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NEW RECIPES FOR ENHANCED BAMBARA UTILIZATION  
IN GHANA

WITH NUTRITION INFORMATION

Submitted under the DFID/CPHP/FRI Bambara Processing and  
Utilization Project

BY

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## INTRODUCTION

Bambara groundnut (*Vigna subterranean*) is an important source of protein, and is complementary to staple cereals, which are low in certain essential amino acids. It also has significant levels of calcium and phosphorus. It was ranked the second most important grain legume in Ghana after cowpea. For many years in Ghana, production and utilization was slightly ahead of cowpea, but the introduction of high yielding varieties of cowpea and improved methods for controlling cowpea field pests led to the neglect of bambara. The cooking properties of bambara is an important factor which has led to a decline in its utilization, especially in the urban centres of Ghana. Observations indicate that the water absorption capacity of bambara is very poor as compared to cowpea, and the thick testa could be responsible for this. This results in long cooking periods and the effort and time required to cook and process bambara, in addition to the large quantities of water and especially, fuel needed cannot be afforded by many homemakers.

The need for the development of appropriate bambara processing technologies to address the problems with utilization and consequent decline in production was first identified under CPHP project R6503 by farmers in northern Ghana who attributed the decline in production of the crop to lack of processing technologies capable of removing the drudgery involved in its utilization. Subsequently, appropriate technologies were developed under CPHP project R7581 and these were assessed at a stakeholders' workshop in February 2002 where the urgent need was identified for extensive and effective promotion of the bambara flour technology as the most effective means to enhance bambara utilization and stimulate resurgence in its cultivation for improved livelihood.

Under a new coalition partnership arrangement for the dissemination of the bambara flour production technology in northern Ghana, it was considered very necessary to expand the utilization base of the product through the development of more end uses. As a first step, eleven existing traditional bambara flour recipes were standardized, the quality evaluated and documented with nutrition information. Subsequently, twenty-one new recipes were developed and tested based on the high quality bambara flour (HQBF) to help enhance the

utilization of bambara in Ghana for improved nutrition and livelihood of rural farmers. This report documents the new recipes for the HQBF, with adequate nutrition information on each recipe.

## **GLOSSARY OF TERMS**

1. Ampesi                      Boiled cassava, yam, plantain or cocoyam. This is a staple food eaten with stew or gravy in many Ghanaian homes.
2. Banku                      Cooked paste of fermented maize dough. It may be a mixture of maize dough and cassava dough. It is a popular food in the southern sector of the country.
3. Kokonte                    Flour made from dried cassava chips
4. Kontomire                Cocoyam leaves used for the preparation of stew
5. Koose/Akara              Deep fried seasoned bean paste
6. Kakro                      Deep fried seasoned mashed ripe plantain
7. Moin-moin                Steamed seasoned bean paste
8. Tuo zaafi                  Cooked paste of maize flour and cassava flour. A popular food in the northern sector of the country

## **COOKERY TERMS**

### **TECHNIQUES OF MIXING**

- Beat -                      To mix with an over and over motion using a spoon, rotary beater or electric mixer.
- Blend -                    To combine thoroughly two or more ingredients
- Cream -                    To blend until smooth and light using a wooden spoon or an electric mixer
- Mix -                      To combine two or more ingredients usually by stirring
- Stir -                      To mix ingredients in a circular motion.

### **TERMS OF CUTTING**

- Chop - To cut into small pieces
- Cube - To cut into small squares
- Dice - To cut into very small pieces

### **OVEN TEMPERATURES AND REGULATING NUMBERS**

DESCRIPTION	TEMPERATURE		GAS NO.
	<sup>0</sup> C	<sup>0</sup> F	
Very slow/cool	100 – 120	Under 250	¼ - ½
Low	130 – 140	250 – 275	½ - 1
Moderately low	150 – 170	300 – 325	2 – 3
Moderate	170 – 180	325 – 350	3 – 4
Moderately hot	190 – 200	375 – 400	5 – 6
Hot	220 – 230	425 – 450	7 – 8
Very Hot	240 – 250	475 – 500	9

