



NUTRITION LABORATORY
COOKBOOK: TRADITIONAL
CAMBODIAN RECIPES



PART 1

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Published in February 2025

Acknowledgements

Creating the *Nutrition Laboratory Cookbook: Traditional Cambodian Recipes* has been an incredible journey and a truly enriching experience. This project would not have been possible without the unwavering support of many people.

To the **School of Public Health** at the **NIPH**: Thank you for giving us the opportunity to work at the Nutrition Laboratory, providing the foundation for this project.

To our **Professors**: Your guidance inspired the initial idea for this cookbook, and your encouragement sustained us through its completion. Special thanks to Prof. Chhea Chhorvann, Prof. Heng Sopheab, and Ms. Oy Sreymom for approving and championing this project. Your invaluable advice and support throughout the entire process are appreciated.

To our **Volunteer Team Members**: This accomplishment happens because of your generous support during every cooking session. Our deepest gratitude goes to Dr. Thorng Sovatthey, Ph. Sok Sambath, Ph. Kang Liching, and Dr. Vadhana Cheata for your commitment and dedication.

To our **Technical Support Team**: Ms. Phok Nisatya and Ms. Vann Monypov, we thank you for your valuable assistance in capturing photos during every cooking session and for your expertise in food design and posters.

Finally, to our **Readers**, especially Dr. TE Vannarath, SPH Management Team, Dr. Sar Kanha, Nutrition Lecturer, and Mrs. Long Sereyreaksmey, Lecturer. We thank you for choosing to read this cookbook. We hope it provides you all with both knowledge and inspiration to explore the rich flavors of traditional Cambodian cuisine.

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Introduction

Nutrition Laboratory Cookbook: Traditional Cambodian Recipes is a book developed by the Nutrition Laboratory Team. Its main purpose is to find and analyze the energy and nutrient content of Cambodian food using scientifically based methods and finally share our findings with general audiences.

Prior to this creation, there was always an idea to see nutrition information on Cambodian foods or Khmer foods readily available to everyone and everywhere, from the common population to researchers and from books to restaurant menus. With this motivation, we have given the opportunity to turn the idea into an initiative and then transform it into this book.

Throughout our journey in 2024, we have chosen four Cambodian foods and one dessert as our first step for this project. We started cooking with the ingredients we bought following food recipes from the NHUM, a Cambodian Recipe Book, 2019. We weighed each ingredient for accurate measurement. Afterwards, we analyzed our data in Nutri-Survey (2004) and INMUCAL-Nutrients ver.4.0 software to generate nutritional values. The results were then posted on the social media at the School of Public Health of the National Institute of Public Health. This book documents our process in detail from the beginning to the end.

Finally, we hope this book will pave the way for similar nutrition projects and generate greater information for the Cambodian people. As for our team's future plan, we are committed to developing more nutrition-related work in 2025 and in years to come. For now, let's cook and eat in knowledge!

White Rice and Beef Lok Lak

បាយស និង ឡូកឡាក់សាច់គោ

1.1 Cooking instructions

Ingredient: (serves 6-8)

- 1 kg beef tenderloin
- 5 cloves garlic
- 2 tablespoons of cooking oil
- 1.5 tablespoons palm sugar
- 1 teaspoon sea salt
- 2 tablespoons Chinese cooking wine
- 2 tablespoons oyster sauce
- 2 tablespoons soy sauce
- 1.5 tablespoons sesame oil
- 500g lettuce
- 200g onion
- 4 eggs
- 400g ripe tomatoes

Lok Lak Sauce

- Salt and Kampot Pepper Sauce
- 1.5 tablespoons sea salt
- 1 tablespoon Kampot pepper
- 5 tablespoons lime juice



Cooking steps :

- Fry the eggs sunny side up.
- Prepare the vegetables: Wash and thinly slice the onion. Separate the lettuce, wash it well, and drain it. Wash and thinly slice the tomatoes. Finely chop the garlic.
- Marinate the beef: Cut the beef tenderloin into 2-3 cm cubes and marinate with sea salt, palm sugar, Chinese cooking wine, oyster sauce, and sesame oil.
- Make the sauce: first, dry roast the black Kampot peppercorns in a frying pan at medium-low heat for 2-3 minutes or until their fragrance is released. Grind the roasted pepper and place it in a bowl, add sea salt and lime juice, and mix well.

- Cook the beef: Put a frying pan on high heat with cooking oil. Add the chopped garlic and stir until the garlic browns a little. Pour the marinated beef into the frying pan, along with all the marinade, and cook for 5-7 minutes, depending on how rare you want the beef to be.
- Combine everything: on a large serving plate, prepare a bed of lettuce as the first layer, sliced tomatoes as the second layer, and sliced onion as the third layer. Pour the cooked beef over the bed of vegetables and place the fried eggs on top.
- Serve: Accompany the plate with a bowl of Kampot black pepper sauce and serve with fragrant steamed rice.

1.2 Analysis and Results

Analysis Method:

The nutritional values of Beef Lok Lak were calculated using NutriSurvey software v. 2004.

Analyzed Ingredients	Amount (g)
Stir-fried beef	
Beef, Lean, Cooked	900
Garlic	16
Soybean Oil	9
Sugar, Palm	31
Salt Table	10
Wine, 10% Alcohol	10
Oyster Sauce	9
Sesame Oil	5
Lok Lak Sauce	
Salt Table	17
Pepper, Black, Spice	4
Juice, Lime	21
Beef Lok Lak with rice for 1 serving	
Lettuce, Raw	56
Tomato, Ripe, Fresh	45
Onion, Fresh	23
Egg, Chicken, Raw or Cooked	70
Rice, White, Unenriched ckd	126
Stir-fried Beef*	117
Lok Lak Sauce*	10

*Used the nutritional values from the large portion calculation

Food	Amount	kcal	price	protein	fat	carbohydr	dietary	retinol	phytic	calcium	magnesi
beef, lean, cooked	900	2419.9	0.0	224.1	162.0	0.0	0.0	0.0	0.0	36.0	207.0
garlic, fresh-ap	16	14.1	0.0	0.4	0.1	3.3	0.4	0.0	0.0	7.0	3.5
soybean oil	9	79.6	147.9	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
sugar, palm	31	114.5	0.0	0.2	0.0	29.2	0.0	0.0	0.0	116.9	6.8
salt table	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.2
wine, 10% alcohol	10	7.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.8	1.0
Oyster Sauce	9	10.2	0.0	0.9	0.0	1.6					
sesame oil	5	44.2	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0

Total analysis:	
energy	2689.4 kcal
price	147.9 cent
protein (35%)	225.7 g
fat (60%)	176.1 g
carbohydr. (5%)	34.2 g
dietary fiber	0.4 g
retinol	- µg
phytic acid	- mg
calcium	165.2 mg
magnesium	218.5 mg
niacineequiv.	- mg
zinc	37.1 mg
iron	16.0 mg
Vit. B1	0.7 mg
Vit. B2	1.4 mg
niacine	20.9 mg
Vit. B6	3.0 mg
pantoth. acid	3.7 mg
tot. fol. acid	58.8 µg
Vit. B12	17.1 µg
Vit. C	1.6 mg
Vit. A	9.5 µg

Figure 1: The nutrient analysis of stir-fried beef in NutriSurvey software

Food	Amount	kcal	price	protein	fat	carbohydr	dietary	retinol	phytic	calcium	magnesi
salt table	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.3
pepper, black, spicoe	4	13.0	0.0	0.5	0.6	2.3	1.3	0.0	0.0	19.1	10.2
juice, lime	21	6.1	0.0	0.2	0.1	2.0	0.6	0.0	0.0	5.5	1.7

