

What is the difference between *holy basil*, *sweet basil* and *hoary basil* — and which one is “*Thai basil*”?

Which type of *chilli* packs the most punch?

What culinary secrets do “*Chinese keys*” unlock?

Which Thai herbs can relieve *indigestion*, *cough*, *rheumatism*, *fatigue* and *migraine*?

Thai cuisine is famed for the complexity and delicacy of its flavours, largely the result of the herbs and spices used. Surprisingly, only 30 or so are needed. It is the ingenious combination of these ingredients that makes Thai food so distinctive. And at the same time that these herbs and spices add flavour and fragrance, they bring natural curative properties that have been recognised for their efficacy in traditional practice through the ages.

Each herb or spice in this book is described in terms of its botanical characteristics, its culinary and medicinal uses (and other notable applications), and how it should be handled and stored to best preserve its qualities. In addition, a selection of classic recipes shows how the various ingredients are brought together harmoniously in authentic Thai fare.

Packed with information and photos, this book is an ideal guide to the science of these useful plants, the practicalities of putting them to use, and the magic of Thailand’s cuisine and culture.

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30 Useful Herbs & Spices of Thailand

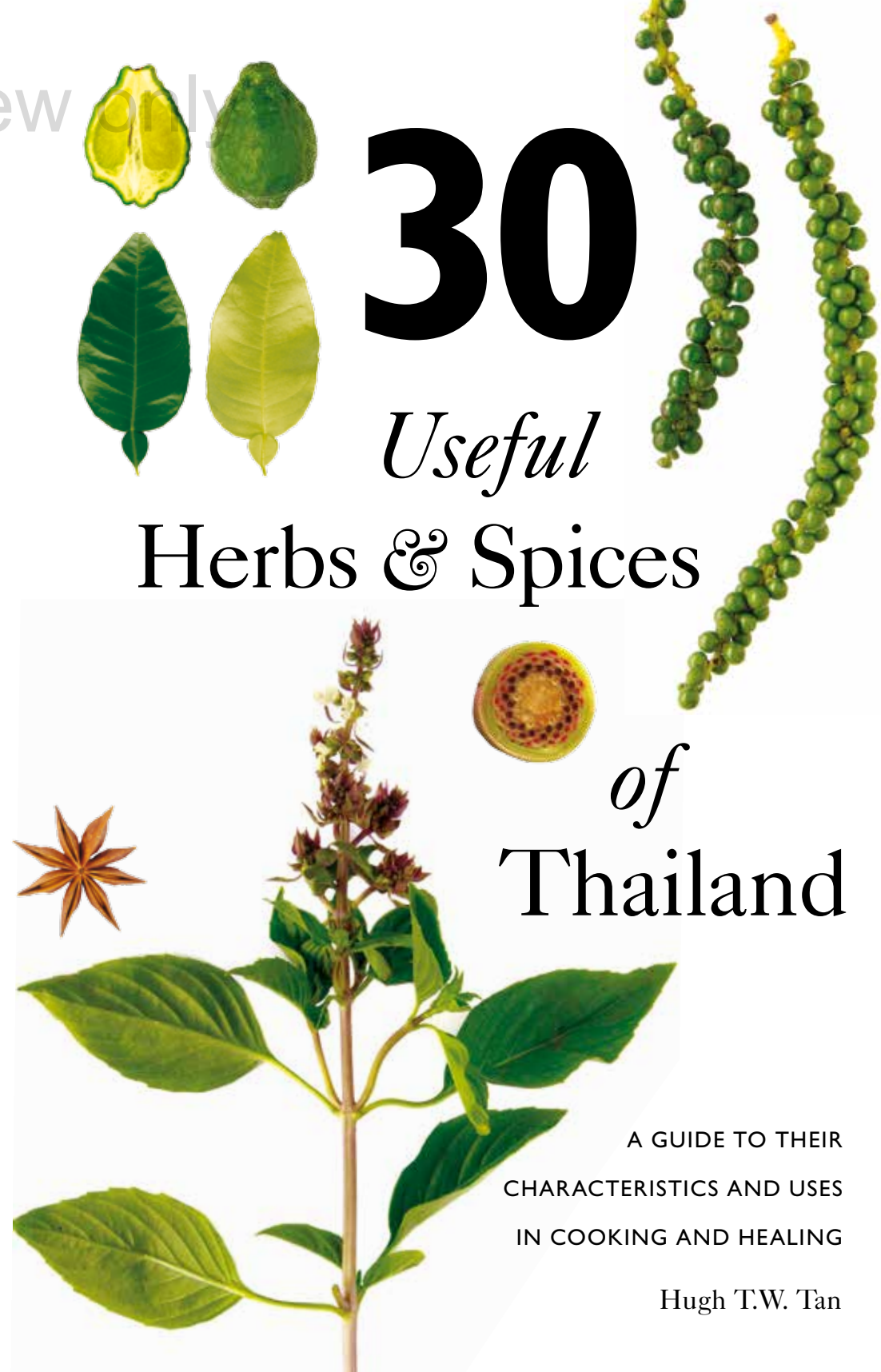
HUGH T.W. TAN

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30 Useful Herbs & Spices of Thailand

A GUIDE TO THEIR
CHARACTERISTICS AND USES
IN COOKING AND HEALING

Hugh T.W. Tan



For Review only



30 USEFUL HERBS & SPICES OF THAILAND

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30

Useful

Herbs & Spices
of Thailand

A GUIDE TO THEIR
CHARACTERISTICS AND USES
IN COOKING AND HEALING

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Introduction



Many would agree that Thai cuisine is one of the best in the world, if not the best. Made with fresh ingredients, Thai food is fragrant, tasty, healthy and full of interesting textures. Its aromas and flavours are largely the result of the unique herbs and spices used. Surprisingly, it is not the number of herbs used but the intelligent combination or blending of tastes that makes Thai food so distinctive and wonderful.