## HIGH QUALITY BAMBARA FLOUR (HQBF) RECIPES

### 1. BREAD ROLLS

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200 g	2 cups
HQBF	60 g	¼ cup
Sugar	120 g	½ cup
Margarine	120 g	¼ cup
Diluted milk	125 g	½ cup
Yeast (Instant)	15 g	1 tablespoon
Salt	2.5 g	½ teaspoon
Nutmeg	to taste	to taste

### Method

1. Sift flour, add salt, sugar, HQBF, yeast and nutmeg together.
2. Warm milk, add margarine
3. Pour into flour mixture and mix to form a firm dough
4. Knead on floured board, cut into pieces and make rolls
5. Put in a warm place and allow to rise (1 – 1½ hr)
6. Bake at moderate temperature in a preheated oven until golden brown.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal).....	1506.0	376.50
Protein (g) .....	43.8	10.95
Calcium (mg) .....	783.0	195.80
Iron (mg) .....	14.9	3.7
Vitamin A (µg) .....	383.0	95.8
Thiamin (mg) .....	1.33	0.45
Riboflavin (mg) .....	0.88	0.22
Niacin (mg) .....	13.5	3.38

## 2. COOKIES

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat Flour	200g	2 cups
HQBF	60g	¼ cup
Sugar	120g	½ cup
Margarine	120g	½ cup
Egg	60g	1
Baking Powder	10g	2 teaspoon
Vanilla Essence	few drops	few drops

### Method

1. Cream margarine, sugar and then egg together until light and fluffy. Add vanilla.
2. Sift flour, add baking powder and HQBF and mix well.
3. Add flour mixture to cream mixture and mix well to form a soft dough
4. Spoon onto greased baking sheet and bake at moderate temperature until golden brown.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	2,298	574.5
Protein (g) ...	51.7	12.93
Calcium (mg) ...	823	205.8
Iron (mg) ...	15.8	3.95
Vitamin A (µg) ..	1307	326.8
Thiamin (mg) ...	1.37	0.34
Riboflavin (mg) ...	1.22	0.31
Niacin (mg) ...	13.6	3.40

### 3. CAKE

INGREDIENT	QUANTITY	HANDY MEASURE
Cake flour	300g	3 cups
HQBF	60g	¼ cups
Sugar	240g	1 cup
Margarine	240g	1 cup
Egg	240g	4
Diluted milk	225 ml	¾ cup
Baking powder	17.5g	3 ½ teaspoon
Salt	to taste	to taste
Vanilla	5 ml	1 teaspoon

#### Method

1. Cream sugar and margarine together until light and fluffy
2. Beat egg and add a little at a time to the creamed mixture, and blend well
3. Sift flour, add HQBF and baking powder
4. Fold in flour mixture by alternating with diluted milk
5. Grease cake pans and scoop in the mixture
6. Bake at moderate temperature till golden brown
7. Cool cakes in pan and then turn onto cooling rack.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	4275	534.4
Protein (g) ...	91	15.2
Calcium (mg) ...	1560	375.0
Iron (mg) ...	23.2	5.8
Vitamin A (µg) ..	2866	716.5
Thiamin (mg) ...	1.97	0.49
Riboflavin (mg) ...	2.52	0.63
Niacin (mg) ...	20.2	5.05

#### 4. MUFFINS

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Sugar	120g	½ cup
Diluted milk	225 ml	¾ cup
Egg	60g	1
Cooking oil	100 ml	⅓ cup
Baking soda	3.5g	¼ teaspoon
Baking powder	15g	3 teaspoon
Salt	to taste	to taste
Vanilla	5 ml	1 teaspoon