Total analysis:	
energy	19.1 kcal
price	0.0 cent
protein (12%)	0.7 g
fat (21%)	0.6 g
carbohydr. (67%)	4.3 g
dietary fiber	1.9 g
retinol	0.0 µg
phytic acid	0.0 mg
calcium	32.2 mg
magnesium	12.2 mg
niacineequiv.	0.0 mg
zinc	0.2 mg
iron	1.3 mg
Vit. B1	0.0 mg
Vit. B2	0.0 mg
niacine	0.0 mg
Vit. B6	0.1 mg
pantoth. acid	0.0 mg
tot. fol. acid	0.0 µg
Vit. B12	0.0 µg
Vit. C	11.6 mg
Vit. A	0.0 µg

Figure 2: The nutrient analysis of Lok Lak sauce in NutriSurvey software

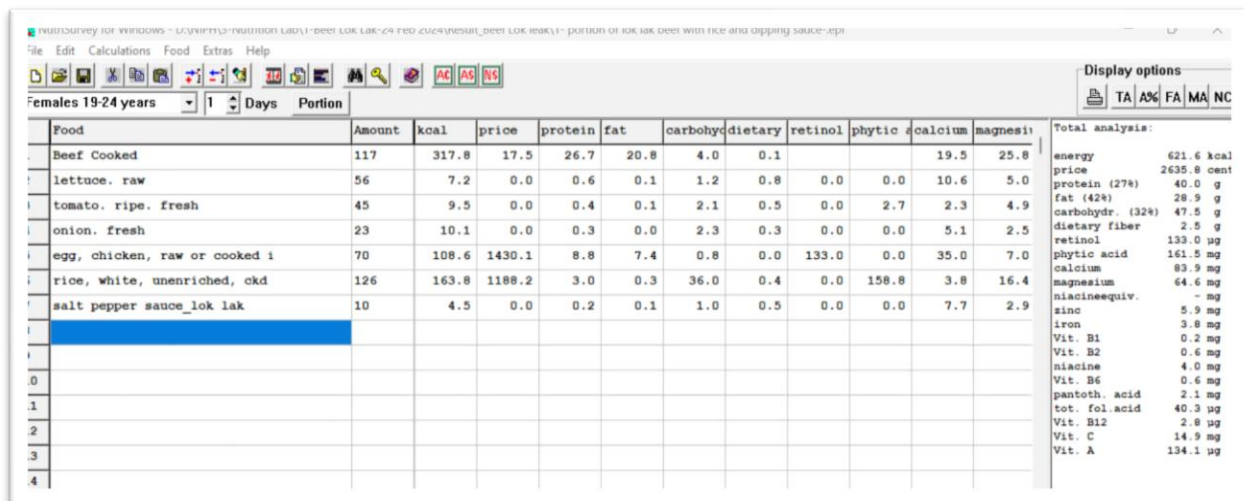



Figure 3: The nutrient analysis of Beef Lok Lak with rice for one serving in NutriSurvey software

Analysis Results:

The table below is the nutritional facts of Beef Lok Lak with rice including fried egg and pepper sauce for one serving (447g).

Nutrition Facts	Amount
Energy	621 Kcal
Protein	40.0g
Fat	28.9g
Carbohydrate	47.5g
Dietary Fiber	2.5g
Retinol	133.0 µg
Phytic Acid	161.5 mg
Pentothal Acid	2.1 mg
Vitamin A	134.1 µg
Vitamin B1	0.2mg
Vitamin B2	0.6mg
Niacin	4.0 mg
Vitamin B6	0.6mg
Vitamin B12	2.8 µg
Vitamin C	14.9mcg
Zinc	5.9mg
Iron	3.8mg
Calcium	83.9mg
Magnesium	64.6mg
Folic Acid	40.3 µg

1.3 Poster Announcement of the Results



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White Rice & Beef Lok Lak

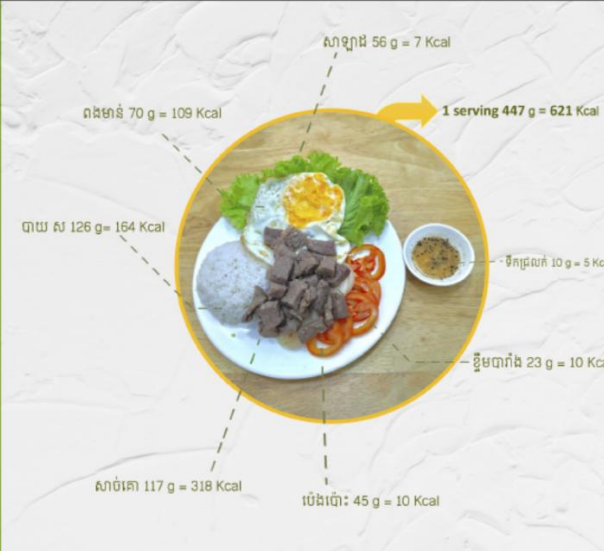
NUTRITION FACTS

1 Serving=447g
Amount Per Serving

Energy 621 Kcal

Protein	40.0g	Vitamin A	134.1µg	Zinc	5.9mg
Fat	28.9g	Vitamin B1	0.2mg	Iron	3.8mg
Carbohydrate	47.5g	Vitamin B2	0.6mg	Calcium	83.9mg
Dietary Fiber	2.5g	Niacine	4.0mg	Magnesium	64.6mg
Retinol	133.0µg	Vitamin B6	0.6mg	Tot. fol. Acid	40.3µg
Phytic acid	161.5mg	Vitamin B12	2.8µg		
Pantoth. acid	2.1mg	Vitamin C	140mcg		

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សាឡាង 56 g = 7 Kcal

ធន់មន់ 70 g = 109 Kcal

បាយស 126 g = 164 Kcal

សាច់គោ 117 g = 318 Kcal

រមែងរមែង 45 g = 10 Kcal

មីក្រូស្រូលីក 10 g = 5 Kcal

មីមណាតីង 23 g = 10 Kcal

1 serving 447 g = 621 Kcal

Source: The nutrient composition of the Beef Lok Lak was analyzed with the NutriSurvey Software v. 2004 using the food composition database from NHUM, 2019.

Banana Flower with Chicken Breast Salad

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2.1 Cooking Instructions

Ingredients: (serves 6-8)

- 1kg chicken breast
- 1 teaspoon salt
- 1.5 tablespoons fish sauce
- 5 chilies, finely chopped
- 150g mixed basil leaves
- 3 large banana flowers
- 2 tablespoons palm sugar
- 8 limes, juiced
- 150g unsalted roasted peanuts, partially crushed
- 5 large shallots, peeled and thinly sliced
- 10 cloves garlic, peeled and thinly sliced



Cooking steps:

- Boil 2 cups of water and add a pinch of salt. Place the chicken breast in the pot and cook for 5 minutes on each side. Take the chicken breast out to drain and cool, then break it into small strips.
- Remove a few of the outer layers of the banana flowers and then slice thinly. In order to prevent the flowers from turning black, soak them in a large mixing bowl with fresh water and half of the lime juice. Take out and drain.
- A few minutes before you are ready to eat, place salt, palm sugar, lime juice, sliced shallots, garlic, and chilies in a large bowl and mix until the salt and palm sugar are dissolved. Add the chicken breast strips and toss well. Add banana flowers and toss again.
- Serve on a large plate to share, or on small individual plates if preferred. Sprinkle the crushed roasted peanuts and mixed basil on top to garnish.

2.2 Analysis and Results

Analysis Method:

The nutritional values of Banana Flower with Chicken Breast Salad were calculated using NutriSurvey software v. 2004.