The Southeast Asian nation of Thailand stretches 1,640 km from north to south and 880 km from east to west, with an area of 513,120 sq km. Known as Siam until 1939, it is formally called the Kingdom of Thailand today. Thailand shares borders with Myanmar (formerly Burma) in the west and northwest, Laos in the north and northeast, Cambodia in the east and Peninsular Malaysia in the south. Throughout its history, Thailand has been enriched by many diverse peoples, resulting in an interesting ethnic and religious mix, especially at the border regions. Today's population of about 68 million consists mainly of Thai (95.9%), Burmese (1.3%) and other ethnic groups, mainly hill tribe peoples (0.9%). Most are Buddhists (93.6%), followed by Muslims (4.9%), Christians (1.2%), and those with no religion (0.3%). It is hardly

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surprising that, given the nation's geographical location and history, Thai cuisine has evolved to reflect these different cultures and ethnicities.

The northern half of Thailand has a tropical monsoon climate, with rainy, warm and cloudy weather during the southwest monsoon (mid-May to September) and dry and cooler weather during the northeast monsoon (November to mid-March). The southern half of Thailand (the isthmus), however, has a tropical climate which is always hot and humid. Southern Thais often joke that they have three seasons each year—hot, hotter and hottest! The monsoonal or tropical climate and diverse altitudinal ranges allow a wide variety of tropical and subtropical herbs and spices to grow.

Thailand's terrain consists of a central plain, with the Khorat Plateau in the east, while the rest of the country is mountainous, rising up to 2,576 m at the summit of Doi Inthanon. The central plain is not only geographically central, it is also agriculturally vital because this is where extensive rice cultivation occurs. Rice is the main source of carbohydrate in a typical Thai meal and a wonderful complement to signature spicy dishes—like a white canvas that contrasts wonderfully with bold coloured brushstrokes in a beautiful painting.

The 30 herbs and spices presented here are found in most of the dishes in Thai cooking. Each herb or spice will be described in detail to include its scientific and common names; its unique plant structure and varied uses; tips on storage; common Thai dishes in which it is used; as well as additional notes of interest. This book will be useful to the Thai food enthusiast who might want to know more about the definitive ingredients of Thai cuisine; to the novice cook who might want to know more about these herbs and spices; and finally, to those who might want to discover more about the plants themselves.

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Thai Cuisine

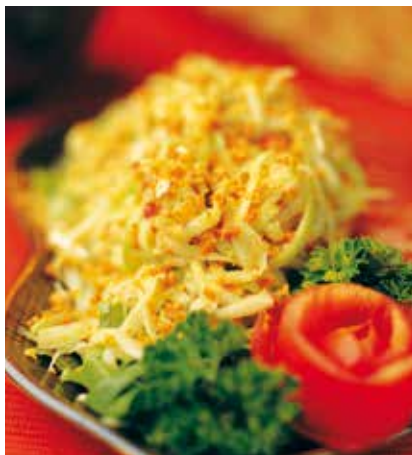
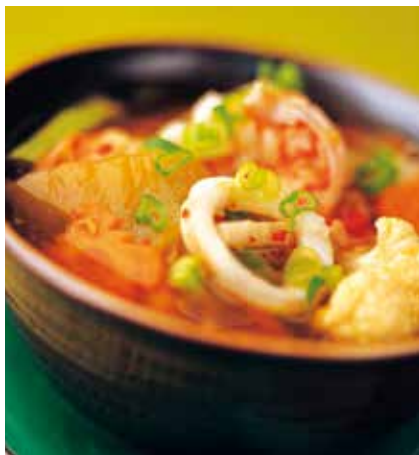
In a very small nutshell, Thai cuisine is a hybrid or fusion cuisine, which has influences from Chinese soup and noodle dishes to Indian curries and Indonesian and Malaysian *satay* (spicy, barbecued and skewered meats)—a reflection of its political history, trade and geography. Yet Thai cuisine retains its own unique identity, like the Thai people who are fiercely proud of their culture and traditions.

Each dish strives for harmony and usually incorporates the contrasting flavours of sweetness, sourness, saltiness and spicy hotness (or pungency). The latter refers to the spicy hotness of chillies for which there is no exact English translation, since 'hot' refers to heat (a physical property) rather than spiciness (a chemical property). The closest English word to this meaning is perhaps 'pungent', which dictionaries define as causing a sharp and irritating sensation. The Thai word *phet* and the Malay word *pedas* more accurately reflect this condition. Not all Thai food is spicy-hot, so there are plenty of dishes which will suit tamer palates.

