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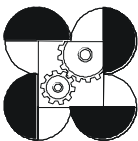
Telefax: 837-2071 loc. 2265 / 837-6156

e-mail: tsd@itdi.dost.gov.ph

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BANANA PROCESSING



Department of Science and Technology
INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE
DOST Compound, General Santos Avenue
Bicutan, Taguig City, Metro Manila, PHILIPPINES
<http://www.itdi.dost.gov.ph>

‘Our Business is Industry...’

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Prepared by: **ELNILA C. ZALAMEDA**
TSD-ITDI

Ma. ELSA M. FALCO
FPD-ITDI

Edited by: **VIOLETA B. CONOZA**
TSD-ITDI

Cover layout by: **LUZMIN R. ESTEBAN**
TSD-ITDI

Adviser: **NELIA ELISA C. FLORENDO**
TSD-ITDI

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BANANA PROCESSING

INTRODUCTION

Banana has remained to be one of the major fresh fruits for export of the Philippines. In 1992, the leading regional producer of banana was Southern Mindanao with 1,281,780 metric tons followed by Northern and Central Mindanao. Among the provinces comprising these regions, Davao del Norte and del Sur account for large plantations of cavendish bananas for export.

BANANA CHIPS

Product Description

Banana chips are thinly sliced bananas either lengthwise or crosswise. The slices are deep fried in hot oil and packed in tightly sealed pouches. They come in sweetened or salted flavors and others with banana essence. The product is crispy, golden yellow in color with a characteristic flavor and aroma of banana.

Banana chips are moisture sensitive that one percent increase in moisture level can cause considerable decrease in its crispiness and often leading to off-flavor and odor which adversely affects product acceptability.

Sweetened Banana Chips

Ingredients

- 5 kg green matured, firm banana (*saba* variety)
- 1 kg sugar (refined)
- 1 L water
- 6 L oil

Utensils/Materials

- | | |
|-------------------------|--------------------------|
| knife (stainless steel) | absorbent paper |
| chopping board | measuring cup |
| banana slicer | <i>carajay</i> |
| strainer/ladle | PE/PP bags |
| colander | plastic sealer |
| basin/mixing bowl | thermometer (100°-250°C) |
| stove | weighing scale |

Procedure

1. Prepare 50% sugar solution. Mix 1 kg sugar in 1 L water until it dissolves. You may heat the mixture to ease in dissolving and then cool. Set aside.

2. Wash and soak bananas in chlorinated water (100 ppm) for 10 minutes.
3. Peel and slice thinly (0.05 – 1 mm) green, mature bananas. Apply oil to the slicer to ease in slicing.
4. Soak sliced banana chips in oil (1:5 to 1:8 ratio) to prevent sticking during frying.
5. Put slices in wire mesh and fry in cooking oil at high temperature (150°C – 175°C) until light brown or when bubbling ceases (approximately 3-5 minutes). Remove from cooking oil (first fried).
6. Soak in sugar solution for 2-3 minutes and then drain.
7. Fry again the sweetened banana slices in cooking oil until golden brown or when bubbling slows.
8. Drain and cool in trays.
9. Separate chips that stick together.
10. Pack in appropriate packaging materials such as: large, clean glass bottles, large cans or PE plastic bags. Seal, label and store in cool, dry storage room.

Salted Banana Chips

Ingredients

1	kg	green matured banana (<i>saba</i> variety)
10	g	salt (2 tsp)
480	g	water (2 cups)
3	L	oil

Utensils/Materials

knife (stainless steel)	measuring spoon
chopping board	absorbent paper
banana slicer	<i>carajay</i>
strainer/ladle	PE/PP bags
colander	plastic sealer
basin/mixing bowl	thermometer (100°-250°C)
stove	weighing scale

Procedure

1. Prepare 2% salt solution (approx. 10g salt:480g water).
2. Wash and soak bananas in chlorinated water (100 ppm) for 10 minutes.
3. Peel and slice thinly (0.05 – 1 mm) green, mature bananas crosswise or lengthwise and soak for 2 hours in the salt solution.
4. Drain and put the banana slices on wire-mesh container.
5. Heat cooking oil to high temperature (150°C – 175°C). Fry the slices with occasional stirring until light brown or when bubbling ceases.
6. Cool in trays lined with absorbent (or tissue) paper.
7. Sort out chips that stucked together.
8. If soaking of the slices in salt solution is omitted, you may dust the cooled fried chips with refined salt (1.5% by weight of final chips). Powdered salt may also be used.
9. Pack in appropriate packaging materials like polyethylene plastic bags or plastic bottles for retail.
10. Seal and label.
11. Store in a cool, dry storage room.