Analyzed ingredient	Amount (g)
Chicken Breast, Boiled or Steamed	1000
Peanut. Roasted	150
Juice. Lime	120
Garlic. Fresh-Ap	28
Shallot	172
Salt Table	5
Fish Sauce	4
Sugar. Palm	44
Chili. Red	18
Leaf. Hoary Basil. Raw	150
Banana Flower Heart	793

Food	Amount	kcal	price	protein	fat	carbohyd	dietary	retinol	phytic	sodium	calcium
chicken breast, boiled or steamed	1000	1419.7		270.0	37.0	0.0	0.0			410.0	110.0
peanut. roasted	150	851.1	0.0	38.7	73.8	24.2	12.8	0.0	2640.0	0.0	138.0
juice. lime	120	34.7	0.0	1.3	0.4	11.2	3.4	0.0	0.0	0.0	31.2
garlic. fresh-ap	28	24.6	0.0	0.8	0.1	5.7	0.8	0.0	0.0	0.0	12.3
shallot	172	75.6	0.0	2.4	0.3	17.5	2.4	0.0	0.0	0.0	37.8
salt table	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1936.2	2.3
fish sauce	4	4.4		0.4	0.0	0.7	0.0			153.3	
sugar. palm	44	162.5	0.0	0.3	0.0	41.4	0.0	0.0	0.0	0.0	165.9
chili. red	18	9.7	0.0	0.4	0.1	2.1	0.6	0.0	12.6	0.0	3.2
leaf. hoary basil. raw	150	31.5	0.0	1.8	1.0	7.5	3.6	0.0	7.5	0.0	30.0
1 banana flower heart	793	166.8	0.0	9.5	5.6	39.7	19.0	0.0	39.7	0.0	158.6
2											
3											
4											
5											

Total analysis:	
energy	2780.7 kcal
price	- cent
protein (44%)	325.6 g
fat (35%)	118.3 g
carbohydr. (20%)	149.9 g
dietary fiber	42.5 g
retinol	- ug
phytic acid	2699.8 mg
sodium	2499.5 mg
calcium	689.3 mg
potassium	2700.4 mg
magnesium	319.3 mg
niacineequiv.	- mg
zinc	7.6 mg
iron	14.5 mg
Vit. B1	0.7 mg
Vit. B2	0.4 mg
niacine	- mg
Vit. B6	1.3 mg
panthoth. acid	3.6 mg
tot. fol. acid	- ug
Vit. B12	- ug
Vit. C	193.6 mg
Vit. A	- ug
Vit. D	- ug
Vit. E (eq.)	- mg
biotine	- us

Figure 1: The nutrient analysis of banana flower with chicken breast salad in NutriSurvey software

The screenshot shows the NutriSurvey software interface. The main table displays the following data for the food item 'Banana flower with chicken breast salad':

Food	Amount	kcal	price	protein	fat	carbohyd	dietary	retinol	phytic	sodium	calcium
Banana flower with chicken breast salad	265	296.7		34.7	12.6	16.0	4.5		288.0	266.7	73.5

On the right side, the 'Total analysis' section lists the following values:

energy	296.7 kcal
price	- cen
protein (44%)	34.7 g
fat (35%)	12.6 g
carbohydr. (20%)	16.0 g
dietary fiber	4.5 g
retinol	- µg
phytic acid	288.0 mg
sodium	266.7 mg
calcium	73.5 mg
potassium	288.1 mg
magnesium	34.1 mg
niacineequiv.	- mg
zinc	0.8 mg
iron	1.8 mg
Vit. B1	0.1 mg
Vit. B2	0.0 mg
niacine	- mg
Vit. B6	0.1 mg
pantoth. acid	0.4 mg
tot. fol. acid	- µg
Vit. B12	- µg
Vit. C	20.7 mg
Vit. A	- µg
Vit. D	- µg
Vit. E (eq.)	- mg
biotine	- µg

Figure 2: The nutritional value of banana flour with chicken breast salad in NutriSurvey software per serving

Analysis Results:

The table below is the nutritional facts of banana flower with chicken breast salad for one serving (265g).

Nutrition Facts	Amount
Energy	296.7 kcal
Protein	34.7 g
Fat	12.6 g
Carbohydrate	16.0 g
Dietary Fiber	4.5 g
Retinol	-
Phytic Acid	288.0 mg
Sodium	266.7 mg
Vitamin A	-
Vitamin B1	0.1 mg
Vitamin B2	-
Niacin	
Vitamin B6	0.1 mg
Vitamin B12	-
Vitamin C	20.7 mg
Vitamin D	-
Vitamin E	-
Biotin	-
Zinc	0.8 mg
Iron	1.8 mg
Calcium	73.5 mg

Magnesium	34.1 mg
Potassium	288.1 mg
Folic Acid	-
Niacin	-
Pentothal Acid	0.4 mg

2.3 Poster Announcement of the Results



ញ៉ាំត្រយូងចេកសាច់មាន់

Banana flower with chicken breast salad



Nutrition Facts
1 Serving = 265g
Amount Per Serving

Energy 296.7 kcal

Protein (44%)	34.7 g	Vit. B1	0.1 mg
Fat (35%)	12.6 g	Vit. B2	0.0 mg
Carbohydrate (20%)	16.0 g	Niacine	- mg
Dietary Fiber	4.5 g	Vit. B6	0.1 mg
Retinol	- µg	Pantoth. acid	0.4 mg
Phytic acid	288.0 mg	Tot. fol. Acid	- µg
Sodium	266.7 mg	Vit. B12	- µg
Calcium	73.5 mg	Vit. C	20.7 mg
Potassium	288.1 mg	Vit. A	-
Magnesium	34.1 mg	Vit. D	- µg
Niacineequiv.	- mg	Vit. E (eq.)	- mg
Zinc	0.8 mg	Biotine	- µg
Iron	1.8 mg		

1 serving 265g = 296.7 kcal



Source: The nutrient composition of Banana flower with chicken breast salad was analyzed with the NutriSurvey Software v. 2004 using Thai food composition Database (THAI FCD). Food Recipe was based on NHUM, a Cambodian Recipe Book, 2019.

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June 2024

Stir-fried Chicken with Ginger

ឆាឌីសាច់មាន់

3.1 Cooking Instructions

Ingredients: (serves 6-8)

- 1kg free range chicken
- 250g ginger
- 2.5 spring onion
- 5 cloves garlic
- 9g tablespoons palm sugar
- 1 tablespoons oyster sauce
- 1 tablespoons soy sauce
- 0.5 tablespoon sea salt
- 1.5 tablespoons cooking oil



Cooking steps :

- Chop the free-range chicken into pieces around 2-3cm in size.
- Peel and finely chop the garlic.
- Peel and slice the ginger into thin strips.
- Cut the spring onions into 2-3 cm lengths.
- Heat oil in a large wok, and sauté the ginger until it browns. Remove and set aside.
- In the same wok, add garlic and brown just a little.
- Next, add the chicken and fry it until it starts to turn brown, then add all the seasoning.
- Add the ginger and toss well. Finally, add the spring onion, give it one last stir, and then turn the heat off.
- Place on a large serving plate, with steamed brown rice on the side.

3.2 Analysis and Results

Analysis Method:

The nutritional values of Stir-fried Chicken with Ginger were calculated using NutriSurvey software v. 2004.

Analyzed Ingredient	Amount (g)
Chicken. Clean. Ready to Cook	1000
Ginger Root. Fresh	250
Leaf. Onion	31
Garlic. Fresh-Ap	21
Sugar Palm	17
Soybean Sauce	15
Salt Table	8
Soybean Oil	23
Oyster Sauce	15

