

Fungus

Fungus

In general, mushrooms are a product from the mountains. It is not typically included as Mizube no Sachi; however, we often came across wild mushrooms during the research at markets. When considering products that are traded at markets, mushrooms are harvested from nearby villages and neighborhoods. Therefore, we decided they can be added to Mizube no Sachi.

Identification of fungi could be difficult. Ideally, detailed observation and testing of color reaction using chemicals of spores are necessary. However, in this research, most of the species were identified through referring field guides and information from the internet. We ask for the reader's understanding on this approach.

There are some routes of supplying mushrooms in Mekong river basin markets. One is factory-produced ones which are often packed in plastic containers. The packaged mushrooms are only found in supermarkets that have refrigerators. Dried mushrooms such as *Auricularia auricular*, *A. polytricha*, *Lentinus edodes* are often sighted in dried goods specialty shops. Those are fungi that are produced in China and Thailand and have been imported.

Another route is local farm-raised mushrooms. These mushrooms such as *Pleurotus ostreatus*, *Volvariella volcacea*, *Lentinus polychrous* are produced at farms near markets and often sold fresh. *Lentinus edodes* is not widely produced currently, but a few farms make it. *Pleurotus ostreatus* production method has recently gained more popularity, and it is said to be contributing in bringing income to the farms. Shapes, sizes, and colors appear different. This may be due to a difference in breed and culture media.

The other route is the wild collection, which is the most appropriate as to be Mizube no Sachi. There are certain people who prefer wild mushrooms over cultivated ones. Depending on the season, especially beginning of the dry season which is September through March, various mushrooms are seen at markets. Most popular ones are *Termitomyces* spp., Boletaceae spp., *Russula* spp., Tricholomataceae sp.. Other than those, *Schizophyllum commune* is used for making broth, *Astraeus hygrometricus* is put in soup to enjoy the texture of its springy outer skin, and many other mushrooms are used.

On the other hand, there are many cases of food poisoning by mushroom. Some varieties of *Russula* spp. have a poison that can be fatal. Therefore, use of mushrooms should be done with caution, but despite the fact, people continue to enjoy the flavorful mushrooms.



30 Jun. 2011 Pakse, Laos

Pleurotus ostreatus

Order: Agaricales
Family: Pleurotaceae

LA		
KH	<u>Psat, Psat mayura</u>	
TH	<u>Het paohu</u>	
VN	<u>Nam so (nam bao ngu)</u>	<u>Nấm sò (nấm bào ngư)</u>
JP	<u>Hira-take</u>	<u>ヒラタケ</u>

Remarks

Basic Information

It is one of cultivated mushrooms that are commonly traded in markets in Indo-China. Only farm-raised ones are found in markets. It has become a popular produce for farmers since it is grown easily by using hay to make the breeding bed. The fruitbody appears different depending on the variety as well as the structure of the breeding bed. Its Cambodian name, “Psat”, means mushroom. It was called “Psat mayura”, in Ratanakiri, Cambodia.



10 Jun. 2007 Vientiane, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos

Lentinus polychrous

Order: Agaricales
Family: Pleurotaceae

LA	Het bot, Het kadang, Het khao	
KH	Psat chhu, Psat sway, Psat ta woa	
TH	Het lom	
VN	Nam so(nam bao ngu)	Nấm sò (nấm bào ngư)
JP	Kegawa-take	ケガワタケ類

Remarks

Basic Information

This type of mushroom is grown widely around Indo-China region, and some species are often found in markets. However, it is difficult to identify those species. A few wild mushrooms can be found at markets, but in this listing, we put cultivated variety of *L. polychrous* as a typical type. In Laos the, following species are grown:

L. squarrosulus (Laos; Het khon khao, Thai; Het khon khao),
L. strigosus (Laos; Het phai, Het hou khuang), *L. sajor-caju*
(= *Pleurotus sajor-caju*) (Laos; Het tin pok, Thai; Het nan fa),

L. volemus (Laos; Het phan). Its Cambodian name, “Psat chhu”, means a mushroom growing on a tree. “Psat sway”, means a mushroom growing on a Mango tree.

