



DEPARTEMEN PERDAGANGAN  
REPUBLIK INDONESIA

Indonesian spices

*Exotic Native Products*

*From the Equatorial Tropic*



MINISTRY OF TRADE OF THE REPUBLIC OF INDONESIA







## Introduction

*To introduce Indonesia's potential products which are spread in almost every province, TREDA provides information about those products so that the general public will be more familiar with them. For this purpose TREDA has organized an effort to collect and analyze relevant information related to the potentials and specific advantages of each of the products.*

*This booklet entitled "Indonesian Spices Exotic Native Products from the Equatorial Tropic" presents an almost complete account of one of the Indonesian potential product group, namely spices. The reader is invited to a journey around this exotic plant material group for condiments, starting from their respective botanical properties, cultivation practices up to the end products.*

*Indonesia is for sure the biggest producer of some type of spice as well as provides the most optimum habitat for spices to flourish. The story is enriched with flashy illustrations to convey meaningful and attractive information on each respective spice. A better comprehension of Indonesian spices will lead to a better appreciation on the condiments behind exotic and tasty meals enjoyed by the people around the world.*



*Erwidodo  
Director General  
Trade Research and Development Agency (TREDA)*



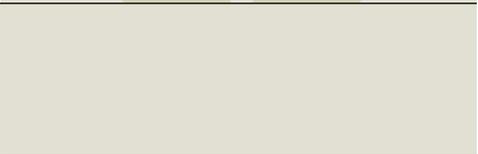
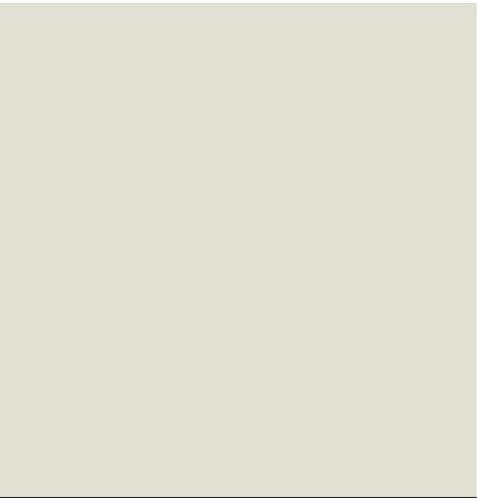
Minister of Trade  
Republic of Indonesia

## Message

*It is our great pleasure to share with you the wealth of our natural products which include bio-resources. As a tropical country situated in the equator, Indonesia is endowed the richest bio-resources. As such Indonesia is the native country for major spices, namely nutmeg and mace as well as clove. In addition, Indonesia provides the best possible ecological conditions for other spices originated from other parts of the world like vanilla, cassia vera/cinnamon, and peppers. For those natural endowments, Indonesia has been known to the world as the Spice Islands Country.*

*As part of our national efforts at improving Indonesian shares in the world trade, in this case spices, this booklet presents background information on each of the five major Indonesian spices pepper, nutmeg and mace, vanilla, cassia vera/cinnamon and clove. Enriched with flashy illustrations, the reader will be acquainted with each plant and its respective spice product. This book is dedicated to those who enjoy the rich flavor of exotic ingredients that will surely enhance the taste of their food.*

*Mari Elka Pangestu*



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Thanks to its equatorial position, Indonesia is covered by primary tropical rainforests with a rich natural history. As such, Indonesia provides optimum climatic conditions and geological features that support floral species of tropical origins which include all of the major spices such as pepper, capsicum (or chilly pepper), vanilla, cinnamon, cloves, nutmeg and ginger. With such specific natural endowments, since thousands of years ago, Indonesia had been well known as the Spice Islands.

# INDONESIA, THE COUNTRY OF THE ORIGINAL SPICE ISLANDS

Indonesia, with more than 17,000 luxuriant tropical islands, is the world's largest archipelago in the world. It lies across the Equator and spans a distance equivalent to one-eighth of the Earth's circumference. The chain of islands extends 5,100 kilometers from the West to the East and 2,000 kilometers from the North to the South. Situated southeast of the Asian mainland and north and northwest of Australia, this string of emeralds is cast between the Indian and the Pacific oceans. This equatorial country represents a unique combination of geographical features and geo-economic position. Indonesia is encompassed by a major juncture of the Earth's tectonic plates and encircled by "the ring of fire" of the world. These factors have created a highly diverse environment that is rich in natural resources (oil, iron, gold, tin, nickel) as well as bio-resources with high levels of both terrestrial and marine biodiversity.