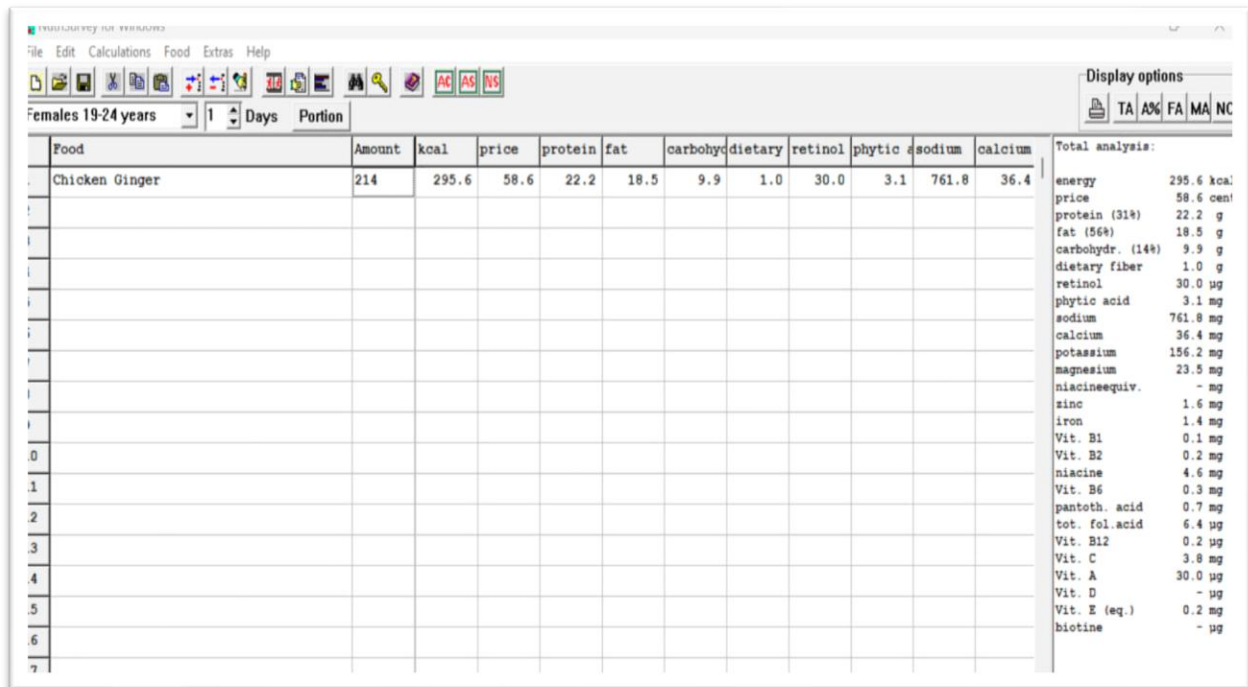


Figure 1: The nutrient analysis of stir-fried chicken with ginger in NutriSurvey software

Food	Amount	kcal	price	protein	fat	carbohyd	dietary	retinol	phytic	sodium	calcium
chicken, clean, ready to cook	1000	1429.3	0.0	135.0	95.0	0.0	0.0	200.0	0.0	370.0	70.0
ginger root, fresh	250	164.9	0.0	5.3	0.8	38.3	5.3	0.0	0.0	0.0	82.5
leaf, onion	31	6.5	0.0	0.4	0.2	1.5	0.7	0.0	1.5	0.0	6.2
garlic, fresh-ap	21	18.5	0.0	0.6	0.1	4.3	0.6	0.0	0.0	1.3	9.2
sugar, palm	17	62.8	0.0	0.1	0.0	16.0	0.0	0.0	0.0	0.0	64.1
soybean sauce	15	9.0	0.0	1.6	0.0	0.8	0.1	0.0	18.3	837.9	3.0
salt table	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3097.9	3.6
soybean oil	23	203.3	377.9	0.0	23.0	0.0	0.0	0.0	0.0	0.0	0.0
Oyster sauce Thai	15	10.8				3.2				600.0	

Total analysis:	
energy	1905.0 kcal
price	377.9 cent
protein (31g)	142.9 g
fat (56g)	119.1 g
carbohydr. (14g)	64.1 g
dietary fiber	6.7 g
retinol	200.0 µg
phytic acid	19.9 mg
sodium	4907.1 mg
calcium	238.6 mg
potassium	1012.2 mg
magnesium	157.6 mg
niacineequiv.	- mg
zinc	10.0 mg
iron	8.7 mg
Vit. B1	0.7 mg
Vit. B2	1.3 mg
niacine	29.7 mg
Vit. B6	1.9 mg
pantoth. acid	4.4 mg
tot. fol. acid	39.0 µg
Vit. B12	1.0 µg
Vit. C	24.3 mg
Vit. A	200.0 µg
Vit. D	- µg
Vit. E (eq.)	1.4 mg
biotine	- µg

Figure 2: The nutritional values of stir-fried chicken with ginger in NutriSurvey software per serving (214g)

Analysis Results:

The table below is the nutritional facts of stir-fried chicken with ginger for one serving (214g).

Nutrition Facts	Amount
Energy	295.8 kcal
Protein	22.2 g
Fat	18.5 g
Carbohydrate	9.9 g
Dietary Fiber	1.0 g
Retinol	-
Phytic Acid	3.1 mg
Sodium	573.7 mg
Vitamin A	4.6 µg
Vitamin B1	0.1 mg
Vitamin B2	0.2 mg
Niacin	-
Vitamin B6	0.3 mg
Vitamin B12	0.2 µg
Vitamin C	3.8 mg
Vitamin D	-
Vitamin E	0.3 mg

Biotin	-
Zinc	1.6 mg
Iron	1.4 mg
Calcium	37.0 mg
Magnesium	24.4 mg
Potassium	7.3 mg
Folic Acid	1.9 µg
Pentothal Acid	0.7 mg

3.3 Poster Announcement of the Results

ជាត្វីសាច់មាន់
CHICKEN WITH GINGER

Nutrition Facts
1 Portion - 214 g

Amount Per Serving
Energy 295.6 kcal

Protein (31%)	22.2 g	Vit. B1	0.1 mg
Fat (56%)	18.5 g	Vit. B2	0.2 mg
Carbohydrate (14%)	9.9 g	Niacine	4.6 mg
Dietary Fiber	1.0 g	Vit. B6	0.3 mg
Retinol	30.0 µg	Pantoth. acid	0.7 mg
Phytic acid	3.1 mg	Tot. fol. Acid	6.4 µg
Sodium	761.8 mg	Vit. B12	0.2 µg
Calcium	36.4 mg	Vit. C	3.8mg
Potassium	156.2 mg	Vit. A	30.0 µg
Magnesium	23.5 mg	Vit. D	-µg
Niacineequiv.	-mg	Vit. E (eq.)	0.2 mg
Zinc	1.6 mg	Biotine	-µg
Iron	1.4 mg		

214 g = 295.6 Kcal

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September 202

Kako Soup

សម្លកកូរ

4.1 Cooking Instructions

Ingredients: (serves 6-8)

- 300g Darias fish
- 250g pork belly
- 1 green bananas
- 0.75g green jackfruit
- 50g yardlong beans
- 50g pea eggplants
- 1/2 eggplant
- 100g pumpkin
- 100g green papaya
- 0.75g moringa leaves
- 0.75g ivy gourd leaves
- 0.75g bitter gourd leaves
- 25g ground roasted rice
- 3-4 stalks lemongrass
- 1.5-2 thin slices galangal
- 1/2-piece turmeric, 2-3cm long
- 1/2 thumb-sized piece kaffir lime rind
- 2.5 kaffir lime leaves
- 5 cloves garlic
- 2.5-3 shallots, peeled
- 1/2 tablespoon palm sugar
- 1/2 teaspoon salt
- 0.75 tablespoons fish sauce
- 25g prohok
- 2-2.5 cups water



Cooking steps:

- Rub the skin of the Darias fish with salt, rinse with water, then cut into 2-3 cm strips.
- Wash the pork belly and thinly slice.
- Peel about 50% of the skin from the green bananas, wash, and thinly slice.