BANANA SAUCE

Product Description

Banana sauce is prepared using clean mixture of banana puree, sugar, spices, and vinegar with or without stabilizers and preservatives, cooked to a certain temperature and desired consistency. They are usually packed in bottles.

Ingredients

Basis: 5000 grams

750	g	banana (<i>saba</i> variety, matured, yellow)	65	g	salt
			15	g	<i>labuyo</i>
700	g	sugar	15	g	bell pepper
50	g	modified starch	75	g	garlic
35	g	carboxyl methyl cellulose (CMC)	25	g	onion
			1.5	g	white pepper
517	mL	vinegar	1.5	g	all-spice
			2,750	g	water

Utensils/Materials

colander	casserole
basin	stove
chopping board	food processor/blender
knife (stainless steel)	weighing scale
ladle	bottles

Procedure

1. Wash bananas and soak in chlorinated water (100 ppm) for 10 minutes.
2. Blanch in boiling water for 10 minutes.
3. Peel and detach strings adhering to the pulp.
4. Grind banana. Add water to banana. Blend the mixture.
5. Mix sugar, starch, CMC, salt, spices and vinegar. Heat and allow to simmer for about ten (10) minutes. Strain.
6. Add spiced vinegar to banana puree. Blend and heat in a double boiler with constant stirring at 75° – 80°C for 10 minutes or until thick in consistency.
7. Immediately hot fill cooked sauce in clean sterilized bottles. Seal tightly.

BANANA FLOUR

Product Description

Banana flour is prepared from mature unripe bananas with a full three-quarter stage of maturity by drying the sliced bananas with or without antioxidants and grinding and sieving to the right mesh size (300 mesh sieve \approx 45 microns). They are immediately packed in air tight pouches to prevent discoloration and absorption of moisture. The product is cream to off white in color.

Because banana flour has no gluten, the bread obtained will have little volume if it was used alone. It is therefore necessary to combine it with wheat flour. The usual proportion used is 25% banana flour and 75% wheat flour. In addition, this can also serve as raw material for making banana sauce and other sauces because of its high starch content.

Ingredients

green bananas, *saba* or *cardaba*
salt
Water

Utensils/Materials

solar dryer	knife
chopping board	grinder
measuring cups/spoons	sifter
basin	

Procedure

1. Prepare brine solution (1 tbsp salt to 5 cups water).
2. Wash bananas and peel. Soak immediately in brine solution.
3. Wash again to remove latex.
4. Cut into halves and remove seeds.
5. Slice longitudinally at 1/3 cm thick.

6. Dry (60° – 70°C) in cabinet dryer for 8-10 hours.
7. Grind 2-3 times or until very fine.
8. Pass through a fine sieve and pack in plastic bags. Seal, label and store.

BANANA IN SYRUP

Ingredients

- | | | |
|-----|----|---|
| 1 | kg | banana (<i>saba</i> variety, matured – 80% yellow & 20% green) |
| 240 | g | sugar (1 cup) |
| 420 | g | water (1¾ cup) |

Utensils/Materials

- | | |
|-------------------------|-----------------------|
| colander | stove |
| basin/mixing bowl | ladle |
| chopping board | weighing scale |
| knife (stainless steel) | glass jars or bottles |
| spoon | thermometer |
| casserole | preserving bottles |

Procedure

1. Wash and soak bananas in chlorinated water (100 ppm) for 10 minutes.
2. Blanch bananas in boiling water for about 10 minutes.
3. Peel and detach strings adhering to the pulp. Cut peeled bananas crosswise or diagonally at about 1–1.5 cm thick. Arrange in preserving bottles. If desired, whole bananas maybe used.
4. Prepare 50°Brix sugar solution (approx. 1 part sugar:1 part water) and boil.
5. Pour the boiling hot syrup to the packed bananas, filling the bottles to approximately 1/3-inch from the top.
6. Exhaust at 82°C for 10 minutes. Seal caps tightly.

7. Process bottled product upright in a vessel of boiling water for 30 minutes. Time of boiling depends on the size of bottle.
8. Air cool. (Quick cooling helps prevent over cooking of the product.)
9. Wash, dry, label and store.