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Historians have noted that Indonesia had become the focus of attention from traders since 300 B.C. or possibly earlier. Chinese, Indian and Arab mer-

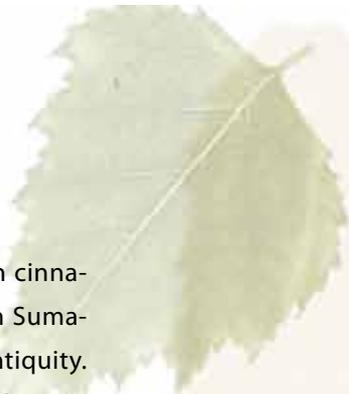
Indonesian country represents a unique combination of geographical features and geo-economic position, this created a highly diverse environment that is rich in natural resources.



With such specific natural endowments, since thousands of years ago, Indonesia had been well known as the Spice Islands

chants followed by European powers sought out the riches of Indonesian major spices of the time, such as cloves and nutmeg. Nutmeg was native to the Banda Islands of the eastern Maluku (Moluccas), and cloves were originally found in the Moluccan islands of Bacan, Halmahera, Ternate, and Tidore. Pepper which originated from the hilly areas of western part of India found a new home in Indonesia centuries ago, as the country provides proper wet tropical climatic condition where the plant can flourish. Vanilla which was the native plant from Mexico also found a suitably proper hot and moist





climate in Indonesia. There was also Indonesian cinnamon, *cinnamomum burmannii*, mostly found in Sumatra, which was also a major part of trade in antiquity. Ginger originated from China was brought to Indonesia to be cultivated on the suitable tropical soils. Chili pepper, which was an indigenous plant of the wet forests of Amazonia and the semi-arid regions of Brazil and Bolivia, found a suitable habitat of tropical climate to grow well. In this booklet, five major Indonesian spices will be profiled: pepper, vanilla, cinnamon and nutmeg, the major Indonesian spice exports, plus clove.



# SPICES, THE CONDIMENT THAT SHAPED HISTORY



The word “spice” was derived from the Latin word species, which meant specific kind, and later, changed meaning into goods or merchandise. Spices are aromatic and pungent products of tropical plants. As a trading term, the word “spice” refers to plants or parts of plants (possibly dried) that are used, among other, to enhance the flavour or taste of human food, as well as other purposes. Different spice uses different parts of related plants: black peppers are dried fruits of the plants (or peppercorns); gingers are the plant’s rhizome (or underground stem); nutmegs use seeds of the plant; mace is the covering of nutmeg seed; cloves are unopened flower buds; cassia and cinnamon use the plant’s barks; cardamom uses fruits and seeds of related plants; turmeric is the plant’s rhizome.



The scents and flavors discharged by spices had fascinated and attracted mankind since antiquity. As far back as 2600 B.C., there are records of the Egyptians feeding spices obtained from Asia to laborers building the great pyramid of Cheops, to give them strength. The Egyptians burned spices as incenses to release fragrances in the rituals to worship their gods. Spices were also used in early Egypt as aromatic body ointments and pomades. These ancient people had been able to extract essential oils from the spices. The Egyptians also used spices for embalming the dead: the body was eviscerated (namely the internal organs were removed), then filled with aromatics (anise, cumin, sweet marjoram, myrrh and cassia), sewn up and placed in sodium solution for, wrapped in linen and smeared with gums.

