

# 4 Menus

Wise use guidance of  
invasive alien species:  
**Blackchin tilapia**



# Wise use guidance of invasive alien species: **Blackchin tilapia**



# Preface

Wetland is an ecosystem that has various roles and many functions, such as sources of biological resources which is economically important. This place is also beneficial to human livelihood, plants and animals. However, at present, it has found that wetlands have been degraded due to many factors, such as land use change, climate change, and also invasive alien species. These factors affect to biodiversity and result to the loss of wetland ecosystems.

Blackchin tilapia is classified as an invasive alien species in Thailand. It is a cause of damage and make effect to economy, society, and environment. Such problems, there has been an effort from many sectors to deal with those problems. Utilization has been considered as a method that can help to solve spreading problem of Blackchin tilapia while waiting process for eradication. This book has been made by gathering procedures and methods for using of Blackchin tilapia as a guideline for reducing amount and impacts caused by the Blackchin tilapia fish.

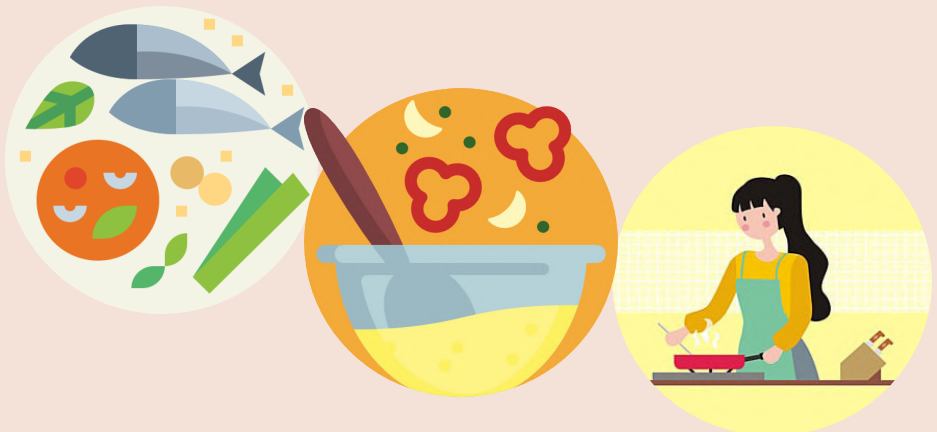
Department of Water Resources sincerely hoped that the book of wise use guidance of invasive alien species: Blackchin tilapia will be beneficial to many agencies and everyone who has studied and learned from this book.

Project organization team

June 2024

# Introduction

Project to enhance awareness and guidelines for the use of invasive alien species: Blackchin tilapia is a collaborative project between Department of Water Resources (DWR), Ministry of Natural Resources and Environment (MNRE), and the Ramsar Regional Center - East Asia (RRC-EA). Objectives are to study, gather data, make document, as well as raise awareness and guidelines for utilization of invasive alien species (Blackchin tilapia). As present, wetlands are an ecosystem that is important to both plant and animal life. Invasive alien species make effects to people's well-being, income, way of life, and also ecosystem. Therefore, implementation of such projects is a part of endeavor to conserve and protect wetlands with proper management and utilization, and reduce economic, social and environmental impacts from invasive alien species without adding high economic value which it leads to result of aquaculture of invasive alien species and do business or earn more profits from invasive alien species. The book of 4 menu, which is presented here, come from brainstorming with participation process of stakeholders and many agencies in the Pittayalongkorn Canal area, Samut Sakhon Province.



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# Fish Crackers



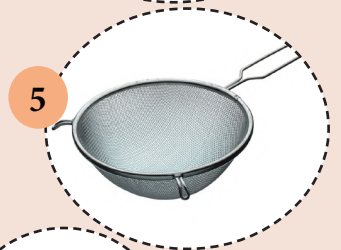
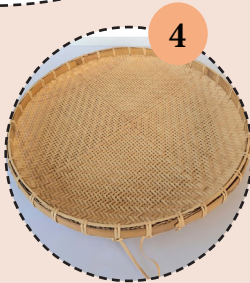
## Ingredient

1. Tapioca starch 500 g
2. Rice flour 150 g
3. Ground fish meat 150 g
4. Monosodium glutamate powder 1 tablespoon
5. Salt 2 tablespoons
6. Ground white pepper 2 tablespoons
7. Garlic 2 tablespoons
8. Coriander root 2 tablespoons
9. Hot water 1 cup
10. Oil for frying



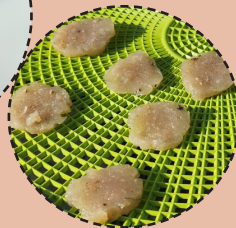
# Equipment

1. Frying Pan
2. Spatula
3. Bowl
4. Rack for sun-drying
5. Sieve for oil draining
6. Blender grinder
7. Foil
8. Steamer pot
9. Measuring spoon
10. Measuring cup





## Cooking



1. Mix tapioca flour, rice flour, salt, and pepper together, and put all with garlic, coriander root, and ground fish meat in bowl, knead the ingredients together.
2. Slowly add hot water, knead until it is smooth and doesn't stick to your hands, then try sculpting until it doesn't break, it can use.
3. Take the kneaded dough and shape it into round bars, size 250 - 300 g, diameter 5 cm, and steam for 50 minutes.
4. When it is cooked, run it through cold water and leave to cool, then put it in the refrigerator for 1 night to make it hard and easy to cut.
5. Take the fish crackers out of refrigerator and cut into thin pieces about 3 mm, put them in rack for sun-drying 2 - 3 days to dry completely.
6. When eating, frying on pan by using medium heat.

