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COCONUT FOOD PRODUCTS

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"Our Business is Industry…"

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COCONUT FOOD PRODUCTS

INTRODUCTION

Nothing is wasted in coconut. All the parts of the tree can be converted into useful products.

Coconut water is a very good raw material for vinegar making by the ordinary fermentation method. *Nata* de coco, a white cellulose material is produced by the action of a microorganism *Acetobacter xylinum* on coconut water. When sweetened, this is a popular dessert and used as a component of fruit cocktail, fruit salad and ice cream.

Coco flour, coco chips, coco milk, copra and cooking oil are obtained from the coconut meat, which is 28% of the whole nut. Several other food products are prepared from the meat, like the *buco* leather (young coconut) and coconut *tahu* which is extracted from the coco milk. Even the coconut meal or "*sapal*" finds its way in many of our common household recipes, like coco burger, coconut *kroepeck*, cake, pretzels and confectioners.

Except when specified, the coconut as raw material being referred to is one that has attained full maturity while on the tree.

COCONUT MACAROON

Materials Needed

3		eggs
¾	cup	condensed milk
1	tsp	vanilla
4	cup	desiccated coconut*
2/3	cup	sugar
1	tbsp	butter or margarine

Utensils Needed

mixing bowl
egg beater
wooden ladle
measuring cups & spoons
oven

Packaging Material

paper cups
styrofor with plastic cover

Procedure

Beat eggs till light and fluffy. Add butter or margarine and sugar, then beat thoroughly. Add vanilla, condensed milk and desiccated coconut. Line muffin pan with paper cups and fill with the mixture. Bake in a moderate oven 177°C (350°F) for 15 minutes or until slightly brown.

*** Maybe prepared using oven-dried *sapal.***

MASAPAN DE COCO

Materials Needed

1	cup	grated coconut
1	tbsp	flour
½	cup	evaporated milk
2		egg yolks
1	tsp	vanilla
¼	cup	crushed pineapple
6	tbsp	chopped toasted peanuts
¾	cup	sugar

Utensils Needed

measuring cups and spoons	stove
wooden ladle	oven
carajay/saucepan	

Packaging Material

paper boxes

Procedure

1. Put and mix the coconut, sugar, peanuts, pineapple in a *carajay* or frying pan with constant stirring until almost dry.
2. Add milk. Cook over low heat with constant stirring.
3. Add the slightly beaten egg yolks and vanilla.
4. Continue stirring until thick enough to mold.
5. Pour into paper boxes for molding.
6. When boxes are filled, brush top with beaten eggs and bake until golden brown on top.
7. Serve hot or cold.

COCO BRITTLE

Materials Needed

2	cups	toasted grated coconut
1	cup	sugar
½	tsp	salt

Utensils Needed

measuring cups and spoons	oven
saucepan	kneading board
wooden spoon	rolling pin

Packaging Material

wide mouth jars
PP/PE bags

Procedure

1. Caramelize sugar and salt in a saucepan. Stir once in a while to prevent burning.
2. When melted and syrup-like, add toasted coconut and mix well until mixture does not stick to the sides of the pan.
3. Pour on well-greased board and roll with a well-greased rolling pin until very thin.
4. Cut to desired pieces and store in clean wide-mouth jars.

COCO CANDY

Materials Needed

1	cup	grated coconut
½	cup	whole milk
1	cup	sugar
⅓	cup	molasses

Utensils Needed

sharp knife
mechanical grater
carajay/saucepan
stainless steel spoon
stove
pans
stainless steel basin

Packaging Material

cellophane
PE bags (0.003-in thickness)

Procedure

1. Pour and mix milk, molasses and sugar in a *carajay* and allow to boil.
2. Add grated coconut and cook over low heat with constant stirring.
3. Cook until a little of the mixture hardens when dropped into cold water.

4. Pour into butter-greased pans taking care to spread evenly to obtain uniform thickness. Allow to cool slightly.
5. Cut into small pieces or according to desired sizes and wrap in cellophane individually.