Use

Both wild and cultivated mushrooms of this type become very hard when grown too big. It is too hard to eat this way, but people still use it because of its good taste, by chopping it finely. It is used in variety of dishes such as stir-fry or soup.



14 Feb. 2010 Lamsaktay Market,
Champasak, Laos



15 Feb. 2010 Savan Sai Market,
Savannakhet, Laos



15 Feb. 2010 Savan Sai Market, Savannakhet,
Laos



15 Feb. 2010 Savan Sai Market, Savannakhet,
Laos



17 Feb. 2010 Pakse New Market, Champasak,
Laos



20 Feb. 2010 Dong Makai Market, Vientiane,
Laos



20 Feb. 2010 Thakhek, Laos



10 Jun. 2007 Vientiane, Laos



20 Feb. 2010 Thakhek, Laos



Lentinus sp.

Lentinus edodes

Order: Agaricales
Family: Pleurotaceae

LA	<u>Het hom</u>	
KH	<u>Psat kliem, Psat kumau</u>	
TH	<u>Het hom, Hed horm, Hed hom sot</u>	
VN	<u>Nam huong(nam dong co)</u>	<u>Nấm hương (nấm đông cô)</u>
JP	<u>Shii-take</u>	<u>シイタケ</u>

Remarks

Basic Information

It is sighted occasionally in markets in Indo-China. It does not look very appealing due to its small size. This is believed because of a lack of nutrients in its breeding bed. Although it is said to be native and distributed in Southeast Asia, we have not been able to find wild *Lentinus edodes* in the markets. Most of this mushroom sold in Cambodia is dried. Fresh ones appear occasionally in markets in Phnom Penh, but these are grown in China and imported via Vietnam.



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thai



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thai

Schizophyllum commune

Order: Agaricales
Family: Pleurotaceae

LA	<u>Het kab kae, Het tin kab kae,</u> <u>Het bee, Het khao tok</u>	
KH		
TH	<u>Het hu</u>	
VN		
JP	<u>Suehiro-take</u>	<u>スエヒロタケ</u>

Remarks

Use

It is used as making soup stock. This mushroom is very hard, so it is not eaten as it is. Its Lao name, “Het kab kae”, means gecko (kab kae) mushroom (het), and “Het tin kab kae” means, “mushroom that gecko eats”.



09 Sep. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos



08 Nov. 2008 Tha Heua Market, Louang Phabang,
Laos

Tricholomataceae Gen. sp.

Order: Agaricales

Family: Tricholomataceae

LA	_____	_____
KH	<u>Psat kanchoun</u>	_____
TH	_____	_____
VN	<u>Nam dui ga</u>	<u>Nấm đùi gà</u>
JP	<u>Shimeji</u>	<u>シメジの1種</u>

Remarks

Basic Information

There are records from Laos that says *Trichostoma crissum* is called Het tin het, Het chan, Het tab tao khao, and Het tin pha. In Cambodia, this mushroom is said to taste good but is expensive.



25 Jul. 2010 Warin Chamrap Market,
Ubon Ratchathani, Thailand

Termitomyces spp.

Order: Agaricales

Family: Tricholomataceae

LA	Het pouak, Het pouk, Het tab, Het pouak tab	
KH	Psat dambouk	
TH	Het kon	
VN	Nam moi	Nấm mối
JP	Shiroari-take	シロアリタケ類

Remarks

Basic Information

Its fruiting body appears from mycelium which is developed inside termite mounds. In Laos, twelve species

of *Termitomyces* spp. are known. Each species has a different appearance. Many of them are edible while there are some that people avoid because they are supposed to be poisonous. *Termitomyces* spp. is one of most popular among wild mushrooms, along with *Boletaceae* Gen. spp., and *Russula* spp..

T. arbiceps (Thai; Het kon), *T. aurantiacus* (Thai; Het kon), *T. microcarpus* (Laos; Het tab kai noi) , *T. robustus* (Laos; Het pouak lao, Het pouak chik, Het pouak phane) , *T. albuminosus* (Laos; Het kone) , *T. clypeatus* (Laos; Het tab chik, Thai; Het kon) , *T. eurrhisus* (Het tab) , *T. fuliginosus* (Thai; Het kon) , *T. globules* (Laos; Het tab, Het pouak) , *T. schimperi* (Laos; Het pouak tab nhai) , *T. striatus* (Laos; Het tab dong, Thai; Het kon) , *T. tyleranus* (Laos; Het pouak khao) .