- Peel, wash and thinly slice the green jackfruit.
- Wash and cut the yardlong beans into 2-3 cm pieces.
- Remove the stalks of the pea eggplants and wash. Cut the regular eggplant into 2-3 cm cubes.
- Remove about 50% of the skin from the pumpkin, wash it, and cut it into 2-3 cm cubes.
- Peel the green papaya, wash it, and cut it into finger-sized pieces, 2-3 cm long.
- Wash and drain the moringa, bitter melon, and ivy gourd leaves.
- To prepare the ground roasted rice, soak uncooked brown rice for 5 minutes and drain well. Roast the rice in a frying pan on medium heat until it turns light brown and emits a fragrance. Once the rice cools down, use a blender, food processor, or mortar and pestle to grind it, but not too finely.
- Thinly slice the lemongrass, galangal, turmeric, kaffir lime rind, garlic, and shallots and then use a mortar and pestle or food processor to make a paste.
- Mince the prohok.
- Boil 4-5 cups of water in a kettle.
- Place a medium-sized pot on medium heat and stir-fry the pork belly for 2-3 minutes in order to let the fat out.
- Add prohok and keep stirring until it creates bubbles and fragrance, then add the lemongrass paste and stir well for another 2 minutes.
- Reduce to low heat, add salt, palm sugar, roasted rice, and fish sauce, and stir well.
- Add the fish, stir, and let everything cook together for 2-3 minutes.
- Carefully take the fish out and keep it aside to use later.
- Pour about 2 cups of boiled water into the pot, stir, and add all the vegetables, excluding the leaves.
- Stir again before placing the lid on and allowing it to cook for 2-3 minutes on high heat.
- Add the rest of the boiled water and keep cooking for 5 more minutes on low heat.
- Add the fish again and stir to mix well.
- Add the final greens and stir one last time.

4.2 Analysis and Results

Analysis Method:

The nutritional values of Kako soup were calculated using NutriSurvey software v. 2004.

Analyzed Ingredient	Amount (g)
Fish, Catfish (Lele Dumbo)	286
Pork, High Fat, Cooked	250
Pumpkin, Raw	100
Banana, Unripe	62
Jackfruit, Unripe. Raw	75

Leaf. Bean, Yard Long	50
Pea Eggplant, Pea Aubergine	50
Eggplant, Purple	125
Papaya, Unripe, Raw	100
Ivy Gourd, Raw	75
Moringa, Drumstick Leaves	75
Leaf, Bitter Melon, Fresh-Ep	75
Rice, Roasted Uncooked	25
Sugar Palm	6
Fish, Fermented, Dried-Ap	25
Salt Table	6
Fish Sauce	4
Lemongrass	76
Kaffir Lime Leaves	2
Kaffir Lime Peel	1
Galangal	5
Turmeric	2
Shallot	17
Garlic, Fresh-Ap	16

Analysis Results:

Food	Amount	kcal	price	protein	fat	carbohydrate	dietary	retinol	phytic acid	sodium	calcium
fish. catfish (lele dumbo)	286	455.2	0.0	46.6	29.7	0.0	0.0	0.0	0.0	0.0	74.4
pork, high fat, cooked	250	922.6	0.0	49.3	78.0	2.5	0.0	2.5	0.0	3235.0	80.0
pumpkin. raw	100	20.1	0.0	0.5	0.3	4.4	1.4	0.0	0.0	0.0	7.0
banana. unripe	62	57.1	0.0	0.6	0.3	14.5	1.5	0.0	0.0	0.0	3.7
jackfruit. unripe. raw	75	33.0	0.0	1.0	0.2	7.6	1.0	0.0	0.0	0.0	16.5
leaf. bean. yard long	50	18.5	0.0	1.9	0.1	3.7	0.3	0.0	21.0	0.0	105.5
pea eggplant, pea aubergine	50	14.0	0.0	0.7	0.2	2.3					
eggplant. purple	125	35.0	0.0	1.0	0.3	8.3	3.1	0.0	0.0	0.0	7.5
papaya. unripe. raw	100	22.0	0.0	1.0	0.4	4.5	2.8	0.0	0.0	0.0	31.0
ivy gourd, raw	75	21.9	0.0	2.4	0.1	2.7		258.8		12.8	45.0
moringa, drumstick leaves	75	16.1	0.0	5.6	1.1	8.7		230.3		6.8	222.8
leaf. bitter melon. fresh-ep	75	11.3	0.0	1.7	0.2	1.6	1.5	0.0	31.5	0.0	55.5
rice, roasted uncooked	25	99.2	0.0	1.8	0.2	22.7				2.0	2.0
sugar. palm	6	22.2	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	22.6
fish. fermented. dried-ap	25	44.3	0.0	9.6	0.4	0.0	0.0	0.0	0.0	0.0	6.0
salt table	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2323.4	2.7
fish sauce	4	4.4	0.0	0.4	0.0	0.7	0.0			153.3	
lemongrass	76	58.7	0.0	0.7	1.0	11.8		9.1		9.1	25.8
kaffir lime leaves	2	2.7	0.0	0.1	0.1	0.4		2.2		0.5	20.6
kaffir lime peel	1	0.4	0.0				0.2			1.5	9.4
galanga	5	1.8	0.0	0.0	0.0	0.4		0.1		4.1	0.3
turmeric	2	0.9	0.0	0.0	0.0	0.2				0.9	2.0
shallot	17	7.5	0.0	0.2	0.0	1.7	0.2	0.0	0.0	0.0	3.7
garlic. fresh-ap	16	14.1	0.0	0.4	0.1	3.3	0.4	0.0	0.0	0.0	7.0

Total analysis:	
energy	1882.7 kcal
price	- cent
protein (26%)	125.7 g
fat (51%)	112.6 g
carbohydr. (22%)	107.5 g
dietary fiber	12.5 g
retinol	502.9 µg
phytic acid	52.5 mg
sodium	5749.4 mg
calcium	751.1 mg
magnesium	239.2 mg
niacineequiv.	- mg
potassium	1514.2 mg
zinc	10.5 mg
iron	17.1 mg
Vit. B1	2.5 mg
Vit. B2	2.5 mg
niacine	16.2 mg
Vit. B6	3.4 mg
pantoth. acid	4.7 mg
tot. fol. acid	7.5 µg
Vit. B12	29.9 µg
Vit. C	220.6 mg
Vit. A	2.5 µg
Vit. D	2.5 µg
Vit. E (eq.)	- mg
biotine	- µg

Figure 1: The nutrient analysis of Kako soup in NutriSurvey software

Food	Amount	kcal	price	protein	fat	carbohydrate	dietary	retinol	phytic acid	sodium	calcium
Kako	570	711.6		47.5	42.5	40.6	4.7	190.1	19.8	2173.2	283.9

energy	711.6 kcal
price	- cent
protein (26%)	47.5 g
fat (51%)	42.5 g
carbohydrate (22%)	40.6 g
dietary fiber	4.7 g
retinol	190.1 µg
phytic acid	19.8 mg
sodium	2173.2 mg
calcium	283.9 mg
magnesium	90.4 mg
niacineequiv.	- mg
potassium	572.3 mg
zinc	4.0 mg
iron	6.5 mg
Vit. B1	1.0 mg
Vit. B2	0.8 mg
niacine	6.1 mg
Vit. B6	1.3 mg
pantoth. acid	1.8 mg
tot. fol. acid	2.8 µg
Vit. B12	11.3 µg
Vit. C	83.4 mg
Vit. A	0.9 µg
Vit. D	0.9 µg
Vit. E (eq.)	- mg
biotine	- µg

Figure 2: The nutritional values of Kako soup in NutriSurvey software per serving (570g)

Food	Amount	kcal	price	protein	fat	carbohydrate	dietary	retinol	phytic acid	sodium	calcium
Kako	570	711.6		47.5	42.5	40.6	4.7	190.1	19.8	2173.2	283.9
rice, white, steamed	168	218.4	0.0	4.0	0.3	48.0	0.5	0.0	211.7	0.0	5.0

energy	930.1 kcal
price	- cent
protein (22%)	51.5 g
fat (40%)	42.9 g
carbohydrate (38%)	88.7 g
dietary fiber	5.2 g
retinol	190.1 µg
phytic acid	231.5 mg
sodium	2173.2 mg
calcium	288.9 mg
magnesium	112.3 mg
niacineequiv.	- mg
potassium	572.3 mg
zinc	4.6 mg
iron	6.8 mg
Vit. B1	1.0 mg
Vit. B2	0.8 mg
niacine	6.1 mg
Vit. B6	1.4 mg
pantoth. acid	2.5 mg
tot. fol. acid	2.8 µg
Vit. B12	11.3 µg
Vit. C	83.4 mg
Vit. A	0.9 µg
Vit. D	0.9 µg
Vit. E (eq.)	- mg
biotine	- µg

Figure 3: The nutritional values of Kako soup with rice in NutriSurvey software per serving

Analysis Results:

The table below is the nutritional facts of Kako soup for one serving (570g).