Ms. Pornsuk Vutivet , Nutrition ,  
Bangkok Provincial Fisheries Office



# Fish sauce



## Ingredient

1. Blackchin tilapia 120 Kg.
2. Sea salt 40 Kg. (ratio 3:1)



# Equipment

1. Clay jar size 100 - 120 liters
2. Bamboo basket covered with white filter cloth
3. Bowl
4. Measuring cup
5. Rice plate
6. White filter cloth
7. Plastic sheet
8. Rope
9. Jar cover
10. Drinking water pump



1



2



3



6



4



5



7



8

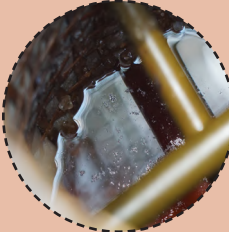


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# Cooking



1. Scoop fish and sea salt into a jar, and spread it evenly and make it in alternating layers, using ratio of 3 cups of fish to 1 cup of sea salt until the jar is full (this recipe doesn't require mixing fish with salt).

2. Use plastic to cover jar to prevent water entering, tie the mouth of the jar with string, tighten, and close the jar tightly.

3. Regularly check the deterioration of the plastic covering. If it deteriorates, replace it immediately, (Open the jar only when necessary.)

4. Leave to ferment for 12 months in the open air, fish sauce will begin to be filtered by using the fish which is fermented in the jar, taking bamboo basket covered with white filter cloth put into the jar, by pressing down until the bottom of the jar and the top edge of bamboo basket is above the level of the liquid or fish sauce in the jar.

5. The liquid or fish sauce obtained from the fermentation will flow through a bamboo basket covered with a white filter cloth, it will see fish sauce is brownish-yellow-red in color and quite clear color of fish sauce inside of bamboo basket, scoop out the fish sauce inside and pour it on the fish where are around bamboo basket in the same the jar.

6. Scoop until the fish sauce inside bamboo basket is gone, the fish sauce that is poured through the fish will seep into the inside of bamboo basket again.

7. Scooping out fish sauce about 2-3 times a day, 2-3 days a week for 1 month, it can be done in 2 ways: 1) using a plastic dipper or ladle 2) using a drinking water pump. This method is faster, and does not cause vibration of bamboo basket, producers will get fish sauce that is clear, not cloudy, has a beautiful color, and has a good aroma.

Mr. Jittagon Buadee,  
Phetchaburi farmers,  
owner of the fish sauce  
brand "Chao Wang"



# Crispy fish chili pastes with herbs



## Ingredient

1. Fish meat 1 cup
2. Crispy fried lemongrass 1 cup
3. Crispy fried kaffir lime leaves 1 cup
4. Fried onion 1 cup
5. Fried garlic 1 cup
6. Fried dried chilies (large) 1/2 cup
7. Fried dried chilies (small sized) 1/2 cup
8. Salt 1 teaspoon
9. Sugar 2 tablespoons
10. Oil for frying



# Equipment

1. Frying Pan
2. Spatula
3. Bowl
4. Sieve for oil draining





## Cooking



1. Scale off and remove only the fish meat, cut crosswise into thin pieces.

2. Heat oil in a pan, fry the fish until golden in color and crispy, and then put it aside to cool.



3. Take lemongrass, kaffir lime leaves, shallots, garlic, and dried chilies, cut into small pieces, and fry until golden in color and crispy. (Fry each one at a time), and then set aside to cool.

4. Mix fried fish and all the fried ingredients, combine together, add salt and sugar, mix well.



Mrs. Prapai yosvilai, President of Community Enterprise  
for career development at Ban Phanthai Norasing



# Fish line sprinkled with sesame seeds



## Ingredient

1. Fish fillet 500 grams
2. Sugar 2 tablespoons
3. Seasoning soy sauce (Maggi brand, green cap) half bottle
4. Fish sauce half a large bottle
5. Salt flowers 2 tablespoons
6. Monosodium glutamate powder 1 tablespoon
7. White sesame
8. Oil for frying



# Equipment

1. Frying Pan
2. Spatula
3. Bowl
4. Rack for sun-drying
5. Sieve for oil draining



## Cooking



1. Scale off and cut for only the fish meat, and cut lengthwise, width 1 cm.

2. Rinse with salt water for reduce fishiness and let it dry.

3. Mix with seasoning soy sauce and monosodium glutamate powder with fish meat, and sprinkle with sesame seeds as desired



4. Arrange it in a rack, let it dry in hot sun for 2 - 3 hours.

5. Fry until golden brown with medium heat.



Mrs. Sommai Yanngam President of Community Enterprise,  
Ban Bang Phli, Samut Sakhon Province



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Supported by

**Ramsar Regional Center - East Asia**

Water Resources Conservation and Rehabilitation Division,  
Department of Water Resources, Ministry of Natural Resources and Environment

June 2024





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