Thai meals, like those in other Southeast Asian countries, do not come in sequential courses. A meal centres on rice, which is the main source of carbohydrate. Rice is



practically tasteless, so it nicely complements the flavourful dishes that are served with it. Southern Thais prefer eating long-grained, padi-grown rice while northern Thais are partial to the short-grained or sticky glutinous rice grown in dry ground in the hills. The side dishes in Thai cuisine may consist of curries, which are more for flavouring the rice. In general, little beef, pork or chicken is used because meat



is relatively expensive. And because most of the chopping and slicing is done prior to cooking (as in Chinese cuisine), Thais only use what North Americans and Europeans call a dessert fork and spoon at meal times; the knife is generally unnecessary.

Fish is the major source of protein in Thai cuisine, largely because Thailand has a long coastline and numerous rivers and canals that make fishing a key industry. Fish is also cheap since most are caught from the sea or freshwater canals and even in padi fields while some are reared in ponds. Even the main flavouring ingredients usually have seafood in them, such as the strongly flavoured and extremely salty fish sauce (*nahm pla*) and the pungently aromatic prawn paste (*kapee*), both of which are used in practically all Thai dishes.

The other distinctly Thai flavours come from the herbs and spices as well as other plant products, including basil, chillies, coconut milk, coriander, cumin, galangal, ginger, lemon grass, lime juice, palm sugar, pepper, shallots, spring onions, tamarind, turmeric and others. Chillies arrived in Thailand in the early 16th century, brought by Portuguese traders, and have become so central to Thai food that we now associate fiery hot or *phet* food with being authentically Thai. The tangy flavour is provided by lime juice, lemon grass and tamarind juice.

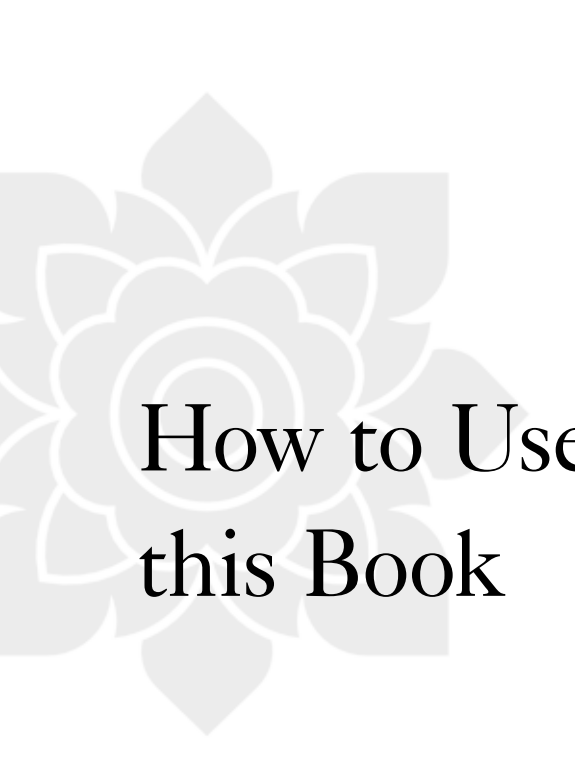
Thai food, like Chinese food, is often stir-fried or steamed in a wok. With stir-frying, the ingredients are flash-fried and sometimes cooked even as the dish is brought to the table to be served! This way, the goodness and vitamins of the ingredients are not destroyed and the dishes make for a healthier or more nutritious meal. Steamed ingredients must also be very fresh, especially meats or seafood, and this is another hallmark of Thai food—the fresh ingredients that are used, such as liberal amounts of raw vegetables as well as herbs and spices to garnish each dish.

What are Herbs and Spices?

Herbs and spices are essentially plant products, or their mixtures, that are used to flavour or season food. Herbs are plants with little or no woody tissue (they are soft-stemmed), the upper portions of which are used fresh or dried to season food. Spices include all other aromatic dried plant products—including arils, barks, flower buds, fruits, leaves, rhizomes and other parts of woody plants such as trees, shrubs and climbers—that are used, likewise, to season food.

Herbs are usually associated with temperate flavouring plants, spices with tropical and subtropical ones. This distinction between herb and spice is debatable and there are instances whereby a herb or spice may be referred to incorrectly. For example, in commerce, the seed of coriander, a herbaceous plant, is called a spice seed when, in fact, it is a herb seed. In this book, all the spices belong to flowering plants or angiosperms, which are characterised by the possession of a special reproductive structure (the flower) and what develops from it (the fruit). In fact, for some of the flavouring plants in this book, the source of the seasoning comes from the flowers or their associated parts.





How to Use this Book

Each of the 30 herbs and spices in this book are described as follows:

1. Common names in English and romanised Thai

The common or vernacular name is the name of the species used in everyday language. Not all plants have common names as some are so rare that only scientists have come across them.

2. Scientific name

All species of biological organisms (animal, bacterium, fungus, plant or protist) have a scientific name. This tends to be much more accurate as naming is usually applied with scientific rigour. Common names, on the other hand, may be coined in any fashion and may also apply to more than one plant, making the name a homonym.

3. Synonyms, if any, of the scientific name

These are useful to know as the species may be referred to by other names in older literature. The application of a scientific name to a particular species can also vary from

author to author so providing the synonym helps us decipher the reference.