BANANA CATSUP (Process 1)

Ingredients – should all be measured by weight

1	kg	cavendish (<i>saba</i>) banana	100	grams	rock salt
			1/8	tsp	cloves (fine <i>clavo de comer</i>)
1	head	onion			
1	pc	red bell pepper	1/8	tsp	cinnamon
1	head	garlic	1/8	tsp	paprika
3 ³ / ₄	liter	water	1	tsp	catsup red # 600
20	pcs	chili pepper	1/8	tsp	strawberry red
500	ml	vinegar	1/8	tsp	chocolate brown
1	kg	brown sugar	5	grams	sodium benzoate

Utensils/Materials

casserole	weighing scales
strainer	thermometer
bowls	ladle
chopping board (plastic)	osterizer/food processor
stainless steel knives	funnel
measuring spoons	colander

Packaging Material

sterilized bottles/jars

Procedure

1. Wash rare ripe bananas (80% yellow and 20% green).
2. Boil bananas for 10 minutes. Drain water. Cool immediately

3. Peel, slice bananas into 3 cm thickness.
4. Slice onions, bell pepper and garlic then add 3 and ¼ liters of water. Add in sliced bananas. Grind using osterizer/blender for 1 minute.
5. Add ½ liter of water in chili pepper. Grind using osterizer/blender. Strain and mix the extract in banana mixture.
6. Add vinegar, sugar, salt and spices. Cook at 80° to 85°C for 40 minutes, with stirring or until thick.
7. Add other ingredients previously dissolved in small amount of water such as catsup red, chocolate brown, strawberry red and sodium benzoate.
8. Pour in sterilized bottles while hot and seal thoroughly.
9. Label and store.

BANANA CATSUP (Process 2)

Ingredients

1	kg	cavendish (<i>saba</i>) bananas
100	grams	(7 tbsp) vinegar
1	gram	(3 pcs) pepper, <i>labuyo</i>
5	grams	(1 pc) onion, powdered (medium)
1	gram	(1 clove) garlic, powdered (big)
10	grams	(2 tsp) refined salt
80	grams	(6 tbsp) sugar
2.7	grams	(½ tsp) red dye (no. 2)
2.8	grams	(½ tsp) yellow dye (no. 5)
5	grams	(1 tsp) cinnamon
200	grams	(14 tbsp) water

Procedure

1. Wash rareripe bananas (80% yellow, 20% green).
2. Boil bananas for 10 minutes. Drain water. Cool immediately.

3. Peel and slice bananas into 3-cm thickness.
4. Weigh the pulp and add an equal amount of water. Grind to reduce size.
5. Add 0.5% of citric acid based on the weight of puree. Blend in Waring blender for one minute.
6. Grind the spices and dissolve them in vinegar. Add them to the puree.
7. Cook the mixture for 10 minutes at 75°-85°C, stirring continuously to prevent scorching.
8. Add coloring and continue heating to desired consistency.
9. While catsup is hot, pour it in clean, sterilized bottle.

BANANA PASTILYAS

Ingredients

- | | |
|-------|--|
| 1 kg | (5 cups) mashed ripe bananas (<i>saba</i> or cavendish) |
| 300 g | (2¼ cups) sugar |
| | butter or margarine |

Utensils Needed

- | | |
|----------------|---------------|
| rolling pin | spatula |
| frying pan | kitchen knife |
| chopping board | wax paper |
| kneading board | |

Procedure

1. Prepare the mashed bananas as follows: Boil the ripe bananas (*saba* or cavendish) for 5 minutes. Peel and slice into 3 cm. thick.
2. Grind the sliced bananas until it is mashed, add the sugar and cook over slow fire. Stirring should be done constantly until a clear mixture is obtained with the desired consistency. The mixture should not stick to the sides of the frying pan.

3. Transfer the mixture over a kneading board covered with wax paper. Sprinkle small amounts of sugar over the wax paper. Spread the mashed mixture using a rolling pin until it is 1 inch thick.
4. Spread butter and small amounts of sugar over the mixture.
5. Make slices of about 4cm x 1cm. Cool and wrap individually.

BANANA PUREE

Procedure

1. Peel the mature ripe bananas (cavendish or *saba*).
2. Mash or grind with an equal amount of water. Add preservatives (ascorbic, 0.1% and/or citric acid, 0.2%) until it is in uniform consistency.
3. Heat the puree to 82-93°C for 10 minutes.
4. Fill in sterilized containers and seal immediately.

DRIED BANANA BLOSSOMS

Ingredients

- 1 tbsp sodium metabisulfite
- 4 c water
- sugar, vinegar, soy sauce (to taste)
- banana blossoms

Utensils Needed

- | | |
|-----------------------|-------------|
| measuring spoons/cups | colander |
| casserole | cheesecloth |
| stove | drying tray |

Procedure

1. Dissolve 1 tablespoon sodium metabisulfite in four cups water and boil the solution.
2. Strip apart banana blossoms, wrap in cheesecloth, and blanch in the boiling solution for 5 minutes. Drain using colander.
3. Mix equal quantities of sugar, vinegar and soy sauce and soak the blanched blossoms overnight in this mixture.
4. Drain, dry under the heat of the sun and pack in plastic bags.