Nutrition Facts	Amount
Energy	711.6 kcal
Protein	47.5 g
Fat	42.5 g
Carbohydrate	40.6 g
Dietary Fiber	4.7 g
Retinol	190.1 µg
Phytic Acid	19.8 mg
Sodium	2173.2 mg
Vitamin A	0.9 µg
Vitamin B1	1.0 mg
Vitamin B2	0.8 mg
Niacin	-
Vitamin B6	1.3 mg
Vitamin B12	11.3 µg
Vitamin C	83.4 mg
Vitamin D	0.9 µg
Vitamin E	-
Biotin	-
Zinc	4.0 mg
Iron	6.5 mg
Calcium	283.9 mg
Magnesium	90.4 mg
Potassium	572.3 mg
Folic Acid	2.8 µg
Pentothal Acid	1.8 mg

The total energy of Kako soup meal is around 930 kcal. The meal consists of 168g of rice (218.4 kcal) consuming along with 570g of Kako soup (711.6 kcal).



Table below is the overall nutrients of Kako soup with rice for one serving.

Nutrition Facts	Amount
Energy	930.1 kcal
Protein	51.5 g
Fat	42.9 g
Carbohydrate	88.7 g
Dietary Fiber	5.2 g
Retinol	190.1 µg
Phytic Acid	231.5 mg
Sodium	2173.2 mg
Vitamin A	0.9 µg
Vitamin B1	1.0 mg
Vitamin B2	0.8 mg
Niacin	-
Vitamin B6	1.4 mg
Vitamin B12	11.3 µg
Vitamin C	83.4 mg
Vitamin D	0.9 µg
Vitamin E	-
Biotin	-
Zinc	4.6 mg
Iron	6.8 mg
Calcium	288.9 mg
Magnesium	112.3 mg
Potassium	572.3 mg
Folic Acid	2.8 µg
Pentothal Acid	2.5 mg

4.3 Poster Announcement of the Results



សម្លកក្កូវ / Kako Soup

Nutrition Facts
1 Portion = 570 g
Amount Per Serving

Energy 711.6 kcal

Protein (26%)	47.5 g	Vit. B1	1.0 mg
Fat (51%)	42.5 g	Vit. B2	0.8 mg
Carbohydrate (22%)	40.6 g	Niacine	6.1 mg
Dietary Fiber	4.7 g	Vit. B6	1.3 mg
Retinol	190.1 µg	Pantoth. acid	1.8 mg
Phytic acid	19.8 mg	Tot. fol. Acid	2.8 µg
Sodium	2173.2 mg	Vit. B12	11.3 µg
Calcium	283.9 mg	Vit. C	83.4 mg
Potassium	572.3 mg	Vit. A	0.9 µg
Magnesium	90.4 mg	Vit. D	0.9 µg
Niacineequiv.	- mg	Vit. E (eq.)	- mg
Zinc	4.0 mg	Biotine	- µg
Iron	6.5 mg		



សម្លកក្កូវ 570g = 711.6 Kcal

Source: Analyzed with the NutriSurvey Software v. 2004 using food Recipe, based on NHUM, a Cambodian Recipe Book, 2019

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December 2024



បាយសជាមួយសម្លកក្កូវ / Rice with Kako Soup

Nutrition Facts
1 Portion = 738 g
Amount Per Serving

Energy 930 kcal

បាយស 168 g = 218.4 Kcal



សម្លកក្កូវ 570g = 711.6 Kcal



Source: Analyzed with the NutriSurvey Software v. 2004 using Thai food Recipe, based on NHUM, a Cambodian Recipe Book, 2019

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December 2024

Steamed Layer Cake

នំថ្មក្តុំថ្មន

5.1 Cooking Instructions

Ingredients: (serves: 2-3)

- Tapioca flour: 75g
- Rice flour: 2.5g
- Coconut milk: 150g
- *Pandan extract: 11.5g
- Sugar: 64.5g



* 11.5g of pandan extract need 2.5g of pandan leaves blend with 11.5g of water.

Cooking steps:

- Mix tapioca flour, rice flour, sugar, and coconut milk together. Stir the mixture until all the ingredients are fully dissolved.
- Split the mixture into 2 portions: mix one portion with pandan extract and leave the other portion out.
- Prepare the steamer by setting it to medium heat and filling the pot with an appropriate amount of water based on the quantity of the dessert. While waiting for the water to heat up, apply a thin layer of oil all over the surface of a tray. Place the tray in the steamer and steam it for approximately five minutes.
- Pour the flour mixture with pandan extract into the tray and steam it for five minutes. Then, add a layer of the flour mixture without pandan extract and steam it for another five minutes. Continue this process until you achieve the desired number of layers.
- Steam the last layer for 10 mins to ensure the dessert is well cooked.
- Let the dessert cool down before cutting it into pieces.

5.2 Analysis and Results

Analysis Method:

The nutritional values of steamed layer cake were calculated using INMUCAL-Nutrients Ver.4.0

Analyzed ingredient	Amount (g)
Flour, cassava	75
Flour, rice	7.5
Sugar, white	64.5
Coconut milk, canned	150
Pandan leaves	2.5

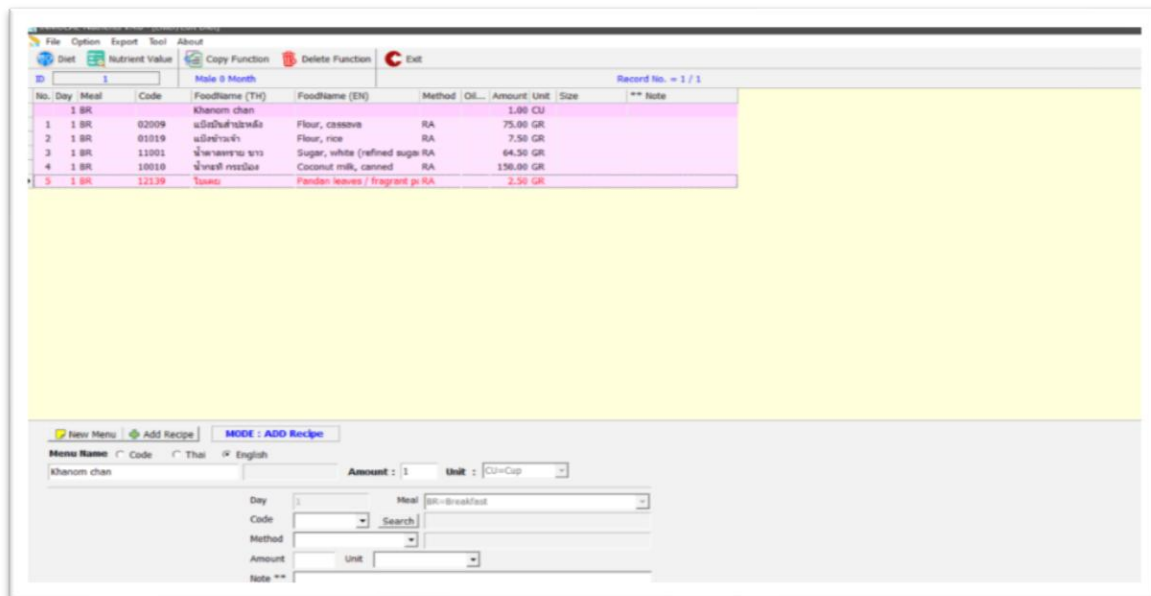


Figure1: The nutrient analysis of Khanom Chan in INMUCAL-Nutrients Ver.4.0

The screenshot shows the 'Nutrient Value' window in INMUCAL-Nutrients Ver.4.0, displaying the nutritional values for 'Khanom Chan' (Meal 1 BR). The table lists various nutrients and their values, units, and Thai DR (%) compared to Min DR and Max DR.

