Coconut

Cocos nucifera

Male flower

Female flower (round shaped)

Common names	Coconut, coconut palm (English) niu (Polynesia, Papua New Guinea, Fiji) coco de agua, palmera de coco (Spanish), Kokospalme (German), noix de coco (French) kelapa, nyior (Malaysia/Indonesia), niyog (Tagalog).
Origin	Generally originated from coastal areas of Southeast Asia. It belongs to Arecaceae family or the palm family.
Description	The term coconut can refer to the entire coconut palm, the seed, or the fruit. It is not a botanical nut but a drupe. A drupe is a fruit with a skin and flesh that surrounds a hardened shell with a seed inside.

Growth Habitat	Found in tropical and subtropical regions around the world, the coconut palm prospers on sandy soils and is highly tolerant of salinity. It needs abundant sunlight and regular rainfall (150 cm to 250 cm annually). Coconuts also need high humidity (70–80%+) for optimum growth and temperatures above 24°C.
Foliage	Cocos nucifera is a large palm, growing up to 30 meters tall, with pinnate leaves 4–6 meters long, and pinnae 60–90 cm long; old leaves break away cleanly, leaving the trunk smooth. There are two general types: tall and dwarf.
Flowers	It is not unusual for the first one or two inflorescences to carry only male flowers, with the number of female flowers increasing with age. From pollination, it takes about 6-9 months for the fruit to mature and 9-12 months to ripen.
Fruits	The first mature fruits can be produced 5–6 years from planting. Fruits are produced throughout the year but where rainfall is seasonal, more fruits are produced in some months than others.
Soil	Remarkably adaptable to a wide range of soil types as long as water logging does not occur within 1 m of the surface.
Fertilization	At nursery stage (6-8 months), seedlings are applied with 60-70 g NaCl or salt per seedling. Increase gradually over the years. For trees five years and above, 1.5 kg NaCl or salt/tree/year is considered to be most effective and economical to increase copra weight/nut and copra yield (per tree or per hectare).
Propagation	Coconut is seed propagated and the coconut fruit itself is the seed. The embryo takes 6 weeks to sprout from harvest, usually $\frac{3}{4}$ covered with soil, watered regularly and transplanted at 5-6 months.

Harvest	Yields can be 30 to 75 fruits per tree per year. In some parts of the world (Thailand and Malaysia), trained pig-tailed macaques are used to harvest coconuts.
Nutritional Properties	Coconut oil contains beneficial saturated fat made up of Medium Chain Fatty Acids (MCFA) that actually increases good cholesterol(HDL) and decreases bad cholesterol(LDL) and is excellent in preventing heart disease. Most fats and oils in our diet, both saturated and unsaturated, from plants or animals, are composed of Long Chain Fatty Acids (LCFA). Composition of Coconut Oil • The Saturated Fatty Acids: Most of them are Medium Chain Triglycerides, which are supposed to assimilate well. Lauric Acid is the chief contributor, with more than forty percent of the share, followed by Capric Acid, Caprylic Acid, Myristic Acid and Palmitic. • The Polyunsaturated Fatty Acids: Linoleic Acid. • The Monounsaturated Fatty Acids: Oleic Acid. • The Poly-phenols: Gallic Acid, which is phenolic acid. These poly-phenols are supposed to be responsible for the fragrance and the taste of Coconut Oil and Virgin Coconut Oil is rich in these poly-phenols. • Certain derivatives of fatty acid like Betaines, Ethanolamide, Ethoxylates, Fatty Esters, Fatty Polysorbates, Monoglycerides and Polyol Esters. • Fatty Chlorides, Fatty Alcohol Sulphate and Fatty Alcohol Ether Sulphate, all of which are derivatives of Fatty Alcohols. • Vitamin-E and Vitamin K and minerals such as Iron. • (Oil Composition: 92% Saturated, 6% mono-saturated and 2% polyunsaturated
Health Benefits	• Kills viruses that cause influenza, herpes, measles, hepatitis C, SARS, AIDS and other illnesses. • Kills bacteria that cause ulcers, throat infections, urinary tract infections, gum disease and cavities,