#### Method

1. Sift flour, add HQBF, sugar, salt, baking powder and soda. Mix well.
2. Beat egg, add milk, oil, vanilla and mix well.
3. Pour liquid mixture into flour mixture and mix.
4. Scoop into muffin pans and bake at moderate temperature till golden brown.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	2404	601
Protein (g) ...	58.7	14.7
Calcium (mg) ...	1372	343.0
Iron (mg) ...	16.5	4.1
Vitamin A (µg) ..	188	47.0
Thiamin (mg) ...	1.45	0.36
Riboflavin (mg) ...	1.57	0.39
Niacin (mg) ...	13.8	3.45



## 5. DOUGHNUTS

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Sugar	120g	½ cup
Diluted milk	225 ml	¾ cup
Egg	60g	1
Baking powder	10g	2 teaspoon
Cooking oil	30 ml	2 Tablespoon
Salt	to taste	to taste
Vanilla	5 ml	1 teaspoon
Oil or frying	for frying	for frying

### Method

1. Sift flour, add HQBF, sugar, salt, baking powder and mix well.
2. Beat egg, add milk, oil and vanilla and mix well.
3. Pour liquid mixture into flour mixture and mix well.
4. Scoop teaspoonfuls into hot oil and deep fry till golden brown
5. Drain and serve.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	2076	519
Protein (g) ...	58.7	14.7
Calcium (mg) ...	1078	269.5
Iron (mg) ...	15.9	3.98
Vitamin A (µg) ..	188	47.0
Thiamin (mg) ...	1.45	0.36
Riboflavin (mg) ...	1.57	0.39
Niacin (mg) ...	13.8	3.45

## 6. PASTRY PIE

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Margarine	120g	½ cup
Cold water	150 ml	½ cup
Salt	2.5g	½ teaspoon
Filling		
Corned beef	120g	½ cup
Onions	30g	1 small

### Method

1. Sift flour, add HQBF and rub in margarine.
2. Sprinkle cold water, a little at a time, and gather to form a firm dough. Knead until firm.
3. Cut onions and add to corned beef.
4. Roll out dough, cut into rounds or squares and put in filling
5. Brush edge of pastry with water, turn other edge over filling and seal with a fork.
6. Brush top with milk or egg and bake in a moderately hot oven for 15 – 20 minutes

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1825	456.3
Protein (g) ...	52.7	13.2
Calcium (mg) ...	215	53.8
Iron (mg) ...	14.5	3.6
Vitamin A (µg) ..	1193	298.3
Thiamin (mg) ...	1.36	0.34
Riboflavin (mg) ...	0.94	0.24
Niacin (mg) ...	14.3	3.58

## 7. SCONES

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Margarine	240g	1 cup
Diluted milk	250 ml	1 cup
Sugar	120g	½ cup
Egg	120g	2 large
Baking powder	45g	3 teaspoon
Salt	to taste	to taste

### Method

1. Sift flour, add baking powder and salt.
2. Rub in margarine, add sugar and mix well.
3. Beat egg and blend in milk.
4. Add to mixture and mix to form a soft dough
5. Turn onto a floured board and knead lightly
6. Roll out dough and cut with floured cutters
7. Bake on a greased try in a hot oven for 15 – 20 minutes

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	340.2	850.5
Protein (g) ...	68.2	17.0
Calcium (mg) ...	1475	369
Iron (mg) ...	17.2	4.3
Vitamin A (µg) ..	2693	673
Thiamin (mg) ...	1.52	0.38
Riboflavin (mg) ...	1.97	0.49
Niacin (mg) ...	13.7	3.43

## 8. BOFOROT

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Sugar	60g	¼ cup
Yeast (instant)	15g	1 Tablespoon
Water	250 ml	1 cup
Salt	2.5g	½ teaspoon
Oil for frying	for frying	for frying

### Method

1. Sift dry ingredients together and add yeast
2. Add water and beat until mixture is sticky
3. Cover with damp cloth and allow to rise
4. Heat oil and deep fry a little at a time
5. Drain and serve