4. Family that the species belongs to

All plants belong to a larger family of plants. Plants in the same family are more closely related and have various features in common, ranging from their general shape or form to the form of their individual parts, their biochemistry, physiology and other characteristics.

5. Botanical description of the plant

Highlighted here are the part or parts used to flavour food, including the chemical or chemicals that produce the flavours.

6. Storage of the herb/spice

Described here are simple and efficient methods for storing the herbs and spices so as to increase their shelf life.

7. Common Thai dishes that use the herb/spice

Given the multitude of dishes available, I have listed only the more popular ones.

The herbs or spices are arranged alphabetically by their scientific names, for the simple reason that plants can have many common names, whereas most have only one scientific name. Common names are listed in the index, as are synonyms for the currently accepted scientific names.

For technical terms that are not explained in the text, the glossary at the back of the book provides their meanings.

For Review Only

30 Useful Herbs & Spices



Shallot

COMMON NAMES

shallot, potato onion, multiplier onion;
hom, *hom-daeng*, *hom-lek*

SCIENTIFIC NAME

Allium cepa var. *aggregatum*
(synonyms: *Allium cepa* var. *ascalonicum*,
Allium cepa var. *solanina*)

FAMILY

Liliaceae (lily family)

BOTANICAL DESCRIPTION

This plant consists of a bunch of bulbs which grow together. Each pear-shaped bulb consists of a flattened conical stem at its base bearing fleshy, concentrically overlapping leaves which narrow at the tip of the bulb. There are three to eight cylindrical, hollow leaves which grow in two rows, extending as a sheath from the base of the bulb. The distal portions of the leaves are light to dark green and have a waxy bloom. The height from the bottom of the bulb to the tips of the leaves may reach 50 cm. Fibrous roots arise from the base of each bulb. The flowering shoot,

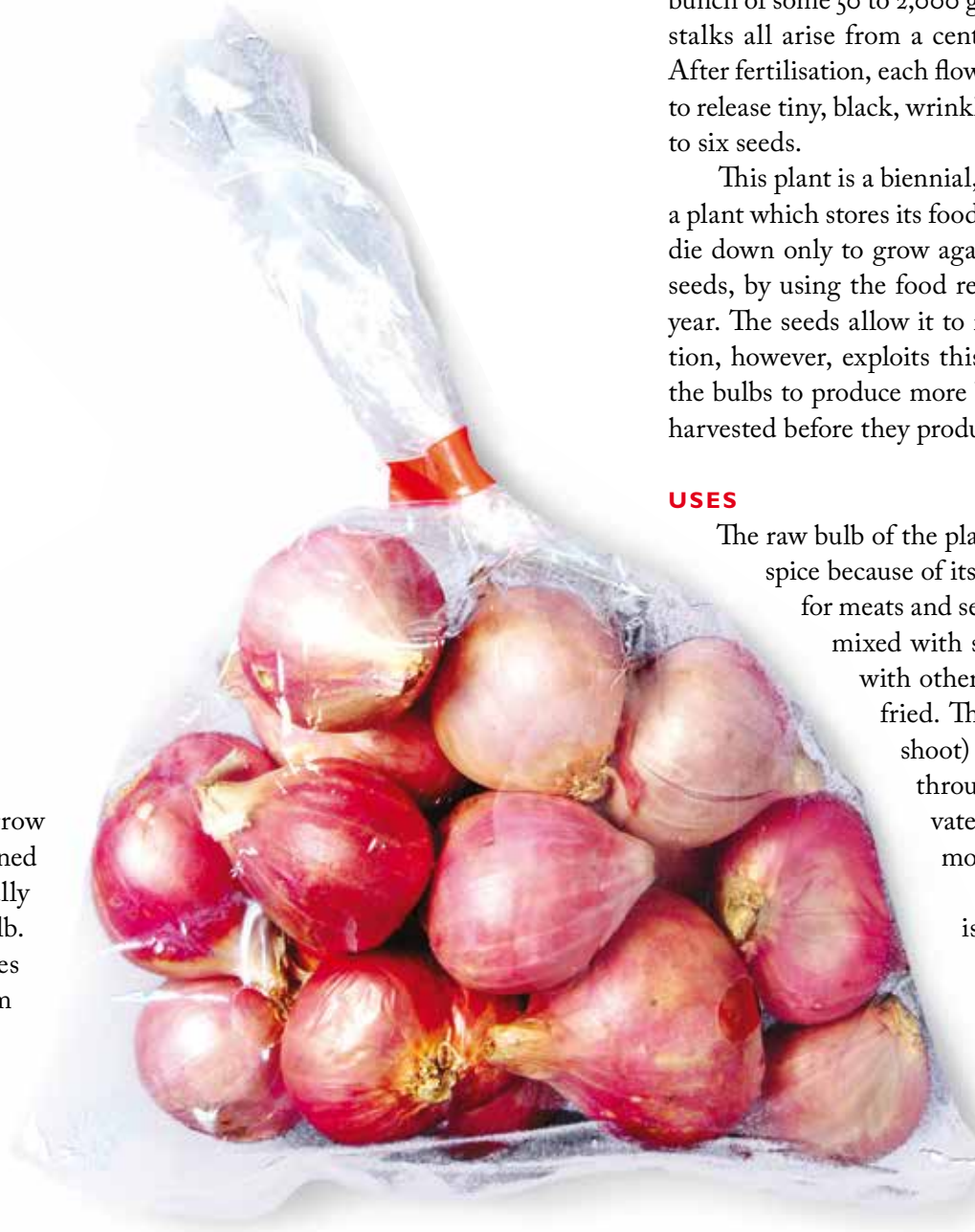
or scape, arises from the bottom of the bulb and is usually taller than the rest of the plant. It consists of a single stalk that becomes hollow at maturity, bearing at the tip a circular bunch of some 50 to 2,000 greenish white flowers. The flower stalks all arise from a central point (known as an umbel). After fertilisation, each flower forms a fruit which splits open to release tiny, black, wrinkled seeds. Each fruit may yield up to six seeds.