24 Jul. 2010 Pakse New Market, Pakse, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos
Termitomyces microcarpus

Amanita spp.

Order: Agaricales
Family: Amanitaceae

LA	Het la ngok, Het la ngak, Het meuak	
KH	Psat kompingdoug	
TH		
VN	Mot dang nam doc (nguy hiem)	Một dạng nấm độc (nguy hiem)
JP	Tamago-take	タマゴタケ類

Remarks

Basic Information

Many of the mushrooms of *Amanita* spp. are fatally poisonous and only a few species are collected as food. Examples of edible ones are: *A. caesarea* (Laos; Het la ngok daeng) , *A. hemibapha* (Laos; Het la ngok leuang) , *A. princeps* (Laos; Het la ngok khao) *A. vaginata* (Laos; Het khi ka deuane, Thai; Het kai) . Its Cambodian name, “Psat kompingdoug”, means buds of coconut palm tree.



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



10 Jun. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos

Volvariella volcacea

Order: Agaricales
Family: Pluteaceae

LA	<u>Het fang</u>	
KH	<u>Psat chombaung</u>	
TH	<u>Het fang</u>	
VN	<u>Nam rom</u>	<u>Nấm Rơm</u>
JP	<u>Fukuro-take</u>	<u>フクロタケ</u>

Remarks

Basic Information

It is cultivated widely by making a mushroom bed with

straw. This mushroom and *Pleurotus ostreatus*, *Panus* spp. can be called three most grown fungi in Indo-China, because they are seen at almost any market in the region. Therefore, it is naturally assumed that these mushrooms are important ingredients of most popular dishes. Its Cambodian name, “Psat chombaung”, means “mushroom of straw mounds”. English name: Straw mushroom.



10 Jun. 2007 Vientiane, Laos



15 Feb. 2010 Savan Sai Market, Savannakhet, Laos



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thailand



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thailand

Boletus edulis

Order: Boletales
Family: Boletaceae

LA	<u>Het pheung dam, Het tab tao</u>	
KH		
TH	<u>Het taitaodam</u>	
VN		
JP	<u>Yamadori-take</u>	<u>ヤマドリタケ</u>

Remarks

Basic Information

It is often seen during the dry season in Thailand and Laos. It looks like a few different species are mixed in one basket because they have a slightly different appearance. It is not clear how many species are mixed together.



14 Feb. 2010 Luk2 Market, Thakhek,
Laos

Boletus sp.1

Order: Boletales
Family: Boletaceae

LA		
KH		
TH	Het hou	
VN		
JP	Amiashi-iguchi	アミアシイグチ(仮称)

Remarks

Basic Information

This mushroom was observed in Southern Laos in September. It is one of *Boletus* sp.. It turns dark when cooked, and is often stir-fried with pork to be served.



19 Feb. 2010 Thakhek , Laos



19 Feb. 2010 Thakhek , Laos



20 Feb. 2010 Thakhek , Laos



19 Feb. 2010 Thakhek , Laos

Boletus sp.2

Order: Boletales
Family: Boletaceae

LA	<u>Het nam ma</u>	
KH	<u>Psat chombo</u>	
TH		
VN		
JP	<u>Tsuchi-iguchi</u>	ツチイグチ(仮称)

Remarks

Basic Information

It has thick and crisp flesh, but also a earthy flavor. It is preferred for stewing. Its Lao name, “Het nam ma”, means “Areca palm mushroom”. Its Cambodian name, “Psat chombo”, is the name of a tree, and they use this mushroom as medicinal and aphrodisiac.



14 Feb. 2010 Luk2 Market, Thakhek, Laos



23 Sep. 2009 Mouang Keo Market, Houay Xai, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thai

Boletaceae Gen. spp.