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1427	356.8
Protein (g) ...	49.3	12.3
Calcium (mg) ...	197	49.3
Iron (mg) ...	16.3	4.1
Vitamin A (µg) ..	1.21	0.30
Thiamin (mg) ...	1.68	0.42
Riboflavin (mg) ...	1.70	0.43
Niacin (mg) ...	19.5	4.88

## 9. BREAD

INGREDIENT	QUANTITY	HANDY MEASURE
Wheat flour	200g	2 cups
HQBF	60g	¼ cup
Sugar	60g	¼ cup
Yeast	15g	1 Tablespoon
Cooking oil	30 ml	2 Tablespoon
Water Salt	375 ml	1¼ cup
Nutmeg	2.5g	½ teaspoon
	2.5g	½ teaspoon

### Method

1. Dissolve half teaspoon of sugar in 3 teaspoon of lukewarm water and sprinkle in the yeast
2. To the rest of water, add sugar, salt, cooking oil and then the activated yeast
3. Add HQBF, sifted flour and nutmeg to the mixture and mix to form a firm dough
4. Turn onto floured work surface and knead until smooth and shiny
5. Allow to rise in a warm area until double in size (1 – 1½ hours)
6. Punch dough down gently, cut into desired sizes and shape into loaves
7. Put loaves into greased pans and allow to rise almost double in size (30 – 45 minutes)
8. Bake in a hot oven until lightly browned

\*if instant yeast is used, add directly to flour

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1421	355.3
Protein (g) ...	51.3	12.8
Calcium (mg) ...	206	51.5
Iron (mg) ...	17.2	4.3
Vitamin A (µg) ..	1.22	0.31
Thiamin (mg) ...	1.80	0.45
Riboflavin (mg) ...	1.97	0.49
Niacin (mg) ...	21.5	5.38

## 10. SWEETBAD

INGREDIENT	QUANTITY	HANDY MEASURE
Wheatflour	200g	2 cups
HQBF	60g	¼ cup
Sugar	15g	1 Tablespoon
Margarine (melted)	30 ml	2 Tablespoon
Baking Powder	10g	2 teaspoon
Grated nutmeg	3g	½ teaspoon
Water	225 ml	¾ cup
Salt	3g	½ teaspoon
Vegetable oil	for frying	for frying

### Method

1. Sift and measure wheatflour into a bowl, add HQBF, then baking powder, nutmeg, salt and mix well.
2. Add melted margarine and then water to dry ingredients and mix just enough for the dry ingredients to be moistened
3. Deep-fry in spoonfuls, a few balls at a time until golden brown
4. Drain and serve

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1506	376.5
Protein (g) ...	43.8	10.95
Calcium (mg) ...	783	198.5
Iron (mg) ...	14.9	3.7
Vitamin A (µg) ..	383	95.8
Thiamin (mg) ...	1.33	0.33
Riboflavin (mg) ...	0.88	0.22
Niacin (mg) ...	13.5	0.38

## 11. BAMBARA KONTOMIRE STEW

INGREDIENT	QUANTITY	HANDY MEASURE
Kontomire	100g	5 – 6 medium
HQBF paste	100g	½ cup
Smoked fish	50g	1 medium
Palm oil	150 ml	½ cup
Tomato	120g	2 – 3 medium
Onion	60g	1 medium
Pepper	To taste	To taste
Seasonings	To taste	To taste

### Method

1. Slice onion, grind tomatoes and pepper
2. Wash and debone fish, break into small pieces. Wash and shred kotomire (may also be cooked and mashed, if desired)
3. Heat the palm oil and fry onions, tomatoes and pepper. Add the fish and cook for 3 – 5 minutes
4. Mix HQBF with a little water to make a paste. Add to the gravy and cook for 5 – 7 minutes
5. Add the shredded (or mashed) kontomire and allow to simmer for 15 – 20 minutes. Season to taste
6. Serve with ampesi, keneky or boiled rice.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1042	260.5
Protein (g) ...	46.0	11.5
Calcium (mg) ...	264.0	66.0
Iron (mg) ...	12.4	3.1
Vitamin A (µg) ..	4760	1190
Thiamin (mg) ...	0.84	0.21
Riboflavin (mg) ...	0.88	0.22
Niacin (mg) ...	3.54	0.89