	pneumonia, and gonorrhea, and other diseases. • Kills fungi and yeasts that cause candidiasis, ringworm, athlete's foot, thrush, diaper rash, and other infections. • Expels or kills tapeworms, lice, giardia, and other parasites. • Provides a nutritional source of quick energy. • Boosts energy and endurance, enhancing physical and athletic performance. • Improves digestion and absorption of other nutrients including vitamins, minerals, and amino acids. • Relieves stress on pancreas and enzyme systems of the body. • Reduces symptoms associated with pancreatitis. • Helps relieve symptoms and reduce health risks associated with diabetes. • Reduces problems associated with malabsorption syndrome and cystic fibrosis. • Improves calcium and magnesium absorption and supports the development of strong bones and teeth. • Helps protect against osteoporosis. • Helps relieve symptoms associated with gallbladder disease. • Relieves symptoms associated with Crohn's disease, ulcerative colitis, and stomach ulcers. • Improves digestion and bowel function. • Relieves pain and irritation caused by hemorrhoids. • Reduces inflammation. • Supports tissue healing and repair. • Supports and aids immune system function. • Helps protect the body from breast, colon, and other cancers. • Is heart healthy; improves cholesterol ratio reducing risk of heart disease. • Protects arteries from injury that causes atherosclerosis and thus protects against heart disease. • Helps prevent periodontal disease and tooth decay.

	• Functions as a protective antioxidant. • Helps to protect the body from harmful free radicals that promote premature aging and degenerative disease. • Does not deplete the body's antioxidant reserves like other oils do. • Improves utilization of essential fatty acids and protects them from oxidation. • Helps relieve symptoms associated with chronic fatigue syndrome. • Relieves symptoms associated with benign prostatic hyperplasia (prostate enlargement). • Reduces epileptic seizures. • Helps protect against kidney disease and bladder infections. • Dissolves kidney stones. • Helps prevent liver disease. • Is lower in calories than all other fats. • Supports thyroid function. • Promotes weight loss by increasing metabolic rate. • Is utilized by the body to produce energy in preference to being stored as body fat like other dietary fats. • Helps prevent obesity and overweight problems. • Applied topically helps to form a chemical barrier on the skin to ward of infection. • Reduces symptoms associated the psoriasis, eczema, and dermatitis. • Supports the natural chemical balance of the skin. • Softens skin and helps relieve dryness and flaking. • Prevents wrinkles, sagging skin, and age spots. • Promotes healthy looking hair and complexion. • Provides protection from damaging effects of ultraviolet radiation from the sun. • Helps control dandruff. • Does not form harmful by-products when heated to normal cooking temperature like other vegetable oils. • Has no harmful or discomforting side effects.

	• Completely non-toxic to humans.
Commercial Uses	– The most premium product is Virgin coconut oil valued for its high level of anti oxidants, vitamins, minerals and lauric acid, a saturated fat found in breast milk. – Coconut milk or oil is used for cooking. – Coconut water is the cleanest water for drinking or mixed with enzymes to make jelly. – The sap derived from incising the flower clusters of the coconut is drunk as neera also known as toddy or tuba(Philippines), tuak (Indonesia and Malaysia) or karewe (fresh and not fermented, collected twice a day, for breakfast and dinner) in Kiribati. When left to ferment on its own it becomes palm wine. Palm wine is distilled to produce arrack. In the Philippines this alcoholic drink is called lambanog or "coconut vodka". If left to ferment too long it will turn into vinegar instead of stronger wine.The sap can be reduced by boiling to create a sweet syrup or candy such as te kamamai in Kiribati or dhiyaa hakuru and Addu bondi in Maldives. It can be reduced further to yield coconut sugar also referred to as palm sugar or jaggery. – Fiber from the husk is used in making ropes, mats, etc. The fronds, or stiff mid-ribs of coconut leaves are used to make brooms. – The hard shells can be used for musical instruments, ornaments, cooking utensils. The trunks can be made into small bridges, for furniture, small boats. – Roots for medicine, toothbrushes. Coconut meal for livestock meal, – Fiber and husk for fuel and to repel mosquitoes. Charcoal for removal of odors. – Medicinal uses: hospital intravenous solutions, in baby formula, recommended for those with cystic fibrosis and digestive problems.

Food Suggestion	Ingredients for **Coconut Jelly :-** (A) • 1 litre young coconut water • 18g jelly powder • 125g castor sugar • 3 pandan leaves (knotted) (B) • 100ml UHT milk • Young coconut flesh (scraped from the young coconut) Bring (A) to a low simmering boil until sugar and jelly powder dissolve. Mix (B) in, and continue to cook for 3-4 minutes. Remove mixture from the heat and leave aside for about 5 minutes. Pour coconut jelly mixture into a wet tray and add in coconut flesh. Put aside to set then chill in the refrigerator before cutting into slices.