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# Cassava Recipes for Household Food Security



Presidential Committee  
on Cassava Export  
Promotion (PCCEP)

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ISBN 978 131 293 9  
Printed in Nigeria by IITA

Correct citation: Sanni L., B. Maziya-Dixon, A.O. Onabolu, B.E. Arowasafe, A.E. Okoruwa, R.U. Okechukwu, A.G.O. Dixon, A.D.I. Waziri, P. Ilona, C. Ezedinma, G. Ssemakula, J. Lemchi, M. Akoroda, F. Ogbe, G. Tarawali, E. Okoro, and C. Geteloma. 2006. Cassava recipes for household food security. IITA Integrated Cassava Project, Ibadan, Nigeria.

## Preface

The President and Commander-in-Chief of the Armed Forces of the Federal Republic of Nigeria, Chief Olusegun Obasanjo, GCFR set up the Committee on Cassava Export Promotion under my humble chairmanship in March 2004. The mandate of the Committee is to ensure increased production, processing, packaging, and export of cassava and cassava products to satisfy both domestic and export markets. The ultimate objective is to make cassava a major non-oil foreign exchange earner, employment generator, import substitute, poverty alleviator, and eventually, a substantial contributor to our national food security situation.

Prior to the introduction of the Presidential Initiative on Cassava, the nation was unable to utilize up to 1% of the economic benefits of this wonder crop. Mr President has to be commended for awakening the nation to the tremendous economic opportunities that cassava offers our dear country. Today, cassava has attained a new status, not only in Nigeria, but also in sub-Saharan Africa.

With the setting up of the Presidential Committee on Cassava Export Promotion, the nation was awakened to the various uses of cassava. In addition to the local uses of cassava, it is now common knowledge that cassava is used for the production of food seasonings (e.g., Maggie cubes), flour, ethanol, starch, and livestock feeds. Cassava is also used in the oil drilling industry, coal mining, paint industry, cosmetics, and various snacks. Another key activity in which cassava is used includes the production of glucose syrup, high fructose syrup, sorbitol, citric acid, and even fermentation vitamins including lysine and some other B group vitamins. In summary, cassava is thus being used for human consumption, animal feed, and industrial applications. The Committee has therefore done much to place cassava as a major commodity for agricultural and industrial development. In fact, if the potential of cassava is properly harnessed, it will no doubt be an alternative to oil in Nigeria. Thus, while oil is our "Black Gold" cassava can easily become our "White Gold". The multiplier effect of processing cassava into different types of products will generate more employment opportunities for our teeming population in the urban areas as well as those living in the rural areas.

The Cassava Initiative is, therefore, one fundamental initiative that is a legacy of Mr President. The initiative is no doubt a veritable tool for alleviating poverty, generating employment, food security, industrial usage, and

socioeconomic development in line with the NEEDS Programme of the Federal Government which needs to be sustained.

This publication avails the reader of the numerous ways of preparing, processing, and consuming cassava products apart from the traditional menu. These non-traditional cassava products include cassava root fritters, cassava croquettes, cassava root doughnuts, cassava crisps, cassava pancake, cassava meat balls, cassava meat pie, cassava bread, cassava cookies, cassava sausage rolls, cassava queen cakes, cassava chinchin, and cassava egg rolls. The know-how on the preparation of these types of food products from cassava is expected to make a breakthrough in the food and snacks industry in Nigeria and indeed the West African subregion. Cassava will eventually prove to be the crop for household food security and income generation in Africa in line with the aspirations of NEPAD and the achievement of the Millennium Development Goals (MDGs) of the United Nations.

**Ambassador A.D. Idris Waziri**  
**Honorable Minister of Commerce/Chairman**  
**Presidential Committee on Cassava Export Promotion**

## **Acknowledgement**

The International Institute of Tropical Agriculture (IITA) gratefully acknowledges the following investors in the Integrated Cassava Project: the Federal Government of Nigeria (FGN), the Niger Delta Development Commission (NDDC), Shell Petroleum Development Company of Nigeria (SPDC), the Nigerian National Petroleum Corporation (NNPC), and its joint venture partners, the United States Agency for International Development (USAID), and the state governments in Nigeria for cooperation and support.

Special thanks also go to the various cassava caterers, processors, and bakers, Program Managers and staff of Agricultural Development Programs (ADPs) in operational states of the project, the National Root Crops Research Institute (NRCRI), the Root and Tuber Expansion Programme (RTEP), the Presidential Committee on Cassava Initiative, the Cassava Growers Association of Nigeria (CGAN), the Cassava Processors Association of Nigeria, Nigerian bakers and caterers, and NARs in other African countries for the provision of basic information on various recipes for cassava products, which formed the raw material of this document. We thank them for their friendly and accommodative nature during the training, seminar, field visits, and other fora on adding value to cassava in Africa.