## 12. BAMBARA GARDEN EGGS STEW

INGREDIENT	QUANTITY	HANDY MEASURE
Garden Eggs	230	4 – 5 medium
HQBF paste	100g	½ cup
Smoked/tinned fish	50g	1 medium/½ tin
Cooking oil	150 ml	½ cup
Tomato	120g	2 – 3 medium
Onion	60g	1 medium
Pepper	To taste	To taste
Seasoning	To taste	To taste

### Method

1. Slice onion, grind tomatoes and pepper
2. Chop garden eggs and cook till soft
3. Debone fish and break into small pieces
4. Heat oil, fry onion and add ground tomatoes and pepper. Cook for 3 – 5 minutes and add fish
5. Stir HQBF paste into the stew and allow to cook for 5 minutes
6. Add cooked garden eggs and allow to simmer for 15 – 20 minutes in a partially covered pan.
7. Season to taste and serve with ampesi, kenkey, banku or boiled rice.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1870	467.5
Protein (g) ...	45.9	11.5
Calcium (mg) ...	249	62.3
Iron (mg) ...	12.3	3.1
Vitamin A (µg) ..	90.5	22.6
Thiamin (mg) ...	0.96	0.24
Riboflavin (mg) ...	0.98	0.25
Niacin (mg) ...	4.6	1.15



### 13. BAMBARA GRAVY

INGREDIENT	QUANTITY	HANDY MEASURE
HQBF (paste)	100g	½ cup
Tomatoes (fresh)	240g	4 medium
Tomato (tin)	15g	1 Tablespoon
Onion	60g	1 medium
Cooking oil	150 ml	½ cup
Pepper	To taste	To taste
Salt/Seasoning	To taste	To taste

#### Method

1. Slice onion, grind tomatoes and pepper
2. Heat oil and fry onion. Add tomato paste and cook for 3 minutes. Add ground fresh tomato and pepper. Cook for 5 minutes
3. Add a little water to HQBF to prepare a smooth paste and stir into frying ingredients. Simmer for 15 – 20 minutes
4. Season to taste and serve with kenkey, banku, ampesi or boiled rice.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1756	439.0
Protein (g) ...	29.1	7.3
Calcium (mg) ...	212	53.0
Iron (mg) ...	10.8	2.7
Vitamin A (µg) ..	151	37.8
Thiamin (mg) ...	0.87	0.22
Riboflavin (mg) ...	0.83	0.21
Niacin (mg) ...	2.92	0.73

#### 14. BAMBARA STEW

INGREDIENT	QUANTITY	HANDY MEASURE
Meat	100g	4 pieces
HQBF (paste)	100g	½ cup
Tomato (fresh)	240g	4 medium
Tomato (tin)	15g	1 Tablespoon
Onion	60g	1 medium
Cooking Oil	150 ml	½ cup
Pepper	To taste	To taste
Salt/Seasoning	To taste	To taste

#### Method

1. Prepare and cut meat into bite pieces. Season with salt and cook for 15 minutes
2. Fry the cooked meat in hot oil, remove and put aside
3. Slice onion, grind pepper and tomatoes
4. Fry onion in hot oil, add tomato paste and cook for 2 – 3 minutes. Add ground fresh tomatoes and pepper and meat and cook for 5 minutes.
5. Mix the stock with HQBF to make a paste and add to stew. Cook for 20 – 30 minutes and season to taste
6. Serve with rice, ampesi, kenkey or banku.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1894	473.5
Protein (g) ...	60.6	15.2
Calcium (mg) ...	230	57.5
Iron (mg) ...	12.6	3.2
Vitamin A (µg) ..	151	37.8
Thiamin (mg) ...	0.96	0.24
Riboflavin (mg) ...	1.02	0.26
Niacin (mg) ...	5.50	1.38