This plant is a biennial, meaning the seed will grow into a plant which stores its food in the bulb in the first year, then die down only to grow again, producing flowers, fruits and seeds, by using the food reserves in the bulb in the second year. The seeds allow it to reproduce again. Human utilisation, however, exploits this plant as an annual by planting the bulbs to produce more bulbs (asexually), which are then harvested before they produce flowers.

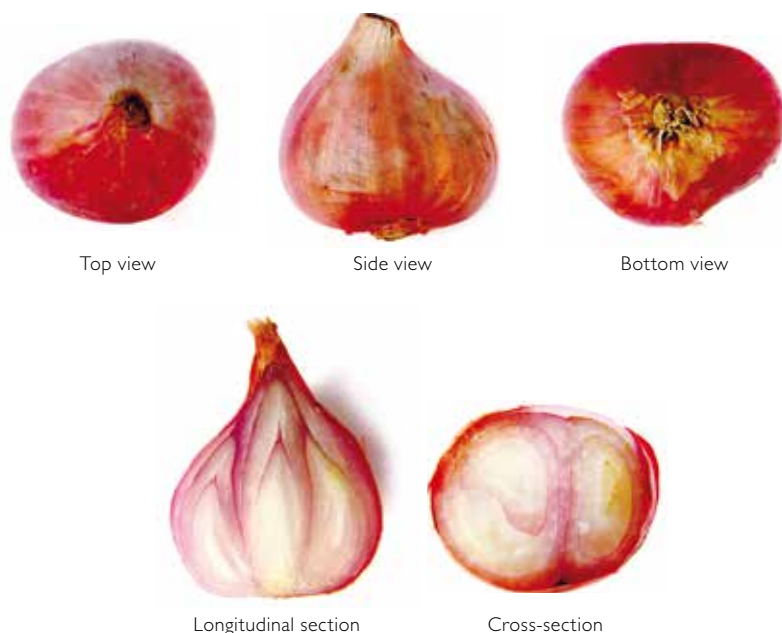
USES

The raw bulb of the plant is used as food, seasoning and spice because of its pungency. When used as a spice for meats and seafood, shallots may be sliced and mixed with soy sauce or ground and blended with other ingredients. It is also pickled or fried. The young inflorescence (flowering shoot) can be eaten as a vegetable. Used throughout the world's cuisines, cultivated *Allium* plants are probably the most indispensable ingredient.

The pungency in shallots is dependant on the amount of S-alk(en)nyl cysteine sulfoxides per unit in fresh weight.



Bag of shallots as sold in markets



Because of their antibacterial properties, shallots are also used in traditional medicine for reducing fevers or healing wounds. Farmers in some areas grow garlic and shallots in plots which were previously used to grow other crops to 'cleanse' the plots of pathogens as part of crop rotation practice. The plant can also be used to lower blood sugar levels and inhibit platelet aggregation when eaten raw or cooked or consumed as an extract or powder.

STORAGE

Shallots are sold with the outer covering dried and can be stored for months in a cool, dry place. The dried outer layers (dried fleshy leaf bases) are removed before use.

The shallot is a natural variant of the onion (*Allium cepa* var. *cepa*) and its existence was first noted in 12th-century France. It has since spread throughout the world.



IN THAI DISHES

Slice the shallots crosswise and separate them into rings or slice lengthwise to have the slices intact. The crosswise segments are often fried till golden brown, and these impart a very flavourful aroma. Fried shallots are used as a garnish in salads and soups. Shallots are essential ingredients in Thai sauces and pastes; especially popular is the basic dipping sauce *nam phrik paw*, where the basic ingredients are roasted to accentuate the blend of spices. The pungency of fresh shallots also gives a nice edge to salads, and here they are sliced lengthwise so that the segments remain intact.

SALADS

- *laab gai* (northeastern chicken salad with mint and lemon grass)
- *laab neua* (northeastern beef salad with mint and lemon grass)
- *yam pla muk* (squid salad)
- *yam ma-muang* (green mango salad)

SAUCES AND PASTES

- *nam phrik oong* (spicy meat and vegetable sauce)
- *nam phrik paw* (roasted chilli paste)
- *phrik gaeng keo wan* (green curry paste)
- *phrik gaeng phed* (red curry paste)
- *poo lon* (cooked crabmeat paste or dip)

SOUPS

- *khao tom* (rice soup)
- *tom yum talay* (hot and sour seafood soup)

OTHER DISHES

- *khao phat supparot* (fried rice mixed with prawn, chicken and pineapple)
- *tom kem kati pla doog* (catfish in turmeric sauce)

2

Onion

COMMON NAMES

onion, common onion, bulb onion;
hom-yai (central Thailand), *hom-huayai*
(Peninsular Thailand)

SCIENTIFIC NAME

Allium cepa var. *cepa*

FAMILY

Liliaceae (lily family)

BOTANICAL DESCRIPTION

The onion plant is similar to the shallot (*Allium cepa* var. *aggregatum*), except that it is larger and has coarser leaves. The mature bulb is also larger and can grow up to 15 cm in diameter, although the shape, size and colour are variable (depending on the cultivated variety).