**R. Hartmann**



# Contents

Preface.....	v
Acknowledgement .....	vii
Introduction .....	x
High Quality Cassava Flour Production Process .....	1
Short Crust Pastry .....	2
Meat Filling .....	3
Cassava Root Fritters .....	4
Cassava Croquettes .....	5
Cassava Root Doughnuts .....	6
Cassava Crisps .....	7
Cassava Pancake .....	8
Cassava Meat Balls .....	9
Cassava Meat Cake .....	10
Cassava French Fries .....	11
Cassava Chaps .....	12
Steamed Cassava With Fish And Groundnut .....	13
Cassava Relish .....	14
100% Cassava Bread .....	15
Composite flour bread [wheat (90%) + cassava (10%)] .....	16
Cassava Meat Pie .....	17
Cassava Sausage Rolls .....	18
Cassava Cookies .....	19
Coconut Biscuits .....	20
Orange Drop Cassava Cookies .....	21
Cassava Queen Cakes .....	22
Cassoy Rich Cake .....	23
Cassoy Scones .....	24
Cassava Strips .....	25
Cassava Cocktail Tidbits .....	26
Cassava Flour Doughnuts .....	27
Cassava Chinchin .....	28

Cassava Egg Rolls .....	29
Cassava Threads .....	30
Cassoy Fritters .....	31
Cassoy Fingers .....	32
Cassava Starch Production Process .....	33
Cassava Starch Bread Buns .....	34
Cassava Flakes (Crackers) .....	35
Gurudi .....	36
Cassava Salad Cream .....	37
Tapioca Production Process .....	38
Tapioca Granules Or Pearls .....	39
Cassava Leaves .....	40
Cassava Leaves Soup .....	41
Nutrient profile of new food products from cassava .....	42
References .....	43
Appendix: Volume, Weight, and Measure .....	44

## Introduction

Cassava (*Manihot esculenta* Crantz) is one of the most important food staples for several millions of people in tropical Africa and Asia. With current production estimated at 34 million tonnes, Nigeria is the largest producer of cassava in the world. Africa accounts for more than 50% of total world production. However, although cassava is consumed in many different forms in Africa, traditionally prepared food products such as *gari*, *lafun*, *fufu*, *kokonte*, and *attieke* still constitute the principal mode of utilization. There is, therefore, the need to diversify the uses of cassava other than its preparation into traditional food products. Cassava utilization in composite flour for use in bakery and confectionery products provides an opportunity to diversify its food applications.

Presently, the utilization of cassava flour in bakery products, confectionery, and other food products is relatively new and insignificant compared to its potential and wide opportunities available. Fortunately, simple and appropriate technologies now exist for the use of cassava flour as a partial replacement for wheat flour in bread making, biscuits, pastries, and snack foods (Crabtree and James 1982; Dendy and Totter 1988; DeRuitter 1988; Satin 1988; Eggleston and Omoaka 1994; Onabolu, Abass, and Bokanga 1998). Substitution of 10–20% cassava flour for wheat in bread production would save substantial foreign exchange earnings spent on the importation of wheat flour by Nigeria and other African countries. The recent promulgation into law, effective from 1 July 2006 of the mandatory inclusion of 10% cassava flour in bread produced in Nigeria, is a welcome step by the government towards cassava industrialization and valorization.

The recipes are a compilation of previous published works, and those developed during various trainings across West Africa. The recipes compiled in this book comprise food products made from fresh cassava roots, starch, and high quality cassava flour. They have been verified in the laboratory and standardized. The intent is that the recipes would find application in homes to diversify cassava foods available to households. It is also hoped that small-scale enterprises would scale up the production of some of the recipes for income generating activities.

# High Quality Cassava Flour Production Process



1. Peel and wash freshly harvested cassava roots.

2. Grate the roots into a mash.



3. Dewater the mash by pressing in a clean bag.



4. Break the pressed mash (cake) into fine granules; manually or mechanically.



5. Spread thinly on clean trays or black polyethylene sheets on a raised platform (to prevent contamination) and allow to sun dry. In large-scale processing, dryers like cabinet, rotary or flash dryer may be used.



6. Finely mill the dried cassava granules, sift if necessary.



7. Package in polyethylene bags or any other airtight containers.



*Note: In high quality cassava flour making, there should not be fermentation. The processing should be completed within 24 hours (one day) in order to obtain high quality, unfermented flour, suitable for baking. Also, cassava flour should pass through a fine mesh to meet the Nigerian industrial standard for edible cassava flour.*

## Short Crust Pastry



### Ingredients

Cassava flour, sifted	2 cups	200 g
Margarine	¼ cup	50 g
Egg	1 medium	45 g
Salt	1 level teaspoon	5 g
Baking powder	1 teaspoon	5 g
Water	¼ cup	62 ml

### Method

1. Weigh out 150 g ( $\frac{3}{4}$ ) of cassava flour in a bowl.
2. Add margarine, salt and mix. Keep aside.
3. Put the remaining 50 g cassava flour in  $\frac{1}{4}$  cup of boiling water, remove from heat, and fold into the water 3 times.
4. Add the mixture to the flour that has margarine and salt. Mix thoroughly with fingertips, until the mixture resembles breadcrumbs.
5. Whisk egg, and add to the mixture.
6. Mix with finger tips to obtain stiff dough, which leaves the sides of the bowl.
7. Use the pastry for any recipe, which requires short crust pastry such as meat pie, doughnuts, etc.