BUKAYO

Materials Needed

1	kg	grated coconut
1	kg	*pulot-ipot* (molasses)
0.5	kg	corn syrup

Utensils Needed

kitchen scale	cheesecloth
carajay	wooden mold
wooden spoon or ladle	stainless steel knife
	thermometer

Packaging Material

cellophane
PE bags (0.003-in thickness) or tin containers

Procedure

1. Dissolve corn syrup in a small amount of water in a *carajay* over low flame.
2. Add *pulot-ipot* previously strained thru cheesecloth to remove impurities and other extraneous materials.
3. Boil mixture to 115°C (239°F) with occasional stirring.
4. Add grated coconut and cook to desired end point; i.e., when the mixture no longer sticks to the sides of the *carajay* when scooped out.
5. Spread on a wooden mold.
6. Cool and cut into desired pieces.
7. Wrap individually in cellophane and place in polyethylene bags.
8. Store in tin containers.

COCONUT SYRUP FROM COCONUT MILK

Materials Needed

grated coconut
refined sugar
di-sodium phosphate, food grade

Utensils Needed

blender	laboratory thermometer
saucepan	refractometer
wooden spoon or ladle	weighing scale

Packaging Material

2T cans or sterilized glass jars
with new PVC caps

Procedure

1. Mix grated coconut with water in the proportion of 1 part grated coconut to ½ part water, by weight.
2. Extract milk by hand or by using an expeller or press.
3. Mix '*sapal*' with water (1 part '*sapal*': ½ part water). Extract milk.
4. Collect coconut milk extracts. Repeat 2 to 3 times.
5. Heat milk at 80° to 90°C (176° - 194°F) for 15 minutes and blend in a blender or colloid mill to break coagulated proteins.
6. Add di-sodium phosphate in a concentration of 0.25% by weight of the milk.
7. Add sugar at a ratio of 1 part milk to 1 part sugar (by weight).
8. Mix well and cook to a total soluble solids content of 70% (use a refractometer to determine end point). Pour hot in clean containers.
9. Seal completely.
10. Cool and label.

COCONUT HONEY FROM COCONUT MILK

Materials Needed

coconut skim milk
glucose
sugar
stabilizer (sodium alginate)

Utensils Needed

blender
saucepan
wooden spoon or ladle
laboratory thermometer
refractometer
weighing scale

Packaging Material

2T cans or sterilized glass jars
with new PVC caps

Procedure

1. Extract coconut milk as described under coconut syrup (steps 1-4).
2. Store milk preferably in the refrigerator to allow separation of cream from the water portion (skim milk). Collect the skim milk. (Separation may also be accomplished with the use of a centrifuge.)
3. To one part of the skim milk, add ½ part sugar and ½ part corn syrup.
4. Blend sugar and sodium alginate (stabilizer) together. Use alginate at a concentration of 0.25% of the mixture. Add to skim milk.
5. Heat the mixture in a double boiler for 15 minutes, remove from fire and blend until smooth. At this temperature, total soluble solids reading is about 76-77%.
6. Cook in double boiler with constant stirring to a temperature of 220°F.
7. Pour hot product into sterilized container and seal completely. Cool at room temperature and label.

COCONUT WHEY SYRUP (Simulated Karo Syrup) FROM COCONUT MILK

Materials Needed

coco whey
refined sugar
citric acid

Utensils Needed

blender
saucepan
wooden spoon or ladle
laboratory thermometer
refractometer
weighing scale

Packaging Material

sterilized glass jars with new PVC caps

Procedure

A. Preparation of Whey

1. Prepare coconut skim milk as described in Coconut Honey (steps 1 & 2).
2. Add little by little 25% citric acid solution until proteins coagulate and mixture becomes clear.
3. Decant the coconut whey (liquid portion) into a collecting container. Scoop out the coagulated proteins and collect.

B. Cooking

1. Dissolve sugar in the whey (1 part sugar: 4 parts whey).
2. Cook in a double boiler or steam jacketed kettle until the total soluble solids content reaches 75%.
3. Pour hot in sterilized containers and seal completely.
4. Cool and label.