Like the shallot, the onion plant is a biennial, meaning the seed will grow into a plant which stores its food in the bulb in the first year, then die down only to grow again, producing flowers, fruits and seeds by using the food reserves in the bulb in the second year. The seeds allow it to reproduce again. Human utilisation, however, exploits the onion plant



Onion bulbs

as an annual by planting the bulbs to produce more bulbs (asexually), which are then harvested before they produce flowers.

The earliest records of the onion date back to Egypt in 2700 B.C., hence it is safe to assume that domestication of the species must have started even earlier. The crop was introduced by the Romans to northern and western Europe around A.D. 300 and was subsequently introduced to the Americas, Japan and the tropics. It is of some agricultural importance in Thailand, but not in the parts of Southeast Asia that lie closer to the equator and have wetter climates.

USES

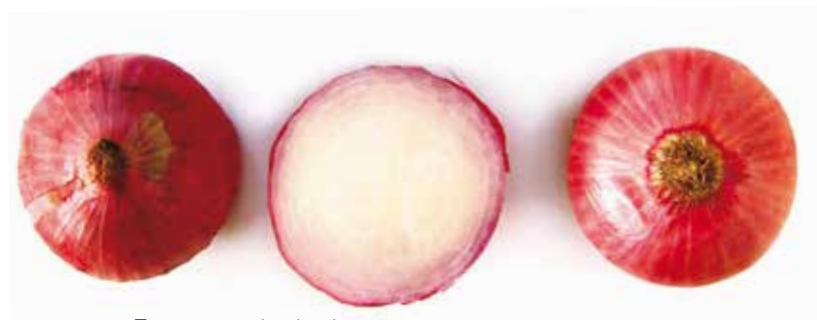
The bulb of the onion plant is used as food, seasoning and spice because of its pungency. It may be used raw, pickled or cooked.

The onion has been used as a diuretic in traditional medicine and recent research has indicated its role in suppressing blood sugar levels and platelet aggregation.

Its flavour and pungency are due to the presence of S-alk(en)nyl cysteine sulphoxides.

STORAGE

Onions are sold with their outer covering dried and can be stored for months in a cool, dry place. The dried outer layers (dried fleshy leaf bases) are removed before use.



Top, cross-sectional and bottom views



A different onion cultivar, showing side view and longitudinal section



Onion plant

**IN THAI DISHES**

Shallots are preferred to onions in Thai cooking, although it is possible to substitute about six to eight shallots with one medium-sized onion. Nonetheless, there is a distinct difference in taste between the two.

DISHES

- *gai swam* ('heavenly' chicken)
- *khao phat phrik* (chilli fried rice)
- *laab gai* (northeastern chicken salad with mint and lemon grass)
- *laab neua* (northeastern beef salad with mint and lemon grass)
- *nahm gaeng chud* (soup or stock)
- *nahm phrik pla* (spicy fish sauce)
- *sen mee Krungthep* (Bangkok rice noodles, supposedly the inspiration for *mee Siam*, a popular dish in Singapore and Malaysia)
- *tom yam koong* (hot and sour prawn soup)

3

Spring Onion

COMMON NAMES

spring onion, scallion, Welsh onion, bunching onion; *ton-hom* (central Thailand), *hom-chin* (Peninsular Thailand)

SCIENTIFIC NAME

Allium fistulosum (synonym: *Allium bouddhae*)

FAMILY

Liliaceae (lily family)

BOTANICAL DESCRIPTION

The spring onion plant is similar in structure to the shallot (*Allium cepa* var. *aggregatum*), except that its bulbs are indistinct, being narrowly oval or oblong in shape, up to 10 cm long and passing into the green portions of the hollow leaves. The bulbs grow together in a cluster. The inflorescence grows at the tip of the plant and consists of a single stalk that bears numerous flowers or bulbils at the tip. After fertilisation, the flowers become fruits bearing tiny black seeds.

USES

The pseudostem region, which is white in colour, rather fleshy and just above the bulb region, consists of concentric



Spring onion as sold in markets



sheaths of the leaf bases and is eaten as a vegetable, usually fried with chicken or fish. When the hollow leaves are sliced crosswise, they become short cylinders. These are used in salads or to flavour soups and other dishes. The spring onion gets its pungency from volatile allyl-sulphides, but compared to the *Allium cepa* crops mentioned earlier (shallot and onion), it is relatively less pungent.

Planting this species in gardens can prevent or reduce termite infestation, and the diluted juice pressed from the plants is used to eradicate aphids in China. Chinese traditional medicine uses this plant to improve the functioning of internal organs and metabolism, to improve eyesight, to aid digestion and to improve recovery from colds, headaches, festering sores and wounds.