## Meat Filling



### Ingredients

Cassava flour, sifted	1 tablespoon	10 g
Minced meat, cooked	3 cups	750 g
Onion, finely chopped	2 tablespoons	20 g
Garlic, finely chopped	1 teaspoon	3 g
Soy sauce	1 tablespoon	16 g
Salt	1 teaspoon	5 g
Vegetable oil	3 tablespoons	45 ml
Water	1 cup	250 ml
Black pepper	1 teaspoon	5 g
White pepper	1 teaspoon	5 g
Maggi	1 cube	4 g

### Method

1. Cook the minced meat and spice with black pepper, white pepper, onion, salt, and maggi.
2. Fry finely chopped onion and garlic in a 45 ml vegetable oil.
3. When onion starts to get brown, add minced meat and the soy sauce and continue stirring.
4. Mix 10 g cassava flour with a  $\frac{1}{8}$  cup of water (30 ml) and add to the mixture.
5. Continue frying until the mixture becomes jelly like.

*Note: you can replace minced meat with fish or chicken.*

## Cassava Root Fritters



4

### Ingredients

Cassava roots, grated	2 cups	450 g
Onions, grated	1 small	30 g
Eggs, whisked	2 medium	90 g
Salt	1 teaspoon	5 g
Vegetable oil	3 cups	750 ml

### Method

1. Mix grated cassava roots, onions, and eggs thoroughly.
2. Add salt to taste.
3. Scoop into hot oil, using spoon or clean hand.
4. Deep fry until golden brown.

## Cassava Croquettes



### Ingredients

Cassava roots, finely grated	5 cups	1125 g
Coconut, finely grated	2½ cups	150 g
Salt	2½ teaspoons	12.5 g
Meat filling	1 cup	250 g
Vegetable oil	3 cups	750 ml

### Method

1. Mix grated cassava and coconut.
2. Add salt to taste.
3. Take a tablespoon of the mixture, flatten on palm, and put a teaspoon of meat filling in the center.
4. Cover with the mixture so that the meat filling does not come out during frying.
5. Roll into ball.
6. Deep fry in hot oil until golden.



## Cassava Root Doughnuts



6

### Ingredients

Cassava roots, grated, dewatered	5 cups	1125 g
Banana, ripe, mashed	2 cups	250 g
Sugar, granules	¼ cup	50 g
Yeast	2 teaspoons	10 g
Vegetable oil	3 cups	750 ml

### Method

1. Add sugar, yeast, and mashed banana to the grated cassava mash.
2. Mix together.
3. Cover and set aside for 1 hour.
4. Heat vegetable oil.
5. Mold mixture into balls (2–4 cm diameter) and deep fry until golden brown.
6. Serve hot.

## Cassava Crisps



### Ingredients

Cassava roots, grated, dewatered	2 cups	450 g
Salt	½ teaspoon	2.5 g
Bouillon cube	½ cube	2 g
Vegetable oil	3 cups	750 ml

### Method

1. Take 2 cups (450 g) of grated dewatered cassava mash.
2. Add salt and bouillon cube, mix together.
3. Knead well to bind.
4. Divide into desired portions and make a flat shape of each portion, using palms.
5. Deep fry in hot oil until golden brown.

## Cassava Pancake



### Ingredients

Cassava roots, grated, dewatered	2 cups	450 g
Ginger (chopped)	½ teaspoon	2 g
Egg, whisked, beaten	2 medium	90 g
Sugar	¼ cup	50 g
Vegetable oil	1 tablespoon	15 ml

### Method

1. Add 2 cups of grated dewatered cassava mash.
2. Add ginger, eggs, and sugar.
3. Mix thoroughly.
4. Spread a little drop of vegetable oil on the frying pan and put on low heat.
5. Scoop paste in the heated pan and allow baking, turn each side until both sides are evenly brown.
6. Repeat until all the pastes are baked.
7. Serve with coffee or tea as breakfast food.

## Cassava Meat Balls



### Ingredients

Cassava roots, grated, dewatered	2 cups	450 g
Minced meat, cooked	1 level cup	87.6 g approx.
Pepper, chopped	1 large	10.6 g approx.
Onions, sliced	1 medium	20.5 g approx.
Curry powder	1 level teaspoon	2.5 g
Salt	1 level teaspoon	5 g
White pepper	1 level teaspoon	1.5 g
Vegetable oil	3 cups	750 ml

### Method

1. Mix grated cassava mash, minced meat, salt, white pepper, and curry powder thoroughly.
2. Add the sautéed onion and pepper.
3. Mix to form a smooth dough.
4. Cut into desired size and mold.
5. Deep fry until brown.
6. Serve hot.

## Cassava Meat Cake



10

### Ingredients

Cassava mash, cooked	2 cups	250 g
Minced meat, cooked	1 cup	100 g
Breadcrumbs	¼ cup	50 g
Garlic, crushed	1 clove	2.5 g
Onions, chopped	1 medium	50.6 g
Pepper, dry, ground	1 teaspoon	1.5 g
Salt	1 teaspoon	5 g
Egg	1 small	26.3 ml
Vegetable oil	3 cups	750 ml

### Method

1. Mix cooked mashed cassava, minced meat, garlic, onion, pepper, and salt to form very thick dough.
2. Roll out on a flat board to about 1-cm thick, cut out into desired shapes.
3. Cut in desired portions and drop each in whisked egg, coat with crushed breadcrumbs.
4. Deep fry in hot oil until brown.

## Cassava French Fries



### Ingredients

Cassava root, sweet variety

1 medium

Vegetable oil

3 cups

750 ml

### Method

1. Peel and wash cassava root.
2. Cut into chips of finger size, using knife or French fry cutter.
3. Deep fry in oil at medium heat until golden brown.