Day	component	Value	Unit	Thai DR (%)	Min DR	Max DR
1	Energy	821.64	kcal	0.00	0.00	0.00
1	Carbohydrate	141.05	g			
1	Sugars	65.92	g			
1	Protein	3.85	g	0.00	0.00	0.00
1	Protein-Animal	0.00	g			
1	Protein-Vegetable	3.85	g			
1	Fat	26.76	g			
1	Total Saturated Fatty acid	21.73	g			
1	Cholesterol	0.00	mg			
1	Calcium	96.82	mg	0.00	0.00	0.00
1	Phosphorus	37.25	mg	0.00	0.00	0.00
1	Iron	2.25	mg	0.00	0.00	0.00
1	Iron-Animal	0.00	mg			
1	Iron-Vegetable	2.25	mg			
1	Potassium	14.50	mg	0.00	0.00	0.00
1	Sodium	38.95	mg	0.00	0.00	0.00
1	Copper	0.05	mg	0.00	0.00	0.00
1	Magnesium	0.00	mg	0.00	0.00	0.00
1	Selenium	0.00	mcg	0.00	0.00	0.00
1	Zinc	0.07	mg	0.00	0.00	0.00
1	Vitamin A	2.75	RAE	0.00	0.00	0.00
1	Retinol	0.00	mcg			
1	Beta-Carotene	33.02	mcg			
1	Thiamin	0.06	mg	0.00	0.00	0.00
1	Riboflavin	0.02	mg	0.00	0.00	0.00
1	Niacin	0.00	mg	0.00	0.00	0.00
1	Vitamin B6	0.00	mg	0.00	0.00	0.00
1	Vitamin B12	0.00	mcg	0.00	0.00	0.00
1	Vitamin C	0.50	mg	0.00	0.00	0.00
1	Ascorbic acid	0.26	mg	0.00	0.00	0.00
1	Vitamin E	0.00	mg	0.00	0.00	0.00
1	Crude fiber	0.02	g			
1	Dietary fiber	0.41	g			
1	Phytate	0.00	mg			
1	Ash	1.31	g			

Figure2: The nutritional values of Khanom Chan in INMUCAL-Nutrients Ver.4.0

Analysis Results:

The table below shows the nutritional facts of steamed layer cake for 2-3 serving

Nutrition Facts	Amount
Energy	821.64kcal
Carbohydrate	141.35g
Sugar	65.92g
Protein	3.85g
Fat	26.76g
Saturated Fat	21.73g
Calcium	96.82mg
Iron	2.25mg
Potassium	14.50mg
Sodium	38.95mg
Vitamin A	2.75 RAE
Beta carotene	33.03mcg
Niacin	0.26mg
Dietary Fiber	0.41g
Ash	1.31g

5.3 Poster Announcement of the Results



នំច័ក្កច័ន

របៀបចម្អិន

គ្រឿងផ្សំ

សម្រាប់មនុស្ស២-៣នាក់

- ម្សៅឆា(ដំឡូងមី) ៧៥ក្រាម
- ម្សៅអង្ករ ៧.៥ក្រាម
- ស្ករស ៦៤.៥ក្រាម
- ខ្លឹមដូង ១៥០ក្រាម
- ទឹកស្អាត ១១.៥ក្រាម



តម្លៃអាហារូបត្ថម្ភ

តម្លៃអាហារូបត្ថម្ភរបស់នំនៃគ្រឿងផ្សំខាងលើរួមមាន៖

- ថាមពល: ៨២១.៦៤កាឡូរី
- កាបូអ៊ីស៊ីត: ១៤១.៣៥ក្រាម
- ជាតិស្ករ: ៦៥.៩២ក្រាម
- ប្រូតេអ៊ីន: ៣.៨៥ក្រាម
- ខ្លាញ់: ២៦.៧៦ក្រាម

- លាយម្សៅឆា(ដំឡូងមី) ម្សៅអង្ករ ស្ករស និងខ្លឹមដូងឲ្យបានស្រួល
- វិលកម្សៅដែលបានលាយហើយជា២០នាទីក្នុងឆ្នាំង
- លាយម្សៅមួយចំណែកជាមួយទឹកស្អាតតើយ និងមួយចំណែកទៀតជាមួយទឹកធម្មតា
- លាបប្រេងបន្លិចនៅពេលចំហុយ
- ដាក់ចំហុយពេញទំហំរយៈពេល៥នាទី មុននឹងចាក់ម្សៅដែលបានលាយចូល
- ចាក់ស្រទាប់នីមួយៗក្នុងបរិមាណស្មើគ្នាម្តងមួយស្រទាប់ៗ
- ស្រទាប់នីមួយៗគួរចំហុយក្នុងរយៈពេល៥នាទី ហើយស្រទាប់ចុងក្រោយគេអាចចំហុយក្នុងរយៈពេល១០នាទី ដើម្បីឲ្យនំឆ្អិនល្អ
- ពេលនំឆ្អិនល្អអាចទុកនំឲ្យត្រជាក់បន្តិចសិនមុនកាត់ជាដុំៗ

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Date: 02 June 2024

Bonus Notes

The students in Batch 7 (2017-2019) of the Master of Science in Nutrition program at the School of Public Health conducted the food analysis study under the guidance of Associate Professor Leang Supheap. The aim was to investigate the amount of nutrient intake of breakfast in percentage and comparing it to the estimated average requirement of a person. The study followed the methods of weighing the food and analyzing it using NutriSurvey software. The results from the analysis were then compared to the daily requirement for adults, which is 2000 kcal per day. Two popular breakfast meals in Cambodia were chosen for the analysis: rice with fried pork and stewed egg (Fig. 1) and beef noodle soup (Fig. 2). According to this survey, this rice with fried pork and stewed egg could provide energy 22% EAR; therefore, other meals and snacks should be considered to reach the EAR for daily basis requirements.