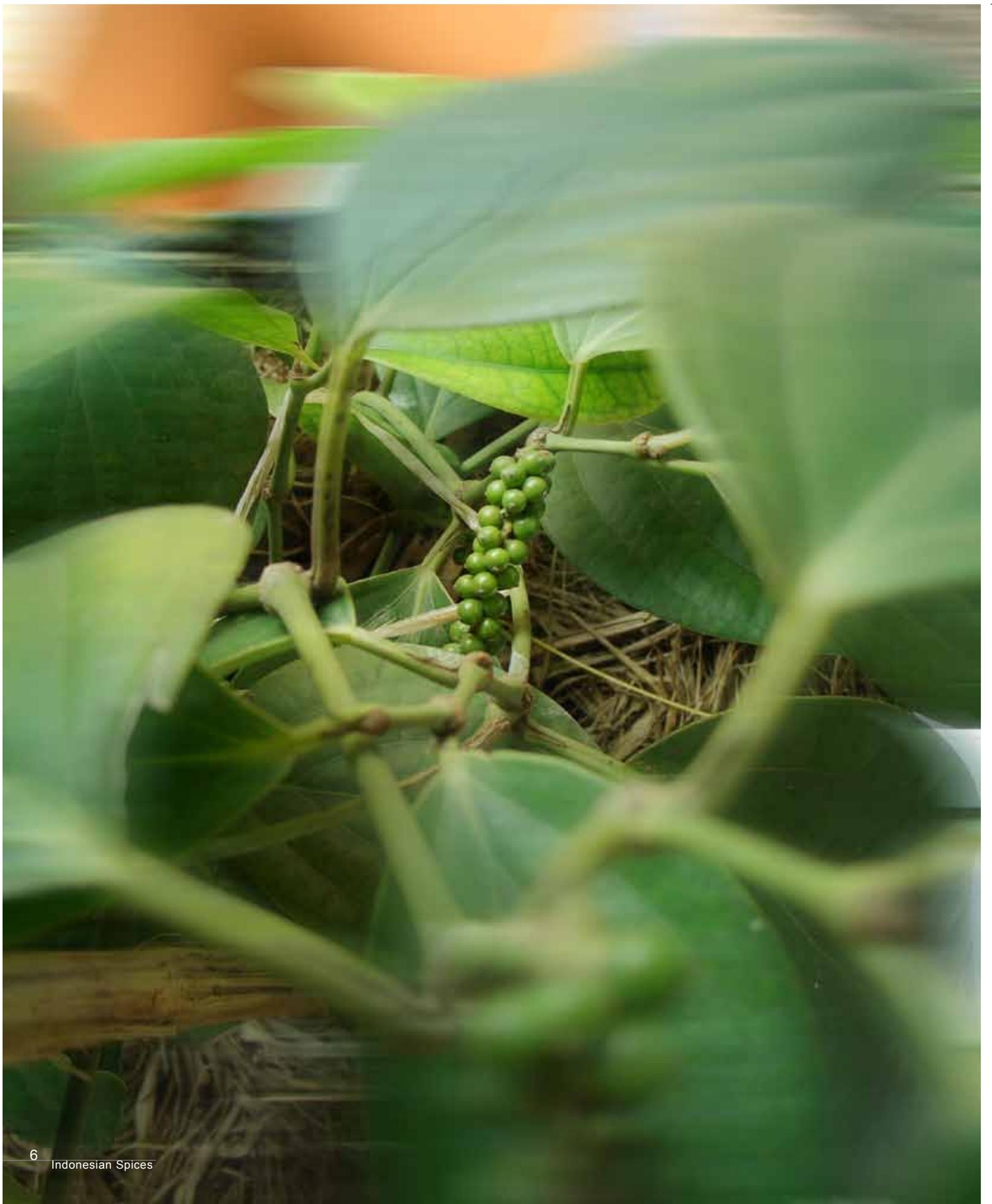


Archeological evidence suggests that cloves were quite popular in Syria not long after, despite the fact that, like nutmeg and mace, they came only from the spice islands country, in what is now Indonesia. Long before the 6th century BC, when Confucius advocated the use of ginger, the Chinese were obtaining spices from the tropics.

Spices have preservative effects, and they also make the poorly preserved foods palatable through masking the appetite-killing stench of decay. In the Middle Ages Europe, after bad harvests and in cold winters the only thing that kept starvation at bay was heavily salted meat with pepper. And there was never enough of it. Thus pepper began the association with gold. In order to call off their siege of Rome in 408 A.D., the Visigoths demanded a bounty in gold, silver and pepper. In the Middle Ages, plague added to the demand for medicinal spices; a German price table from the 14th century sets the value of a pound of nutmeg at seven fat oxen.

In the modern age, through advances in science and technology, we now know that the scents and flavors discharged by spices are due to unique “essential oils”. In natural plants, the essential oils function in the pollination process as fruit-seed attractor and to protect the plant from herbivores. Since most of those compounds have anti-microbial activities, the essential oils are needed to defend plant from pathogens, mostly coming from fungi or bacteria. any of the same substances have other uses in which they are referred to by different terms, e.g. in food preservation, medicine, cosmetics, perfumery or as vegetables. For example, turmeric is also used as a preservative; licorice as a medicine; garlic as a vegetable and nutmeg as a recreational drink. Today people use spices primarily to make good food taste even better. Some perfumes, soaps, and lotions are lightly scented with spices to enhance their fragrances.