## Cassava Chaps



12

### Ingredients

Cassava mash cooked	2 cups	250 g
Minced meat	$\frac{3}{4}$ cup	100 g
Onions, chopped	1 small	50.6 g
Salt	1 level teaspoon	5 g
Spice (white pepper)	1 level teaspoon	2.8 g
Garlic	1 clove	2.5 g
Egg	1 medium	45 g
Vegetable oil	2 tablespoons	30 ml

### Method

1. Cook minced meat with onions, salt, spice, and garlic.
2. Fry the meat in 2 tablespoons of vegetable oil.
3. Remove from heat and add to cassava mash.
4. Mix thoroughly til smooth.
5. Roll on a flat board and cut to desired shapes.
6. Coat with egg, and arrange in greased baking tray.
7. Bake until light brown.

## Steamed Cassava With Fish And Groundnut



### Ingredients

Cassava root, fresh	1 medium	250 g
Curry powder	1 teaspoon	2.5 g
Fresh fish	1 medium	200 g
Groundnut, roasted	½ cup	47.5 g
Salt	1 level teaspoon	5 g

### Method

1. Peel, wash, and slice cassava root. Remove the stringy middle portion.
2. Chop into small cubes.
3. Debone fish (cooked or smoked).
4. Pound roasted groundnuts and make a paste.
5. Mix all ingredients together.
6. Scoop and wrap tightly in banana leaves of desired sizes.
7. Steam for about 20 minutes.
8. Serve warm as main dish.



## Cassava Relish



### Ingredients

Cassava root, fresh	1 medium	250 g
Groundnut, roasted	1½ cups	142.5 g
Soy bean, roasted, milled	1 cup	66 g
Tomatoes, fresh, sliced	2 small	55 g
Onions, chopped	1 small	50 g
Salt	1 level teaspoon	5 g
Bouillon cube	½ cube	2 g
Water	2 cups	500 ml

### Method

1. Peel, wash, and cook cassava until soft.
2. Chop into cubes.
3. Slice tomatoes and onions and add to the cooked cassava.
4. Make paste of groundnut and soy flour and add to the cassava.
5. Add salt and bouillon cube. Simmer until it is thick.
6. Serve hot.

## 100% Cassava Bread



### Ingredients

Cassava flour	2 cups	200 g
Sugar	2 teaspoons	10 g
Salt	½ teaspoon	2.5 g
Yeast	1 teaspoon	5 g
Margarine	1 heaped tablespoon	20 g
Eggs	2 small	52.6 g
Water	¾ – ½ cup	83–125 ml

### Method

1. Weigh all dry ingredients into a mixing bowl.
2. Add margarine and mix thoroughly for about 1 minute.
3. Whisk eggs thoroughly and add.
4. Add water gradually (83–125 ml, depending on the cassava flour) and mix for another 10 minutes at high speed. Take up the batter with a spatula and allow an easy drop.
5. Pour the batter into a greased baking pan, put in a warm place, and allow to ferment for about one hour until the size doubles.
6. Bake at 200 °C (395 °F) until golden brown crumb color is observed.
7. Remove the bread from the oven, remove the bread from the pan, and allow to cool before slicing or wrapping.

## Composite flour bread [wheat (90%) + cassava (10%)]



### Ingredients

Cassava flour	1 cup	100 g
Wheat flour	9 cups	900 g
Sugar	10 teaspoons	50 g
Margarine	5 tablespoons	100 g
Yeast (instant)	5 teaspoons	25 g
Salt	2½ level teaspoons	12.5 g
Water	2–3 cups	500–750 ml

### Method

1. Weigh all ingredients except water into mixing bowl.
2. Mix thoroughly.
3. Add water and mix until soft dough, which can easily be handled is obtained.
4. Knead until smooth.
6. Cut into desired sizes and shape and put in a well-greased bread pan.
7. Allow to rise until size doubles.
8. Bake at 200 °C (395 °F) for 15–20 minutes or until the crust is brown.
9. Remove from oven and remove the bread from the pan, and allow to cool before slicing or wrapping.

## Cassava Meat Pie



### Ingredients

Shot crust pastry

Meat filling

### Method

1. Make short crust pastry.
2. Roll out to about  $\frac{1}{4}$  inch (6–7 mm) thickness on a floured board.
3. Cut into circular shape with a big cutter.
4. Fill one side of the circle with the meat filling and fold the other side over. Press the edges with a fork to close firmly.
5. Brush the surface with beaten egg white and bake in a hot oven at  $175^{\circ}\text{C}$  ( $350^{\circ}\text{F}$ ) for 30 min.

*Note: The dough can be fried instead of baked to make fried meat pie.*

## Cassava Sausage Rolls



### Ingredients

Short crust pastry		120 g
Sausage meat		240 g
White pepper	1 teaspoon	5 g
Black pepper	1 teaspoon	5 g
Curry powder	½ teaspoon	1.25 g

### Method

1. Make short crust pastry.
2. Roll out pastry on a floured board to 1 cm thickness.
3. Divide pastry into desired pieces of cylindrical shape.
4. Season sausage meat with white pepper, black pepper, and curry to taste.
5. Put the sausage meat on one side and fold over the other side of each piece.
6. Close edges firmly with fork.
7. Brush the surface with beaten egg white to glaze the pastry.
8. Bake in a hot oven at 175 °C (350 °F) for about 30 min.