COCO JAM (Low-Fat)

Materials Needed

20	kg	coconut skim milk
3¾	kg	brown sugar
1¼	kg	glucose
		citric acid (.025% by wt. of formulation)

Utensils Needed

blender	laboratory thermometer
saucepan	refractometer
wooden spoon or ladle	weighing scale

Packaging Material

sterilized glass jars with new PVC caps

Procedure

1. Prepare the skim milk as described in Coco Honey (steps 1 & 2).
2. Add the sugar and stir well.
3. Pour in the glucose.
4. Mix well and boil mixture for 20 minutes.
5. Blend or pass the mixture through a colloid mill or homogenizer until smooth.
6. Strain thru cheesecloth or a nylon mesh.
7. Boil again and cook with constant stirring until thick.
8. When almost done, add the citric acid previously dissolved in a small amount of skim milk.
9. Continue boiling to an end point of 75 to 76% total soluble solids content as measured by a refractometer. An alternative method is the cold water test in which a drop of the mixture forms a soft ball in cold water.
10. Pour hot mixture in sterilized container. Cool, seal and label.

SWEETENED CONDENSED COCO MILK

Materials Needed

coco skim milk
coco cream (*gata*)
refined sugar
agar-agar

Utensils Needed

measuring cups and spoons
double boiler
wooden spatula
stove

Packaging Material

sterilized glass jars with new caps

Procedure

Dissolve sugar and agar-agar (optional) in the skim milk. Add 1 tablespoon coco cream to every cup of coco skim milk. Cook in a double boiler with stirring at medium heat until thick. Small amount of agar-agar may be added to give body to the product.

Pour hot in sterilized glass jars, allow to cool and seal completely.

COCONUT CHIPS

Materials Needed

coconuts
refined sugar

Utensils Needed

sharp knife
mechanical slicer
carajay/saucepan
stainless steel spoon

Packaging Material

paper/polyethylene or paper/foil/polyethylene bags

Procedure

1. Pierce eyes of the coconut and allow water to drain.
2. Preheat oven at 177°C (350°F) and put dewatered coconut until it cracks.
3. Remove the coconut meat from the shell and parings.
4. Slice the coconut meat with a peeler.
5. Mix thoroughly 2 parts slices with 1 part sugar (by weight).
6. Soak for 30 minutes and drain.
7. Dry in an oven drier at 70°C (158°F) for 2 hours or use solar dryer until surface is dry.
8. Toast in an oven till golden brown.
9. Cool and pack.

BUKO LEATHER

Materials Needed

3	cup	*buko* meat
3	tbsp	sugar
1	tsp	glucose
3	tsp	unflavored gelatin
¼	cup	water

Utensils Needed

Scraper
stainless steel knife
measuring cups and spoons
blender
mechanical drier

Packaging Material

PP/PE plastic bags

Procedure

1. Scrape off the coconut meat and remove the parings.
2. Cut into small pieces. Set aside.

3. Dissolve the unflavored gelatin in boiling water. Remove from fire.
4. Blend the meat together with gelatin, sugar and glucose using a blender.
5. Pour in greased pan or trays.
6. Dry in forced draft dryer at 60°-65°C (140°-149°F) for 5 hours until dry.
7. Cool and remove from pans.
8. Pack in plastic bags and store in refrigerator.

COCO SAPAL PRETZELS

A. Bench-Scale Formulation and Process

Materials Needed

2	kg	flour
0.8	kg	*sapal*
½	kg	shortening or lard
1	kg	brown sugar
19	g	vanilla
19	g	refined salt
560	mL	tap water
30	g	baking powder

Procedure

Sift flour and baking powder together and set aside. Add vanilla to the water and mix well. Cream the shortening in dough mixer. To this, add flour mixture alternately with vanilla and '*sapal*', beginning and ending with the flour. Pass dough thru an extruder and collect strips, cut into 4-5 inch pieces and arrange in baking sheets. Bake at moderate heat (250 – 350°F) for 10 minutes. ***Yield: approximately 720 pcs./3.6g each.***

B. Home-Scale

Materials Needed

2	cups	all-purpose flour
2	cups	*sapal*
1/3	cup	shortening
¾	cup	brown sugar
1½	tsp	baking powder
½	tsp	vanilla
½	tsp	salt
1/3	cup	water