### 15. MIXED VEGETABLE STEW

INGREDIENT	QUANTITY	HANDY MEASURE
Cabbage (chopped and cooked)	100g	½ cup
Cauliflower (chopped and cooked)	100g	½ cup
Carrots (chopped and cooked)	100g	½ cup
HQBF (paste)	100g	½ cup
Vegetable oil	150 ml	½ cup
Tomato (fresh)	240g	4 medium
Tuna (Tinned)	50g	½ tin
Onion	60g	1 medium
Pepper	To taste	To taste
Seasonings	To taste	To taste

#### Method

1. Slice onion, blend pepper and tomatoes.
2. Heat oil and fry onion. Add pureed pepper and tomatoes and cook for 5 minutes
3. Stir in HQBF paste and cook for 5 minutes
4. Add tuna, and then cooked vegetables and simmer for 15 – 20 minutes
5. Season to taste and serve with ampesi, rice and kenkey

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	1981	495.3
Protein (g) ...	64.5	16.1
Calcium (mg) ...	304	76.0
Iron (mg) ...	13.6	3.4
Vitamin A (µg) ..	2979	744.8
Thiamin (mg) ...	1.16	0.29
Riboflavin (mg) ...	1.19	0.30
Niacin (mg) ...	7.11	1.78

## 16. BAMBARA VEGETABLE SOUP

INGREDIENT	QUANTITY	HANDY MEASURE
HQBF	100g	½ cup
Smoked fish	100g	2 medium size
Meat	100g	4 small pieces
Green leaves (chopped)	50g	1 cup
Garden eggs	180g	3 medium size
Tomato (fresh)	120g	2 – 3 medium size
Tomato (tinned)	15g	1 Tablespoon
Onion	60g	1 medium
Pepper	To taste	To taste
Salt/Seasonings	To taste	To taste

### Method

1. Wash and cut meat into bite pieces, season with ground onion, tomatoes and salt. Cook for 10 – 15 minutes.
2. Meanwhile, wash and cook garden eggs and pepper, blend and strain
3. Add enough water to the soup on fire and cook for 5 minutes
4. Mix HQBF with a little water to make a paste and add to the soup. Cook for 5 minutes
5. Add strained garden eggs and green leaves and allow to cook at low heat
6. wash and debone fish, add to soup at low heat and cook for 35 – 40 minutes
7. Season to taste and serve with fufu, banku, Tuo zaafi or kokonte

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	765	191.3
Protein (g) ...	81.6	20.4
Calcium (mg) ...	291	72.8
Iron (mg) ...	17.4	4.4
Vitamin A (µg) ..	267	66.8
Thiamin (mg) ...	1.18	0.30
Riboflavin (mg) ...	1.47	0.37
Niacin (mg) ...	11.1	2.78

### 17. BAMBARA KAKRO

INGREDIENT	QUANTITY	HANDY MEASURE
Plantain (very ripe)	400g	3 fingers (medium)
HQBF	60g	½ cup
Ginger	30g	1 small
Onion	60g	1 medium
Salt	To taste	To taste
Oil	Enough for frying	Enough for frying

#### Method

1. Peel ripe plantain and mash or pound in a mortar
2. Clean ginger and onions and grind. Add salt to taste
3. Add to the mashed pounded plantain and mix well
4. Add HQBF and mix well
5. Mould into small size balls and deep fry until golden brown
6. serve with beans stew or as a snack

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	733	183.3
Protein (g) ...	12.2	3.1
Calcium (mg) ...	67.0	16.8
Iron (mg) ...	6.0	1.5
Vitamin A (µg) ..	20.2	5.10
Thiamin (mg) ...	0.70	0.20
Riboflavin (mg) ...	0.21	0.05
Niacin (mg) ...	3.70	0.93