## Cassava Cookies



### Ingredients

Cassava flour	2 cups	200 g
Margarine	½ cup	100 g
Sugar	¼ cup	50 g
Baking powder	1 teaspoon	5 g
Vanilla essence	1 teaspoon	5 ml
Salt	½ teaspoon	2.5 g
Nutmeg, grated	¼ teaspoon	1.5 g
Water	⅛–¼ cup	30–61 ml

### Method

1. Weigh all the dry ingredients in a bowl.
2. Mix thoroughly.
3. Add margarine and mix.
4. Add water gradually to make a stiff dough (should not stick to the sides of the bowl).
5. Roll out on a floured board and cut into desired shapes and size with biscuit cutters.
6. Prick the surface with a fork to prevent the dough from rising.
7. Bake in a hot oven at 175 °C (350 °F) for 15 minutes or until evenly light brown.

## Coconut Biscuits



### Ingredients

Cassava flour	1 cup	100 g
Sugar	¼ cup	50 g
Margarine	¼ cup	50 g
Coconut, grated	¼ cup	50 g
Egg	1 small	26.3 g
Baking powder	½ teaspoon	2.5 g
Water	1 tablespoon	15 ml

### Method

1. Cream sugar and margarine until fluffy.
2. Add cassava flour, baking powder, and the grated coconut.
3. Mix to a stiff paste.
4. If too stiff, add some water.
5. Roll out on a floured board.
6. Cut into shapes and arrange on a greased cookie tray or any other baking tray.
7. Prick with a fork to prevent the dough from rising.
8. Bake for 15 minutes at 175 °C (350 °F) or until evenly brown.

## Orange Drop Cassava Cookies



### Ingredients

Cassava flour	3½ cups	350 g
Margarine	¾ cup	150 g
Brown sugar	1 cup	200 g
Orange juice	¼ ml	50 ml
Vanilla essence	1 teaspoon	5 ml
Baking powder	2 teaspoons	10 g
Baking soda	1 teaspoon	5 g
Salt	¼ teaspoon	1.2 g
Milk	½ cup	100 ml
Eggs, whisked	2 small	52.6 g
Orange peel	2 tablespoons	10 g
Nuts, chopped	1 cup	100 g

### Method

1. Cream margarine and sugar.
2. Add eggs, orange peel, juice, vanilla, and milk.
3. Mix all the dry ingredients and add to the creamed mixture.
4. Add the nuts and mix thoroughly.
5. Drop from teaspoon on greased baking tins or cookie sheets and flatten.
6. Bake for 15 minutes at 175 °C (350 °F) until light brown.



## Cassava Queen Cakes



### Ingredients

Cassava flour, sifted	3 cups	300 g
Sugar	½ cup	100 g
Margarine	1 cup	200 g
Baking powder	1½ teaspoons	7.5 g
Vanilla essence or other flavor	1 teaspoon	5 ml
Eggs	4 medium	180 g
Milk, evaporated	¼ cup	62 ml or 4 level teaspoon of powdered milk in ¼ cup of water
Mixed fruit (optional)	1 cup	100 g

### Method

1. Cream sugar and margarine until fluffy.
2. Beat eggs until light. and add to the cream
3. Add vanilla essence, mix.
4. Add baking powder to the flour and mix.
5. Fold the flour into the cream. When the mixture is becoming stiff, add milk.
6. Add mixed fruit if used.
7. Grease queen cake pans with oil or margarine, dust the greased pan with some flour and scoop batter to fill ¾ of the pan.
8. Bake in a moderately hot oven at 175 °C (350 °F) for 20–25 minutes or until lightly but evenly brown.

## Cassoy Rich Cake



### Ingredients

Cassava flour	2 cups	200 g
Soy flour	½ cup	53 g
Sugar	¼ cup	50 g
Margarine	½ cup	100 g
Baking powder	1 level teaspoon	5 g
Orange juice	3 tablespoons	45 ml
Orange rind	1 tablespoon	5 g
Cinnamon	1 level teaspoon	1.0 g
Eggs	2 small	52.6 g

### Method

1. Cream sugar and margarine until fluffy.
2. Add beaten egg.
3. Mix flour, baking powder, and cinnamon. Add to the batter.
4. Add orange juice and rind.
5. Mix lightly.
6. Grease queen cake pans with oil or margarine and fill ¾ full with the batter.
7. Bake in a preheated 175 °C (350 °F) oven until golden brown.

## Cassoy Scones



24

### Ingredients

Cassava flour, sifted	1½ cups	150 g
Soybean flour	½ cup	53 g
Vegetable oil	2 tablespoons	30 ml
Baking powder	1 level teaspoon	5 g
Egg	1 medium	45 g
Sugar	2 tablespoons	14 g
Salt	½ teaspoon	2.5 g
Milk/solution	½ cup	125 ml

### Method

1. Mix cassava flour, soy flour, vegetable oil, baking powder, sugar, and salt together.
2. Add egg and water to form soft dough.
3. Mix thoroughly.
4. Cut dough into desired sizes, make into molds, and arrange in greased pan(s).
5. Bake in a preheated oven at about 180 °C until golden brown.

