

PROPERTIES and COMPOSITION

Table 1. Physical Characteristics of Coconut Flour

Parameters	Characteristic of Coconut Flour
Color	White to cream to very light brown
Odor	Typical nutty odor
Taste	Bland taste
Particle Size	Fine to medium
Shelf-life	26 months at 20°C
	14 months at 30°C
	9 months at 40°C

Source: Philippine National Standards for Coconut Flour BAFPS 75-2010

Table 2. Chemical Composition of Coconut Flour

Chemical Composition	Value (%) Dry Weight Basis
Moisture	≤ 5.0
Ash	4.0 – 6.0
Protein	10.0 – 19.0
Fat	10.0 – 12.0
Total Dietary Fiber	40.0 – 60.0
Carbohydrates	50.0 – 70.0
Free Fatty Acid	< 0.20 (as lauric acid)
	0.01 – 0.02 (as oleic acid)
Peroxide Value, meq	< 3.0

Table 3. Vitamin and Mineral Content of Coconut Flour

Vitamin/Mineral	mg/100g
Thiamine	0.09
Niacin	2.30
Riboflavin	0.08
Calcium	70.00
Phosphorus	470.00
Iron	8.10

Source: College of Home Economics, University of the Philippines (1979)

Table 4. Amino Acid Composition of Coconut Flour

Amino Acid	mg/50g
Alanine	111.38
Aspartic Acid	227.32
Arginine	320.98
Glutamic Acid	515.90
Glycine	106.82
Serine	126.06
Tyrosine	92.65
Threonine	87.08
Valine	128.59
Isoleucine	42.02
Leucine	146.82
Lysine	100.24
Phenylalanine	85.56
Methionine	23.29
Histidine	82.02

Source: College of Home Economics, University of the Philippines (1993)

CLASSIFICATION

Premium Class

white to creamy white color;
fine particle size (0.15-0.20 mm)

Class I (Good Quality)

very light brown in color;
medium particle size
(0.21-0.25 mm)

Class II (Fair Quality)

very light brown to brown color;
medium particle size
(0.21-0.25 mm)

USES and HEALTH BENEFITS

- ✓ High-fiber and high-protein flour for breads, cookies and snack foods
- ✓ Filler (5-25%) for emulsified products such as sausages, meat loaf and burger patties
- ✓ Functional food ingredient because of high amounts of insoluble dietary fiber (PCA, 2001) aiding the smooth movement of digested material through the gut reducing constipation (Fardet, 2010)
- ✓ Help lowers glycemic index (GI) of wheat-flour based foods (Trinidad et al., 2003).
- ✓ Source of soluble fiber for beneficial gut bacteria (Chambers et al., 2018).
- ✓ Can help reduce cholesterol and triglyceride levels (Trinidad et al., 2006)
- ✓ Gluten-free, suitable for people with celiac disease, wheat allergy, and non-celiac gluten sensitivity (Itzlinger et al., 2018)
- ✓ Popular choice for those following grain-free paleo diet

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Coconut Processing Technologies

COCONUT FLOUR

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Department of Agriculture
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COCONUT FLOUR

refers to the screened food-grade product obtained after drying, expelling and/or extracting most of the oil or milk from coconut meat. The granulation is dependent upon the degree of grinding and meshing to which the raw material has been subjected and varies from 30-250 mesh. Coconut flour is proven to contain dietary fibre.

TYPES OF COCONUT FLOUR

FULL FAT

is prepared from unpared, dehydrated and edible coconut kernels by pre-pressing and solvent extraction.

DEFATTED

is obtained from food grade copra defatted by solvent/mechanical extraction. The resulting flour is brownish in color because the kernel is unpared. Sub classified into: low fat (10-15%); medium fat (16-25%); high fat (25-48%). flour

LOW FAT, HIGH FIBER

is made from finely ground coconut meat residue with a fat content of 10-15%.