**18. BAMBARA MOIN - MOIN**

INGREDIENT	QUANTITY	HANDY MEASURE
HQBF	240g	2 cups
Tuna flakes	100g	1 tin
Tomato (tinned)	30g	2 Tablespoon
Onion	60g	1 medium
Pepper (powdered)	5g	1 teaspoon
Oil	75 ml	¼ cup
Salt	2.5g	½ teaspoon
Leaves (for wrapping)	For wrapping	For wrapping

**Method**

1. Mix HQBF with water to make a paste and beat until light and fluffy
2. Add pepper, ground onion, tomato paste, oil, salt and tuna flakes and mix all together. The consistency should be a little runny
3. Scoop a ladle full of the mixture onto clean leaves and wrap carefully
4. Arrange in a steamer and steam over boiling water for 1 – 1 ½ hours
5. Remove leaves and serve

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	743	185.5
Protein (g) ...	34.7	8.7
Calcium (mg) ...	280	70.0
Iron (mg) ...	8.23	2.1
Vitamin A (µg) ..	265	66.3
Thiamin (mg) ...	1.29	0.32
Riboflavin (mg) ...	0.34	0.17
Niacin (mg) ...	11.9	2.98

## 19. BAMBARA KOKONTE

INGREDIENT	QUANTITY	HANDY MEASURE
HQBF	120g	½ cup
Cassava flour	200g	2 cups
Water	600 ml	2 cups

### Method

1. Boil water in a pot or pan, take ½ cup of the boiling water and put aside.
2. Mix cassava flour and HQBF and add to the boiling water, stirring briskly to prevent lump formation.
3. Add the rest of the hot water in small quantities and continue stirring until the desired consistency is obtained
4. Scoop into a bowl and shape
5. Serve with Palmtree soup, okro soup or groundnut soup.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	862	215.5
Protein (g) ...	21.8	5.5
Calcium (mg) ...	41.6	10.4
Iron (mg) ...	6.0	1.5
Vitamin A (µg) ..	-	-
Thiamin (mg) ...	1.09	0.27
Riboflavin (mg) ...	0.26	0.07
Niacin (mg) ...	5.47	1.37

**20. BAMBARA TUO ZARFI**

INGREDIENT	QUANTITY	HANDY MEASURE
Polished corn flour	50g	½ cup
HQBF	240g	1 cup
Water	600 ml	2 cups

**Method**

1. Mix HQBF with water, bring to boil and allow to cook for 5 – 10 minutes while stirring
2. Add corn flour bit by bit and stir gradually until cooked and smooth
3. Dish out in serving bowls and allow to cool
4. Serve with okro soup or groundnut soup

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal).....	321	160.5
Protein (g) .....	11.4	2.9
Calcium (mg) .....	31.1	7.8
Iron (mg) .....	2.4	0.6
Vitamin A (µg) .....	-	-
Thiamin (mg) .....	0.72	0.18
Riboflavin (mg) .....	0.14	0.04
Niacin (mg) .....	2.63	0.66



## 21. BAMBARA BANKU

INGREDIENT	QUANTITY	HANDY MEASURE
Fermented maize dough	200g	2 cups
Fermented cassava dough	200g	1 cup
HQBF	120g	½ cup
Water	600 ml	2 cups
Salt	To taste	To taste

### Method

1. Mix corn dough, cassava dough and HQBF together with water to a smooth thick paste.
2. Add salt to taste and stir on fire with a wooden spoon or “banku stick.”
3. Continue stirring and kneading until a cooked stiff but smooth paste is obtained. Water may be added when necessary to achieve the desired consistency.
4. Mold into small fist size balls and serve with soup or stew.

APPROXIMATE NUTRITION INFORMATION		
Component	Total	Per 100g
Calories (kcal)...	900	245.1
Protein (g) ...	28.3	7.1
Calcium (mg) ...	180	45.1
Iron (mg) ...	10.4	2.6
Vitamin A (µg) ..	-	-
Thiamin (mg) ...	0.80	0.20
Riboflavin (mg) ...	0.22	0.06
Niacin (mg) ...	4.08	1.02