## Cassava Strips



### Ingredients

Cassava flour	1 cup	100 g
Cowpea grains	1 cup	240 g
Cowpea paste	1 cup	225 g
Onion	1 large	90 g
Salt	2 teaspoons	10 g
Vegetable oil	3 cups	750 ml

### Method

1. Soak cowpea for about 5 minutes, dehull.
2. Grind dehulled cowpea and onions together into a smooth paste.
3. Take 1 cup of paste, add salt and cassava flour to form a soft, non-sticky dough.
4. Heat the oil. Push the mixture through a cake decorator or extruder into the oil.
5. Deep-fry until golden and crispy.
6. Serve for cocktails or as a snack.

## Cassava Cocktail Tidbits



### Ingredients

Cassava flour	1 cup	100 g
Cowpea flour	1 cup	100 g
Egg white	2	
Baking powder	1 teaspoon	5 g
Onion	1 small	30 g
Salt	2 teaspoons	10 g
Water	¼ cup	30 ml
Vegetable oil	3 cups	750 ml

### Method

1. Soak cowpea grains for about 5 minutes, dehull.
2. Dry the grain and mill finely into flour. Measure out 1 cup.
3. Grind onion and add to the cowpea flour. Add salt.
4. Beat egg white until light and add to the mixture.
5. Mix thoroughly, add cassava flour and baking powder.
5. Add water and mix to make stiff dough.
6. Roll out thinly on a floured board and cut into shapes or push dough through a cake decorator.
7. Deep-fry and serve with drink.

## Cassava Flour Doughnuts



### Ingredients

Cassava flour	2 cups	200 g
Sugar	¼ cup	50 g
Margarine	1 tablespoon	20 g
Baking powder	1 teaspoon	5 g
Egg	1 medium	45 g
Nutmeg, grated	½ teaspoon	1.5 g
Vegetable oil	3 cups	750 ml

### Method

1. Mix 1½ cups flour with sugar, margarine, baking powder, and nutmeg.
2. Boil ½ cup water and add the remaining ½ cup flour on the fire, remove from heat, and turn 3 times immediately.
3. Add the cooked cassava flour and break with finger tips until mixture resembles breadcrumbs.
4. Whisk egg until light, add to the mixture, and mix with finger tips into smooth dough that leaves the sides of the bowl clean. Do not knead.
5. Mold into doughnut shapes and deep-fry in hot oil until golden.
6. Drain and serve warm.

*Note: The doughnuts may also be baked. Before baking, brush with beaten egg to give a good crust.*

## Cassava Chinchin



### Ingredients

Cassava flour	4 cups	400 g
Sugar	½ cup	100 g
Margarine	2 tablespoons	40 g
Baking powder	2 teaspoons, leveled	10 g
Eggs	2 medium	90 g
Nutmeg	1 teaspoon	3 g
Water	1 cup	250 ml
Vegetable oil	3 cups	750 ml

### Method

1. Mix 3 cups of the flour with sugar, margarine, baking powder, and nutmeg.
2. Boil 1 cup of water, put 1 cup of flour into the boiling water and remove from heat, and turn 3 times immediately.
3. Add the cooked cassava flour and mix together with finger tips until mixture resembles breadcrumbs.
4. Whisk eggs until light, and add to the mixture. Mix with finger tips into smooth dough which leaves the sides of the bowl clean. Do not knead!
5. Roll evenly on a floured board.
6. Cut into desired shapes and size; length and thickness.
7. Deep-fry in oil until attractively brown.
8. Drain excess oil.

## Cassava Egg Rolls



### Ingredients

Cassava flour	4 cups	400 g
Sugar	½ cup	100 g
Margarine	2 tablespoons	40 g
Egg	2 medium	90 g
Baking powder	2 level teaspoons	10 g
Nutmeg	1 teaspoon	3.0 g
Salt	½ teaspoon	2.5 g
Boiled eggs	6 medium	
Water	1 cup	250 ml
Vegetable oil	3 cups	750 ml

### Method

1. Mix 3 cups of the flour with sugar, margarine, baking powder, and nutmeg.
2. Boil 1 cup of water, put 1 cup of flour into the boiling water and remove from heat, and turn 3 times immediately.
3. Add the cooked cassava flour and mix together with finger tips until mixture resembles breadcrumbs.
4. Whisk eggs until light, and add to the mixture. Mix with finger tips into smooth dough which leaves the sides of the bowl clean. Do not knead!
5. Cut dough into sizes big enough to wrap a whole boiled egg.
6. Mold dough smoothly to enclose a boiled egg and cover up.
7. Deep-fry until golden brown.



## Cassava Threads



30

### Ingredients

Cassava flour	3 cups	300 g
Soybean flour	½ cup	53 g
Curry powder	1 level teaspoon	1.25 g
Egg, whisked	1 small	26.3 g
Salt	2 level teaspoons	10 g
Water	½ cup	83 ml
Vegetable oil	3 cups	750 ml

### Method

1. Mix cassava and soybean flour together.
2. Add egg, salt, curry powder, and mix thoroughly.
3. Add water at intervals to form stiff dough.
4. Pass through an oiled dough press and cut into thread-like shape.
5. Deep-fry in hot oil until golden brown.

