081	14398
	Hambantota	19461	1272	20733
North Central	Annuradapura	13851	283	14134
	Polonnaruwa	5815	825	6640
Uva	Badulla	2682	33	2715
	Moneragala	10520	181	10701
Sabaragamuwa	Ratnapura	15262	707	15969
	Kegalle	14545	865	15410
Western	Colombo	6863	429	7292
	Gampaha	36969	6161	43130
	Kalutara	10682	594	11276

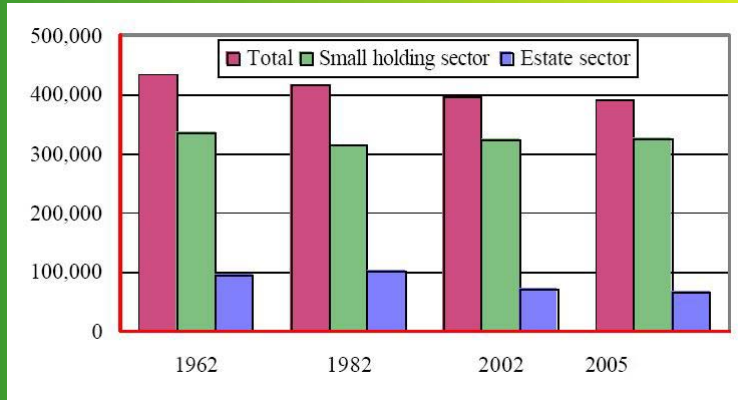


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Province	District	Small Holder (MT)	Estate Sector (MT)	Total (MT)
Central				
	Kandy	7223	665	7888
	Matale	8317	1982	10299
	Nuwaraeliya	1034	9	1043
Northern				
	Jaffna	3454	0	3454
	Killinochchi	2462	12	2474
	Mannar	910	0	910
	Vavuniya	777	0	777
	Mullativu	2656	0	2656
Eastern				
	Batticaloa	3299	238	3537
	Ampara	5039	48	5087
	Trincomalee	2108	0	2108
North Western				
	Kurunagala	95651	37919	133570
	Puttalam	28923	17168	46091
	Total	323,489	71,347	394,836

Coconut in Sri Lanka



- 205 coconut trees are lost per day
- 1075 ha of coconut land is lost per year



Uses

- 1/3 of the world is depending on coconuts as a meal or other way
- Rich in fiber, vitamins, and minerals
- Coconut is used as a nutritional source of quick energy
- In traditional medicine coconut is used to heal following. asthma, baldness, bronchitis, bruises, burns, colds, cough, earache, fever, flu, gonorrhoea, irregular or painful menstruation, jaundice, kidney stones, lice, malnutrition, nausea, rash, scabies, scurvy, skin infections, sore throat, swelling, syphilis, toothache, tuberculosis, tumors, typhoid, ulcers, upset stomach, weakness, and wounds.



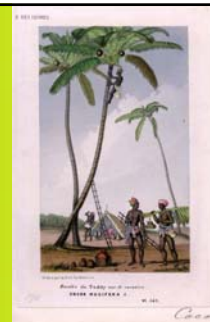
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- In modern medicine coconut is used to,
 - Kill viruses that cause influenza, herpes, measles, hepatitis C, SARS, AIDS, and other illnesses.
 - Kill bacteria that cause ulcers, throat infections, urinary tract infections, gum disease and cavities, pneumonia, and gonorrhea, and other diseases.
 - Expel or kill tapeworms, lice, giardia, and other parasites
- Improves digestion
- Prevents osteoporosis
- Improves cholesterol ratio reducing risk of heart disease
- Controls dandruff
- Totally non toxic for human
- Used for decorations in functions in Asian countries.