Order: Boletales
Family: Boletaceae

LA	_____	_____
KH	_____	_____
TH	<u>Het phaen</u>	_____
VN	_____	_____
JP	<u>Iguchi</u>	<u>イグチ類</u>

Remarks

Basic Information

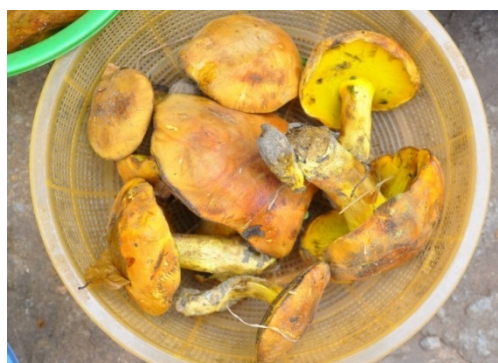
Boletaceae Gen. spp. are important edible wild mushrooms in Indo-China peninsula. Many seasonable varieties are found in markets around the region. There are records from Laos about *Boletus edulis*, *Boletus chrysenteroides* (Laos; Het pheung leuang), and *Boletus chromape* (Laos; Het pheung tin leuang). Many other species are being sold.



14 Feb. 2010 Luk2 Market, Thakhek, Laos



14 Feb. 2010 Luk2 Market, Thakhek, Laos



14 Feb. 2010 Luk2 Market, Thakhek, Laos



10 Jun. 2007 Vientiane, Laos

Russula delica

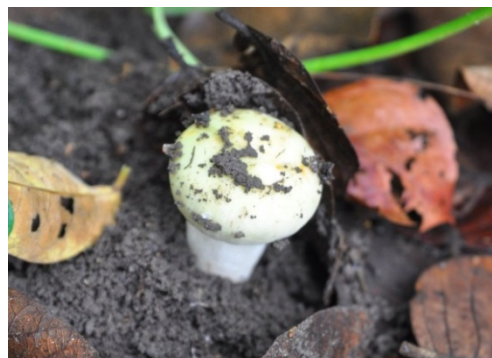
Order: Russulales
Family: Russulaceae

LA	<u>Het khai khao, Het lom khao</u>	
KH		
TH	<u>Het lom, Het takai</u>	
VN		
JP	<u>Shirohatsu</u>	<u>シロハツ</u>

Remarks

Basic Information

The peak season of this mushroom is September in Northern Thailand, and many people go to the mountains to pick it. It is often stir-fried with meat or put in soup. It is called, “Het khao khai”, in Attapeu region in Laos, which means “egg white mushroom”.



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand



10 Jun. 2007 Vientiane, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thailand

Russula spp.

Order: Russulales
Family: Russulaceae

LA	<u>Het din</u>	
KH		
TH		
VN		
JP	<u>Benitake</u>	<u>ベニタケ類</u>

Remarks

Basic Information

Within *Russula* spp., a few more species are used as food other than *Russula delica*. However, many of them have similar appearance and it is difficult to confirm if a designated name and a fruiting body matches. Depending on the country, some species are regarded as poisonous. Therefore, identification of *Russula* spp. needs to be organized by a specialist. There are some species that are fatally poisonous, so its consumption without proper identification should be avoided. There are many cases of serious poisoning from this mushroom. *R. lepida* (Laos; Het daeng, Het nam mak), *R. densifolia*

(Laos; Het than noi, poisonous in Taiwan), *R. alboareolata* (Laos; Het khao peng), *R. a cyanoxantha* (Laos; Het na mouang), *R. emetic* (poisonous in Japan and Taiwan, Laos; Het khai lang khiou), *R. foetens* (poisonous in Japan and Taiwan, Laos; Het khai), *R. nigricans* (Thai; Het taan), *R. virescens* (Laos; Het na ngoua).



19 Sep. 2009 Thung Yao, Lamphun,
Thailand



08 Nov. 2008 Tha Heua Market, Louang
Phabang, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai

Russula aeruginea

Order: Russulales
Family: Russulaceae

LA		
KH		
TH	<u>Het khon</u>	
VN		
JP		

Remarks

Basic Information

It is popular in Northern Thailand because of its taste. It was washed and sold on a big plate.



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand

Lactarius volemus

Order: Russulales
Family: Russulaceae

LA		
KH		
TH	<u>Het hart</u>	
VN		
JP	<u>Chichitake</u>	チチタケ

Remarks

Basic Information

It was spotted only in Northern Thailand.