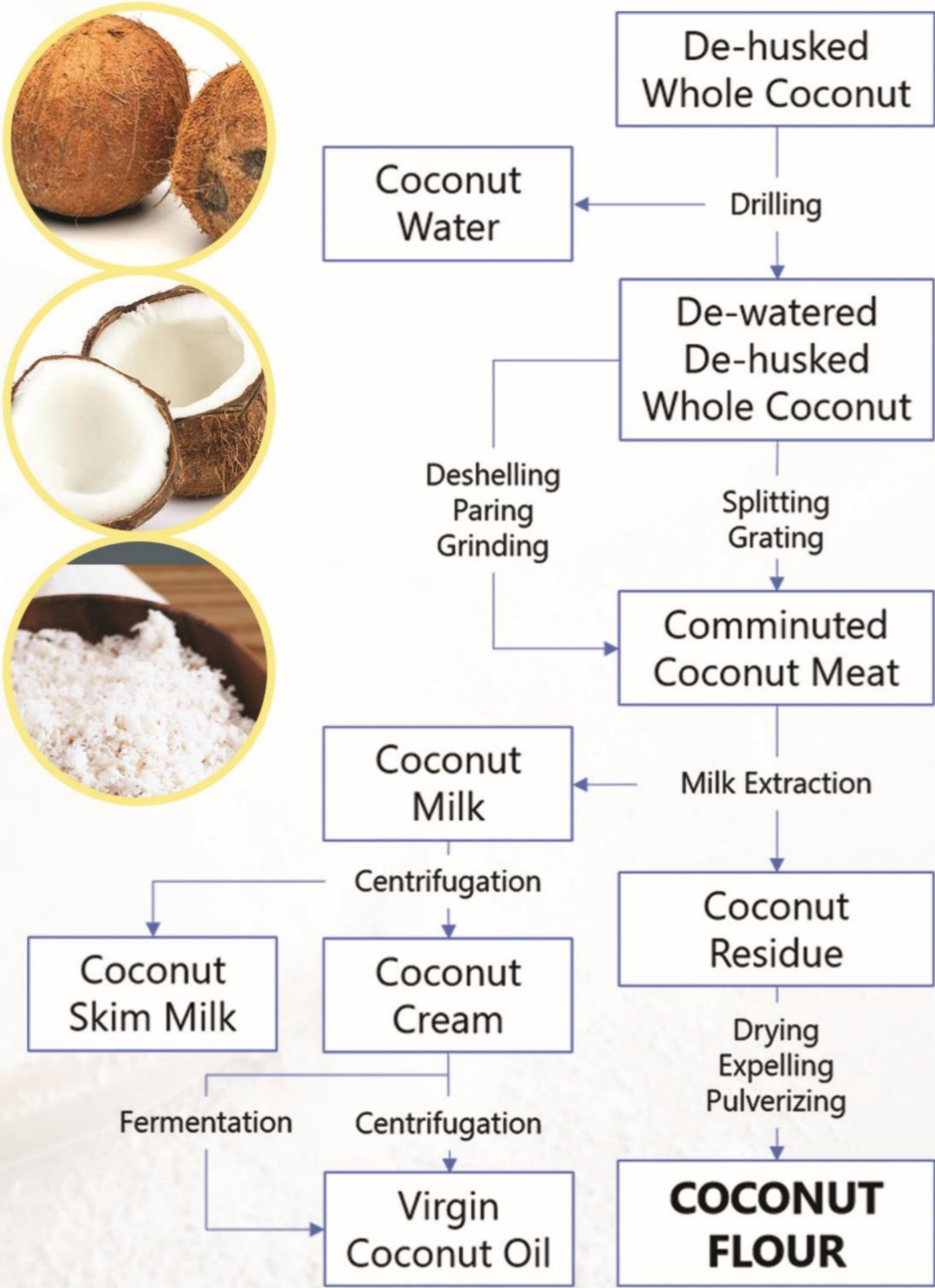
HGIH PROTEIN, LOW FIBER

is enzyme-translated coconut flour made from finely ground residue.

PARING FLOUR

is prepared from the paring of the coconut kernel

Integrated Production of Defatted Coconut Flour and Virgin Oil (Bawalan—Masa Process)



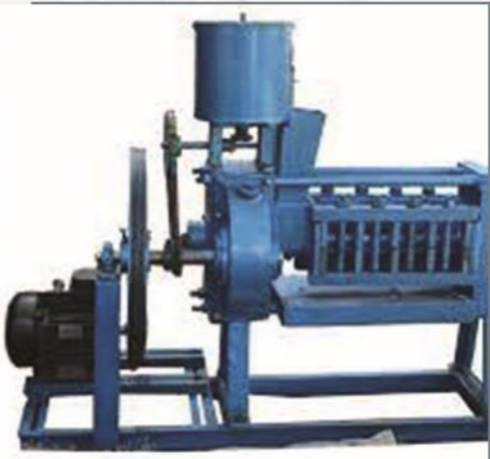
PRODUCTION PROCESS

FRESH-DRY PROCESS	WET PROCESS
Description	
involves drying of the ground coconut meat, followed by residue oil extraction and pulverization produces high protein which can be used as wheat substitute	involves extraction of coconut milk, then drying of the coconut meat residue, followed by expelling of excess oil and grinding/pulverization
Characteristics	
cream or light brown in colour; high fat; taste range from pronounced coconut flavour to bland taste	cream colored; high fiber; low fat; less coconut flavour
Yield / Recovery	
33% flour from whole nut	26% flour from whole nut
Process Requirement	
fresh coconut meat with or without paring	fresh residue after coconut milk extraction



DRYING

involves removal of water from the food product



EXPELLING

extracting the oil from the dried coconut residue



PULVERIZING

crushing of the coconut flakes resulting to powder-like form