*Note: You can replace salt and curry powder with sugar (4 teaspoons of sugar).*

## Cassoy Fritters



### Ingredients

Cassava flour, sifted	3 cups	300 g
Soybean flour, sifted	½ cup	53 g
Baking powder	1 level teaspoon	5 g
Sugar	4 teaspoons	20 g
Salt	1 level teaspoon	5 g
Egg	1 medium	45 g
Water	¼ cup	62 ml
Vegetable oil	3 cups	750 ml

### Method

1. Mix cassava flour and soybean flour together.
2. Add sugar, baking powder, salt and mix.
3. Beat egg, add, and mix with fingertips.
4. Add water and mix to form dough.
5. Mix thoroughly until smooth.
6. Roll out on a floured board and cut into circular shapes of desired size.
7. Deep-fry in hot oil until golden brown.

## Cassey Fingers



### Ingredients

Cassava flour	1 cup	100 g
Soybean flour	1 cup	106 g
Onion, chopped	1 small	38.1 g
Tomato, skinned	1 small	20 g
Garlic, crushed	1 level teaspoon	2.8 g
Curry powder	1 level teaspoon	2.5 g
Egg, beaten	1 medium	45 g
Salt	1 level teaspoon	5 g
Pepper	1 level teaspoon	1.5 g
Vegetable oil	3 cups	750 ml

### Method

1. Add cassava flour and soybean flour together, mix.
2. Add all the other ingredients and mix thoroughly until smooth.
3. Shape into finger-like pieces.
4. Deep-fry until golden brown.

# Cassava Starch Production Process



1. Peel and wash freshly harvested cassava roots.



2. Grate or grind smoothly.



3. Mix with a lot of clean water (about 10 times the weight of the roots).

4. Filter through a fine mesh sieve or a muslin cloth.



5. Allow the filtrate to settle. Decant the supernatant within a day.

6. Wash off the starch residue several times with water to get white, odorless, and tasteless starch.

7. Put in a clean bag and press to dewater.



8. Break cake, spread thinly on a tray, and sun dry.

9. Finely mill the dried starch granules and sift if necessary.



10. Package in airtight containers.



## Cassava Starch Bread Buns



### Ingredients

Cassava starch	½ cup	100 g
Margarine or vegetable oil	2½ tablespoons	50 g
Water	½ cup	125 ml
Salt	¼ teaspoon	1.25 g
Egg, whisked	1 medium	45 g

### Method

1. Melt the margarine in a saucepan or heat the vegetable oil (if used).
2. Add water and salt and allow boiling until an emulsion is formed.
3. Pour the hot emulsion into the cassava starch and stir at low speed.
4. Add the whisked egg and continue mixing at high speed until a uniform viscous dough is obtained.
5. Divide the dough into round balls of desired size using greased palms.
6. Bake at 200 °C for 20 minutes.

## Cassava Flakes (Crackers)



### Ingredients

Cassava starch	1 cup	200 g
Water	4½ cups	1125 ml
Salt	1 teaspoon	5 g
Seasoning (chicken, fish, or onion)	1 teaspoon	5 g
Vegetable oil	1 cup	250 ml

### Method

1. Dissolve starch in water.
2. Add desired seasoning and salt.
3. Put on medium heat, stirring continuously until thick to avoid lumps.
4. Drop teaspoonful on a line tray and dry at 50–55 °C in a drying oven or in the sun.
5. Deep-fry in hot oil for about 2 seconds.
6. Drain, and serve as a snack.



## Ingredients

Cassava starch	1 cup	200 g
Coconut	¼ cup	50 g
Sugar	¼ cup	50 g
Salt	½ teaspoon	2.5 g
Spices (nutmeg, cinnamon optional)	½ teaspoon	1.25 g
Water	½ cup	125 ml

## Method

1. Mix cassava starch, grated coconut, sugar, salt, and spices (if used) thoroughly.
2. Add water to make a smooth paste that can be dropped by spoonfuls.
3. Spread drops on greased baking tray(s) with a fork to a flat shape.
4. Bake in hot oven at 180–250 °C for about 5 minutes, reduce the heat and bake for another 10 minutes.
5. When nearly baked, remove and cut into desired shapes, and bake until golden brown.
6. Remove from oven and allow to cool.

## Cassava Salad Cream



### Ingredients

Cassava starch	16 level tablespoons	154 g
Mustard	2 heaped teaspoons	20 g
Sugar	6 level tablespoons	90 g
Salt	8 level teaspoons	36 g
Vinegar	1½ cups	375 ml
Water	5½ cups	1375 ml
Corn or sunflower oil	2½ cups	625 ml
Egg yolks	2	25 g

### Method

1. Weigh starch, mustard, sugar, salt, vinegar, and water in a pot. Mix thoroughly.
2. Cook until thick, stirring continuously.
3. Cool to refrigeration temperature.
4. Pour mixture into a mixer and mix for 1 minute.
5. Add the egg yolk and mix for another 1 minute.
6. Gently pour oil into the mixture while mixing at medium speed for 2 minutes.
7. Continue mixing further for 5 minutes at high speed.
8. Pour into a clean jar, cover tightly, and store in refrigerator.



# Tapioca Production Process

1. Remove fresh cassava starch cake from sedimentation container.



2. Spread thinly over a clean surface, use fingers to break up the cake into granules.

3. Put the semi-dried starch granules into earthenware pot or a heavy griddle pan and roast over a slow fire stirring constantly to avoid uneven cooking or burning.
4. Stir until tapioca is dry (grains should increase in size during this process, with some popping sound).