19 Sep. 2009 Thung Yao, Lamphun,
Thailand



19 Sep. 2009 Thung Yao, Lamphun,
Thailand

Gomphaceae Gen. sp.

Order: Gomphales
Family: Gomphaceae

LA	<u>Het nouath</u>	
KH		
TH		
VN		
JP	<u>Houkitake</u>	<u>ハウキタケの1種</u>

Remarks

Basic Information

This type of mushroom is rarely seen in Indo-China Peninsula. It was found only once in Northern Thailand in September. Its Lao name, “Het nouath”, means “beard mushroom”.



19 Sep. 2009 Thung Yao, Lamphun,
Thailand

Auricularia polytricha

Order: Auriculariales
Family: Auriculariaceae

LA	<u>Het hou nou dam, Het hou ling, Katan,</u>	
KH	<u>Psat trouchea kondol</u>	
TH		
VN	<u>Nam meo</u>	<u>Nấm mèo</u>
JP	<u>Arage-kikurage</u>	<u>アラゲキクラゲ</u>

Remarks

Basic Information

It is less often seen than *A. auricular* in markets.

It is said to be bred in beds, but we could not confirm details on that method. We also heard that it is cultivated by inoculating logs with mycelium. In the wild, it is found growing on fallen or semi-dead trees. Its Lao name, “Het hou nou dam”, means “black rat’s ear mushroom”, and “Het hou ling” means “monkey’s ear mushroom”. Its Cambodian name, “Psat trouchea kondol”, also means “rat’s ear mushroom”.



10 Jun. 2007 Vientiane, Laos



20 Feb. 2010 Thakhek, Laos



20 Feb. 2010 Thakhek, Laos

Auricularia auricula

Order: Auriculariales
Family: Auriculariaceae

LA	<u>Het hou nou daeng.</u>	
KH	<u>Psat trouchea kondol</u>	
TH	<u>Het hu nu</u>	
VN	<u>Nam meo</u>	<u>Nấm mèo</u>
JP	<u>Kikurage</u>	<u>キクラゲ</u>

Remarks

Basic Information

It is commonly found in markets since it is a popular ingredient of stir-fry and soup dishes. Both cultivated and wild ones are sold, but cultivated ones are seen more often. In Laos, similar types of *Auricularia auricular* are collectively called, “Het sanoum (hou nou)”. Other than the term, and depending on the varieties, they call it as following: *A. delicate* (Het hou nou hang pheung), *A. fuscusuccinia* (Het hou ling), *A. tennus* (Het hou nou khao). Its Lao name means “Red rat’s ear mushroom”. In Cambodia, it is not differentiated from *A. polytricha*. English name: Mouse-ear mushroom.



10 Jun. 2007 Vientiane, Laos



08.Nov. 2008 Louang Phabang, Laos



26, Sep., 2009 Vientiane, Laos

Astraeus hygrometricus

Order: Sclerodermatales
Family: Astraeaceae

LA	<u>Het pho, Het tob, Het poh</u> <u>faai, Het poh nang</u>	
KH		
TH	<u>Het toup</u>	
VN		
JP	<u>Tsuchi-guri</u>	<u>ツチグリ</u>

Remarks

Basic Information

There are two types of *Astraeus hygrometricus*; one has a darker outer layer and the other has a lighter layer. In Laos, darker ones are called, “Het pho faai”, meaning “cotton”, and the lighter ones are called, “Het pho nang”, which means “skin”. Even after its inside had turned into spores, it is put in stir-fry or soup to be eaten. It becomes available in June through September.



30 Jun. 2011 Attapeu, Laos



11 Jun. 2007 Vientiane, Laos

Reference

今関六也 ほか 編著 (1998) 日本のきのこ (山溪カラー名鑑). 山と溪谷社.

周文能・張東桂 (2005) 野菇図鑑 (台湾四百種常見大型真菌図鑑). 遠流出版事業股份有限公司.

「ランナー・タイ、北タイのキノコ」 <http://lannathai.nomaki.jp/kinoko/kinoko.htm>