Cultivation of the spring onion dates back to at least 200 B.C. in China. It spread to Japan before A.D. 500, after which it spread to Southeast Asia.

STORAGE

The spring onion is mostly used fresh so it should be purchased from markets only when needed. Rinse the plants to remove dirt and other soil particles and trim off dead or dying leaves before wrapping the plant in dry paper towels. Storing the plant in the vegetable crisper of the refrigerator will keep it fresh for about a week, after which the green upper portions of the leaves will turn yellow and/or dry up.



IN THAI DISHES

The spring onion is a very versatile ingredient in Thai cooking. It can be used as a garnish in almost any dish or used to flavour soups, deep-fried dishes, sauces and stir-fries. The spring onion can also be fashioned into a decorative tassel or “flower”.

FRIED DISHES

- *taw huu yart sai tort* (deep-fried bean curd with crab, pork and spring onions)
- *thod mun koong* (deep-fried prawn balls)

RICE DISHES

- *joek* (rice congee)
- *khao phat* (fried rice)
- *khao phat phrik* (chilli fried rice)

SOUPS

- *pet ton hom* (duck and spring onion soup)
- *tom yum talay* (hot and sour seafood soup)

STEAMED DISHES

- *bpu tarlae neung* (steamed crab)
- *pla neung khing* (steamed fish with ginger sauce)

OTHER DISHES

- *nahm pla wan* (sweet fish dip for desserts)
- *pla jian* (fish with ginger sauce)



Spicy Papaya Salad

Som Tam

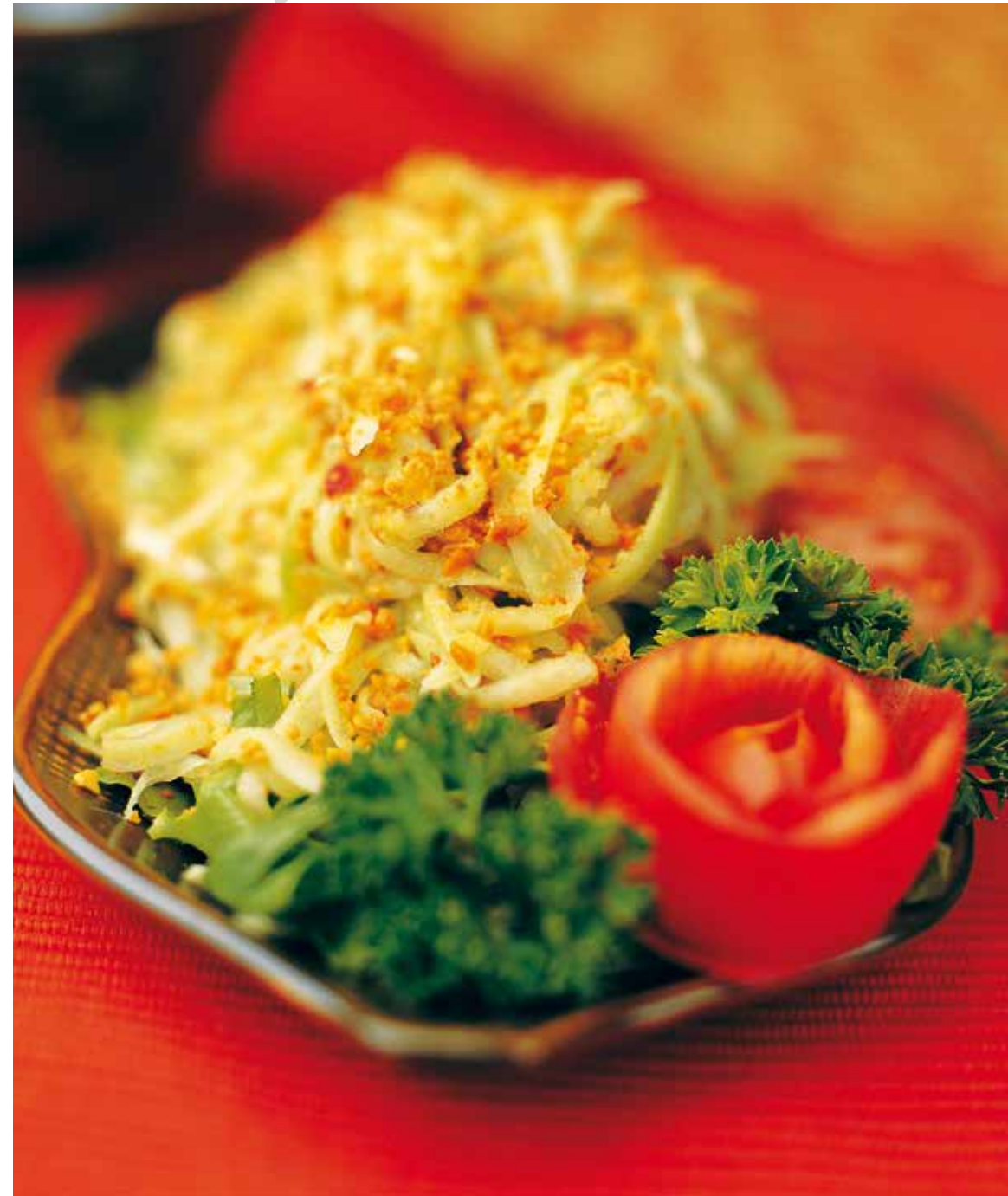
The sourness of the raw papaya makes this salad an ideal way to cleanse the palate and excite the taste buds before or during a meal.