5. Remove tapioca from pot and spread out to cool.

6. Sift to sort the granules by size.



## Tapioca Granules Or Pearls



### Tapioca Gruel (*Megau*) Preparation for Consumption

#### Ingredients

Tapioca granules or pearls	2 cups	210 g
Coconut milk or water	6 cups	1500 ml
Sugar	¼ cup	50 g
Flavorings (optional)	1 teaspoon	5 ml

#### Method

1. Soak tapioca in water for 1–2 hours or overnight.
2. Bring coconut milk or water (if used) to boil.
3. Add the soaked tapioca and flavor of choice.
4. Cook for 10–15 minutes, stirring occasionally until it gelatinizes and becomes more transparent.
5. Add sugar to taste.
6. Add milk (evaporated or milk solution) and serve hot.

## Cassava Leaves



40



*Note: The consistency of the cassava leaves preparation is a matter of choice. It may be dry, i.e., very little water, with oil seeping out of the vegetable as preferred in the Democratic Republic of the Congo or very wet, with vegetable suspended in a water-in-oil emulsion as preferred in Sierra Leone.*

# Cassava Leaves Soup



## Ingredients

Cassava leaves, fresh	1 kg	
Palm oil	$\frac{3}{4}$ cup	150 ml
Groundnut, paste to taste		
Salt to taste		
Pepper to taste		
Water	$4\frac{1}{6}$ cups	1 liter

## Optional

Fish, smoked, salted	To taste	
Onions	2	60 g
Leek	2 stalks	

## Method

1. Select young and tender cassava leaves.
2. Remove leaves from stalk.
3. Wash in cold water.
4. Pound in a mortar until all the leaves are broken into tiny pieces.
5. Put pounded leaves into a pot and add 1 liter of potable water. Cook for 15–30 minutes from the time it starts to boil.
6. Sauté the onions, add to the cassava leaves with salt, pepper, fish, leek, and groundnut paste, if used.
7. \*Put palm oil or peanut butter if preferred.
8. Cover pot and continue to cook for another 15 minutes.
9. Serve with rice, *fufu*, *eba*, or pounded yam.

\* Alternatively, the cooked cassava leaves at this stage could be added to tomato stew being prepared and the cooking completed in 15 minutes.

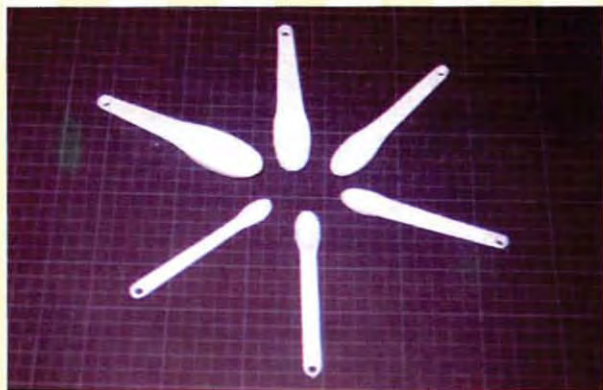
## Nutrient profile of new food products from cassava

Product	% Moisture	% Protein	% Ash	% Fat	%CHO	Energy kcal/100 g
Cookies	1.8	0.5	2.6	21.1	74.0	488
Cake	15.1	3.2	2.5	28.2	51.0	470.6
Chin-Chin	3.4	1.2	2.0	25.8	67.6	507.4
Strips	4.2	6.1	2.2	26.6	60.9	507.4
Doughnut	6.9	2.3	1.5	9.9	72.2	387.1
Cassava Bread (100%)	15.3	2.8	1.5	5.1	75.3	358.4
Cassava Bread (20%)	14.9	6.0	1.6	4.8	72.7	358.0
Cassava Bread (10%)	14.6	6.2	1.7	5.0	72.5	359.0
Meat pie	9.4	7.8	1.5	14.3	67.0	428.0
Starch buns	7.5	2.2	1.4	25.1	63.8	489.9
Croquettes	9.6	3.3	1.3	22.6	63.2	469.4
Flakes	6.8	0.5	1.2	24.5	67.0	490.5

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## Appendix: Volume, Weight, and Measure



### Standard volume and weight of spoon

Measuring teaspoon	Volume (ml)	Weight of sugar/margarine/ salt/yeast (g)
1 tablespoon	15	20
½ tablespoon	10	10
1 teaspoon	5	5
½ teaspoon	2.5	2.5
¼ teaspoon	1.2	1.2
⅛ cup	0.6	0.6



### Standard weights of ingredients

Measuring cup	Volume (ml)	Weight of cassava flour (g)	Weight of wheat flour (g)	Weight of sugar (g)	Weight of margarine (g)
1 cup	250	100	120	200	200
½ cup	125	50	60	100	100
⅓ cup	83	35	40	60	60
¼ cup	62	20	30	50	50
⅛ cup	31	15	20	25	25



## About IITA

The International Institute of Tropical Agriculture (IITA, [www.iita.org](http://www.iita.org)) is an Africa-based international research-for-development organization, established in 1967, and governed by a board of trustees. Our vision is to be Africa's leading research partner in finding solutions for hunger and poverty. We have more than 100 international scientists based in various IITA stations across Africa. This network of scientists is dedicated to the development of technologies that reduce producer and consumer risk, increase local production, and generate wealth. We are supported primarily by the Consultative Group for International Agricultural Research (CGIAR, [www.cgiar.org](http://www.cgiar.org)).



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