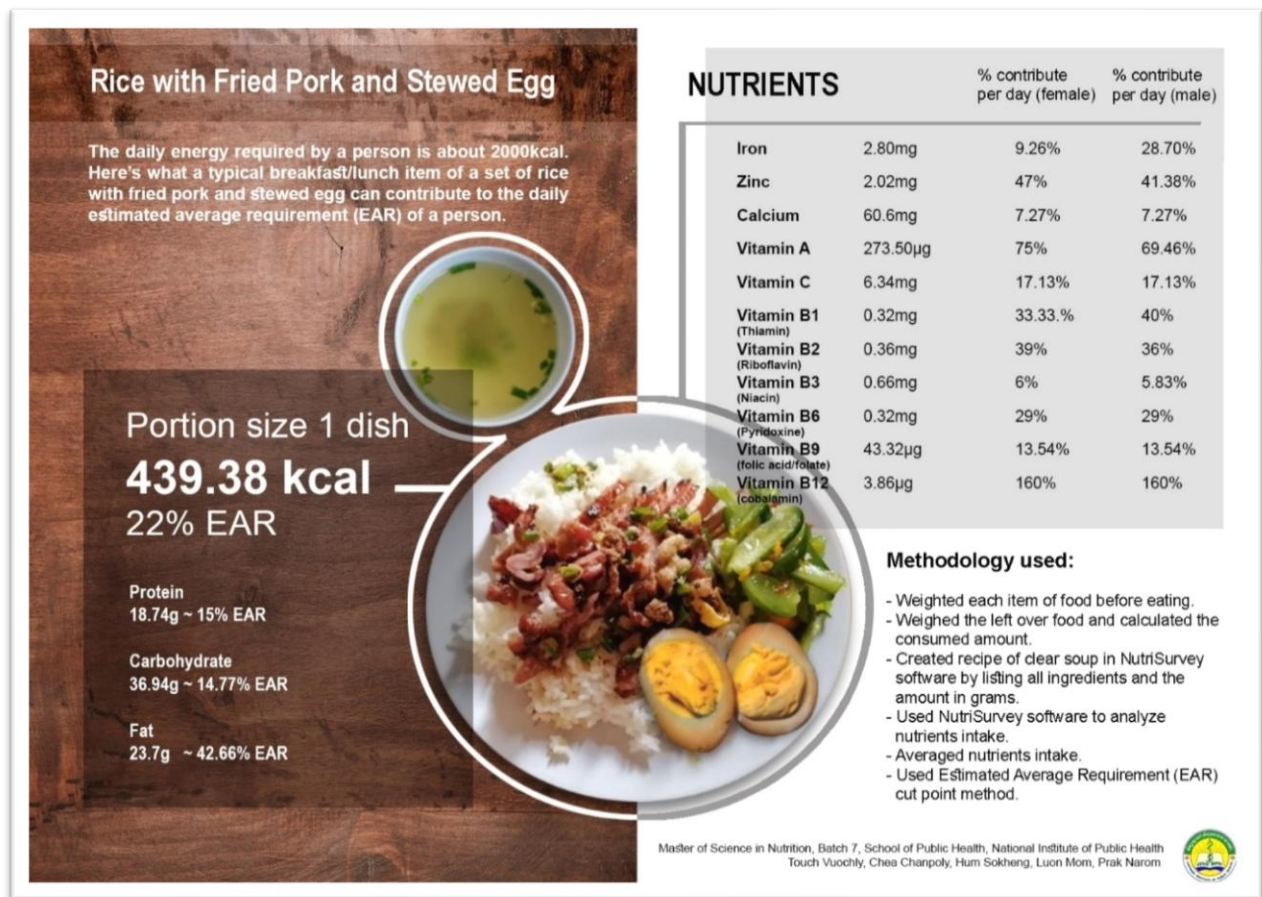


Figure 1: The poster results of nutrients analysis of Rice with Fired Pork and Stewed Egg

Based on the result of the analysis of NutriSurvey software, a portion size of 1 dish of Beef Noodle Soup contains energy about 30.78% of daily energy requirement. So other meals and snacks should be considered to reach the Estimated Average Requirement (EAR).

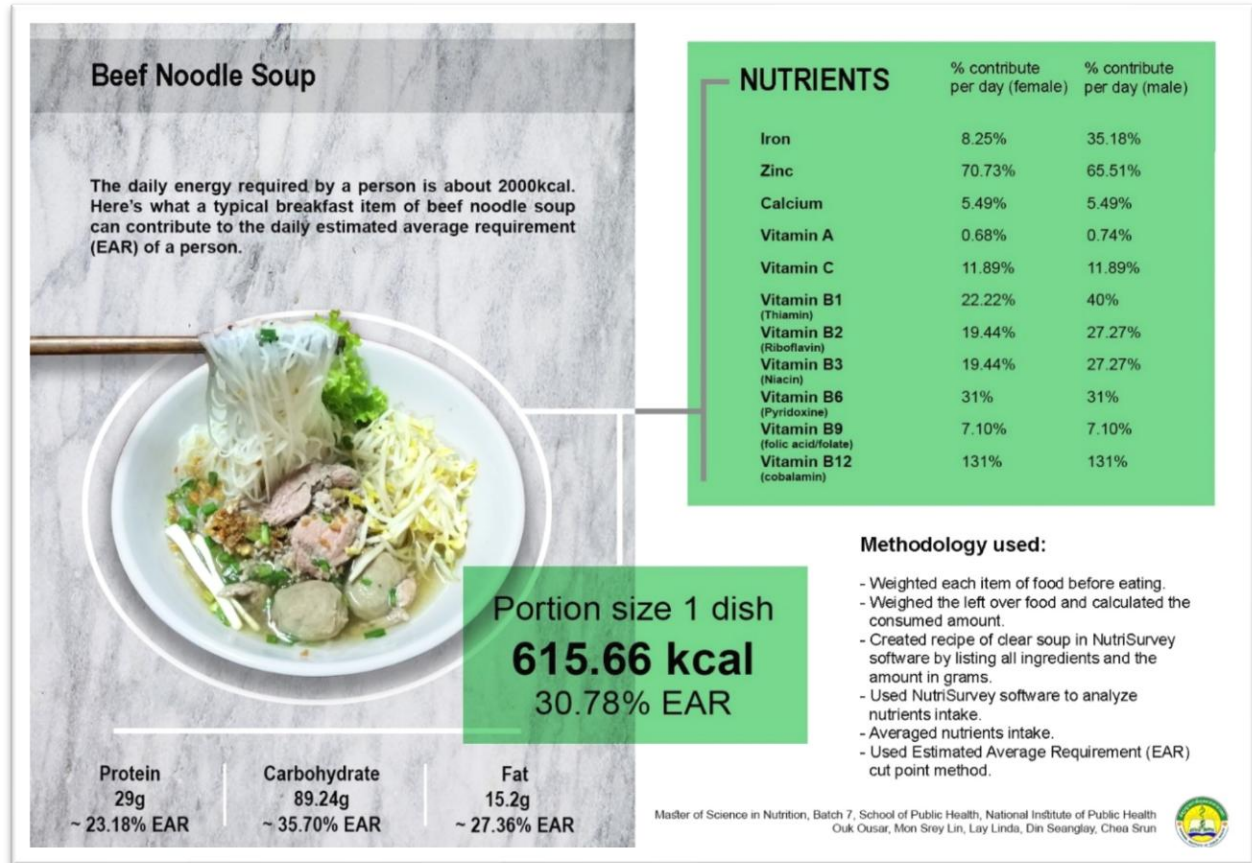
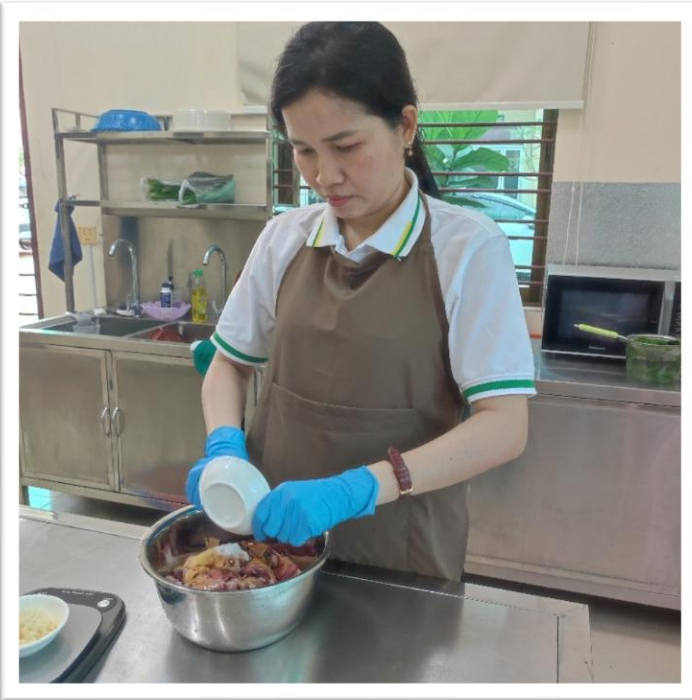


Figure 2: The poster results of nutrients analysis of Beef Noodle Soup

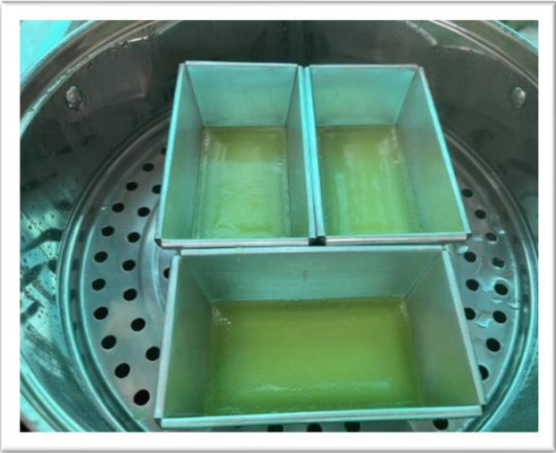
Cooking Activities











References

(1) Based on NHUM, a Cambodian Recipe Book, 2019

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