Utensils Needed

mixing bowl
stainless steel spatula
rubber spatula
baking sheets
simple extruder or meat grinder
oven
sharp knife

Packaging Material

PP/PE plastic bags

Procedure

Sift flour and baking powder together and set aside. Add vanilla to the water and mix well. Cream the shortening. Add flour mixture alternately with vanilla and '*sapal*', beginning and ending with the flour. Pass dough thru an extruder and collect strips, cut into 4-5 inch pieces. Bake at moderate heat (250° - 350°F) for 10-15 minutes. ***Yield: approximately 90 pcs/3.6 g each.***

Proximate Composition of Coco *Sapal* Pretzels	
Protein – 7.7%	Moisture – 2%
Fat – 19%	Ash – 1.9%
Carbohydrates – 70%	Crude Fiber – 1.3%
Calories – 479.4	

COCONUT *KROEPECK*

Materials Needed

2	cups	rice flour
½	cup	coco '*sapal*'
½	tbsp	salt
3	cups	water
1/8	tsp	*vetsin* (optional)
		cooking oil

Utensils Needed

steamer
measuring cups and spoons
aluminum trays
drier
frying pan
strainer

Packaging Material

PP/PE plastic bags

Procedure

1. Steam the washed coconut *sapal* for 10-15 minutes. Remove from fire.
2. Add and mix rest of the ingredients.
3. Pour thinly in greased aluminum trays.
4. Dry in dryer at 60°-65°C (140°-149°F) or under the sun.
5. Remove from trays.
6. Pack in plastic bags.
7. Deep fry in cooking oil. Cool and serve.

COCO BURGER

Materials Needed

2	cups	coconut '*sapal*'
¼	cup	flour
1	tsp	salt
5	tsp	toyo
1	pc	egg
2	tsp	cornstarch

¼	tsp	vetsin (optional)
¼	tsp	black pepper
¼	cup	chopped onions

Utensils Needed

steamer
measuring cups and spoons
frying pan
strainer

Packaging Material

PP/PE plastic bags

Procedure

1. Steam washed coconut *sapal* for 10-15 minutes. Remove from fire.
2. Add and mix the rest of the ingredients and form into patties.
3. Fry in hot oil.

COCONUT *TAHU*

Materials Needed

2	cups	coconut milk (*gata*)
2	cups	water
1½	bars	*gulaman*
1	cup	brown sugar
½	cup	water
¼	cup	sago

Utensils Needed

casserole
measuring cups and spoons
stove
wooden ladle

Packaging Material

molder

Procedure

1. Heat *gulaman* in 2 cups water until it dissolves.
2. Add coconut milk.

3. Stir the mixture and heat over a low flame.
4. Pour in a mold and let it cool.
5. To make syrup, boil brown sugar in ½ cup water and add cooked sago.
6. Serve *tahu* with syrup.

COCONUT WATER VINEGAR

Materials Needed		**Quantity**
fresh coconut water	15-20	L
refined or brown sugar	12.5	cups or 2.25 kg
yeast	1¼	tsp
vinegar starter*	5	L

Pure culture available at Environment & Biotechnology Division (EBD), ITDI

Packaging Material sterilized jars

Procedure

1. Collect fresh coconut water. Strain thru cheesecloth.
2. Dissolve sugar in coconut water.
3. Pasteurize at 65°C (149°F) for 20 minutes or boil for 5 minutes.
4. Cool. Pour into previously sterilized jars.
5. Add yeast and stir. Cover with brown paper or cheesecloth and rubber band.
6. Ferment for 4-5 days (**alcoholic fermentation**).
7. Decant or filter using cheesecloth. Pasteurize at 65°C for 20 minutes.
8. Cool. Add vinegar starter. Stir. Allow ¼ of the container as headspace. Cover as above.
9. For vinegar, ferment for 1 month (**acetic fermentation**).

   As vinegar starter, ferment for 2-3 weeks (vinegar starter to be used as starter for the next batch).

10. Pasteurize and bottle.