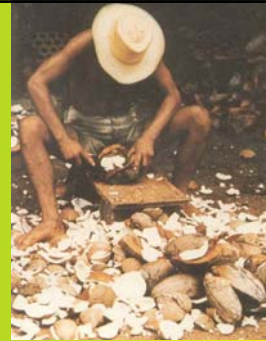


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- Used as a major part of food in tropical countries
- Coconut water is used as a beverage
- Husk is used to produce ropes, carpets, brushes, etc.....
- Shell is used to make charcoals.
- Inflorescences is used to prepare sugar, alcoholic beverages and vinegar.
- Coconut wood is used as a building material and to make furniture, toys, etc..
- Coconut leaves are used as a fuel and for decoration.
- Kernel is used for soap production
- In short all the parts of the coconut tree are used for various purposes.
- So coconut is rightly called the “ **Tree of Life**” .



Copra



- Objective is to dry the kernel from 50% moisture to 6%.
- Drying of copra is carried out by sun drying or using a drier.
- Copra is mainly milled for oil and cake while in some regions it is used for sweets.
- If poorly prepared, copra can contain Aflatoxin, a toxic chemical which causes liver cancers. However since the coconut oil is refined when prepared, the risk level is lower.



Myth of coconut oil

- During the 1st world war coconut oil was the mostly used edible oil.
- That position gradually deteriorated with the introduction of palm oil, and soybean oil
- In the past, coconut oil was believed to be unhealthy due to fat.
- Recent researches confirm it is not so.
 - Fats and oils are composed of molecules called fatty acids
 - Fatty acids are classified depending on the molecular size.
 1. Short Chain Fatty Acids (SCFA)
 2. Medium Chain Fatty Acids (MCFA)
 3. Long Chain Fatty Acids (LCFA)
 - Coconut oil is composed of MCFA
 - Most of the other fats and oils (found in meat, milk, vegetable oil, etc..) are LCFA
 - LCFA and MCFA are metabolized in the body differently.
 - MCFA do not have a negative effect on cholesterol and help to protect against heart disease unlike LCFA
- There are only few diets which contain MCFA other than coconut



Deceases

- **Burrowing Nematode**
 - Damages coconut and other inter crops in the plantations
 - The burrowing nematode is a migratory endoparasite, capable of spending its entire life within the roots.
 - Symptoms are yellowing, reduced number and size of leaves and leaflets, delay in flowering, buton shedding and yield reduction
 - Can be chemically controlled. Inter crops which shows resistance such as cocoa, pineapple should be introduced.
- **Stem Bleeding**
 - Symptom of this disease is the presence of bleeding patches on the stem
 - Tree shows yellowing, decreasing number of leaves, reduction of yield
 - Wounds should be covered with oil or tar and infected tissues should be pull out and burnt
- **Leaf Blight**
 - symptoms are withering of the distal ends of the leaves, almost breaking away from the remainder of the leaves
 - Caused by fungus.
 - Can be controlled by better irrigation and fertilizing



Pests

- **Rodents**
 - They can easily cut through coconuts husks and shells
 - Rats are the most common among them, who gnaw holes in the nut searching for coconut water.
 - Availability of fresh water can reduce rat affect
 - To control metal band wrapped around the stem are used.
- **Insects**
 - More than 750 species of insects who causes damages to coconut have been identified
 - Orthoptera, Phasmida, Lepidoptera and Coleoptera eats the leaves.
 - Parasites and predators, natural enemies of insect pests are used to eliminate insects
 - Orthoptera, Phasmida, Isoptera, Heteroptera, Homoptera, Fulgoroidea and Lepidoptera are common insects who can make considerable damage to the harvest.



- Coconut Mite
 - A kind of pest found in Sri Lanka in 1979 at Putthlam.
 - 2-3 % of loss is reported each year due to mite.
 - The nut loss per year due to mite is 12.9 % per infected palm.
 - However the total production is not largely affected in Sri Lanka due to increase in productivity.
 - Can be chemically controlled.



A Poruwa fully made using parts of Coconut tree



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Thank You