INGREDIENTS

| | |
|----------------------------|--------------------------------------|
| Raw papaya | 4–5 cups, peeled and coarsely grated |
| Garlic | 3 cloves, peeled and chopped |
| Bird peppers | 3, chopped |
| Fish sauce | 1 Tbsp |
| Lemon juice | 2 Tbsp |
| Peanuts | 2 Tbsp, crushed |
| Ground white pepper | to taste |
| Lettuce and cabbage leaves | 5 to 6 pieces |
| Tomatoes | 3, thinly sliced |

METHOD

1. Julienne (or slice into strips the thickness of matchsticks) the papaya using a hand-held grater.
2. Crush the peanuts with a mortar and pestle or in a sealed plastic bag with a roller.
3. Mix the julienned papaya with garlic, bird peppers, fish sauce, lemon juice and peanuts. Toss the salad with tongs to mix well.
4. Serve on a bed of lettuce and cabbage leaves. Garnish with tomato slices.





Deep-fried Marinated Chicken in Screwpine

Gai Hor Bai-toey

The screwpine leaves give additional fragrance and add a unique touch to this delightful dish.

INGREDIENTS

| | |
|-----------------------------|------------------------------|
| Chicken fillet | 500 g, cut into small pieces |
| Sugar | 1 Tbsp |
| Sesame oil | 1 Tbsp |
| Fish sauce | 2 Tbsp |
| Dark soy sauce | 1 Tbsp |
| Screwpine leaves | 15 |
| Cooking oil for deep-frying | 500 ml |

PASTE

| | |
|---------------------|------------------------|
| Garlic | 4 cloves, peeled |
| Ground white pepper | 1 Tbsp |
| Coriander | 3 sprigs, chopped |
| Shallots | 4, peeled |
| Lemon grass | 1 stalk, thinly sliced |
| Preserved soy beans | 1 Tbsp |

METHOD

1. Combine paste ingredients and blend until fine. (Chopping the coriander releases the full flavour of the herb.)



2. Mix the finely ground paste well into the chicken pieces so the flavour goes into the meat. Add sugar, sesame oil, fish sauce, and dark soy sauce and marinate for 30 minutes.
3. Wrap marinated chicken in screwpine leaves. Fold a screwpine leaf to create a cone. Place the chicken inside and tuck the ends of the leaf in through the cone to create a tight parcel. Trim off excess leaf.
4. Deep-fry wrapped chicken for 10–12 minutes or until screwpine leaves turn dark green.
5. Remove from oil and drain. Allow guests to unwrap the chicken parcels on their own.

Glossary

1,8-cineole A liquid, $C_{10}H_{18}O$, with a camphor odour contained in many essential oils (e.g., eucalyptus, bay leaf, cardamom) and used especially as an expectorant and flavouring agent. Also called eucalyptol.

abortifacient A drug or other chemical agent that causes abortion

alcohol A group of hydrocarbon compounds, such as common alcohol (ethyl alcohol, ethanol) found in beer, wine or spirits, in which a hydroxyl group ($-OH$) substitutes for an atom of hydrogen (H)

aldehyde A colourless, mobile and very volatile liquid obtained from alcohol by certain processes of oxidation. The aldehydes are intermediate between the alcohols and acids and differ from the alcohols by having two fewer hydrogen atoms in the molecule. They are highly reactive chemical compounds and are used in making resins, dyes and organic acids. See **ALKANAL**.

alga (plural algae) A group of primitive chlorophyll-containing, mainly aquatic, eukaryotic organisms which lack true stems, roots and leaves, including phytoplankton, seaweeds and stoneworts.

aliphatic Of the open-chain class of organic or methane-derivative compounds

alkaloid Any member of a class of over 3,000 known nitrogen-containing compounds (e.g., caffeine, cocaine, morphine, nicotine), which are typically basic (pH over 7) and produced by plants. These have strong physiological effects on animals (including humans) and are synthesised from amino acid precursors such as tryptophan and tyrosine.

alkanal A chemical belonging to the class of organic compounds called aldehydes. Alkanals have the carbonyl group at the end of the saturated carbon chain and have the functional group $-CHO$.

alkenal A chemical that is the decayed product of an unsaturated fatty acid in plants

allyl-sulphide Any one of the sulphur-containing phytochemicals of the *Allium* species (such as garlic, onions and leeks), which are responsible for their pungency

alternate leaves The condition in which the stem bears one leaf per node

anaesthetic A drug that causes temporary loss of bodily sensations and produces insensibility to pain

analogous Corresponding to something else; bearing some resemblance or proportion

anethole/anethol Aniseed camphor or oil of aniseed, $C_{10}H_{12}O$, which is used commercially for flavouring and perfumery. See **TRANS-ANETHOLE**.

angiosperm A flowering plant. Angiosperms produce seeds that are usually fully enclosed by a fruit that developed from a flower.

annual A plant that completes its life cycle, i.e., from flowering to seed production to death of vegetative parts, within a single growing season. Compare **BIENNIAL**, **PERENNIAL**.

anther Terminal part of a stamen that contains the pollen-containing pollen sacs