# PEPPER

## BOTANICAL PROPERTIES

**P**epper plant belongs to the Kingdom of Plantae, Division of Magnoliophyta, Class of Magnoliopsida, Order of Piperales, Family of Piperaceae, Genus of Piper, Species of *Piper nigrum* L. This plant which is indigenous to the Malabār Coast, South India, is also one of the earliest spices known. Pepper is probably the most widely used spice in the world today, therefore, extensively cultivated in the tropical regions. The plants are cultivated for their fruit, known as a peppercorn, which is, when dried, a small drupe of around five millimeters in diameter, dark red when fully mature, containing a single seed. The same fruit is used to produce either white pepper, or red/pink pepper, or green pepper, made from its berries.

Pepper is a perennial (a plant that lasts for more than two growing seasons) glabrous (or with smooth leaves) woody climber (that is a plant that attaches itself to other plants or objects such as posts and walls as it grows) that can climb up to 10 meter or sometimes even higher. Pepper plants shows variability in appearance. Pepper plant is virtually dioecious (that is having male and female flowers on different plants of the same species) in the wild, but commercial cultivars are generally hermaphroditic (i.e. having both male and female reproductive organs and secondary sexual characteristics).

There is a number of species, the major ones are: *Piper nigrum* species that produce black and white pepper. *Piper cubeba*, Cubeb Pepper, and *Piper Longum*, Long Pepper. The commercial species planted in Indonesia is the *Piper nigrum*.

Pepper is probably the most widely used spice in the world today, therefore, extensively cultivated in the tropical regions



## Brief History

This plant was native to hills of south-western India. Pepper played a very important factor in world trade and was a significant factor that influenced world exploration and history. All was driven by the ceaseless efforts to find its source and control its trade. Pepper was known to Greeks by about 300 BC. It became a well-established item of commerce during the Roman Empire (27 BC – 395 AD).

By early in 17th century, Dutch ships sailed to Indonesia and acquired pepper producing regions in Java and Sumatra, then dominated much of the trade. By 1797, ships from the United States began to trade with Sumatra. By early 19th century, the British organized pepper plantings in Malaysia and Sarawak which became major producers

Pepper is the most widely used condiment. The piperine present in pepper has an anti-inflammatory, antipyretic and diaphoretic action.



when dried, a small drupe of around five millimeters in diameter, dark red when fully mature, containing a single seed

## CULTIVATION

### Suitable Habitat for Pepper

Commercial production of pepper is viable within the equatorial belt of 200 away from equatorial line. Peppers are best planted on well-drained soils with slightly acid to neutral pH (potential of Hydrogen) (namely below 7). The plant will best grow with a temperature ranging from 25 to 35 Centigrade, with the minimum of 15 – 18 Centigrade. However, these low temperatures will affect reproductive growth more than vegetative growth. The plant requires partial shade (“somewhat cloudy”), but not heavy shade. On the other hand, long periods of strong sunlight can be damaging to the plants. Very hot dry winds inhibit growth, may kill young plants, and will adversely affect pollination.

## Planting and pruning

The young pepper plants are planted onto a planting pit with a recommended size of 60 cm x 80 cm x 60 cm. Both rooted and fresh cutting are used planting. Where deadwood supports are used, planting is done 15 to 20 cm away from the support. Soon after planting, shade is provided using cut pieces of coconut leaves or other suitable materials. During the first year, mulching (or a protective covering of organic material laid over the soil around plants to prevent erosion, retain moisture, and sometimes enrich the soil) is done using weeds collected during the slashing from the field.

Regular pruning is practiced in Indonesia starting from the 5th month onwards, thereafter at 3 monthly interval till the plant reaches the top of the support tree, which may take up 21 months. So, a plant requires around 7 to 8 prunings, to maximize the number of fruiting branches. During the time, flower spikes developed in a leaf axil (the space between a leaf or branch and the stem to which it is attached) are removed in order to maximize the number of leaves. Weeding is always done before flowering, in order to maximize nutrients for the pepper plants.



Pepper takes around 4 to 10 months from flowering to harvest, depending upon the variety and the climatic condition

## Harvesting and Processing

Pepper takes around 4 to 10 months from flowering to harvest, depending upon the variety and the climatic condition. First harvest may take 18 to 20 months after planting. Pepper produced in Indonesia comes in two types of products: Black Pepper in Muntok (in the Province of Bangka Belitung) and White Pepper in Lampung. Black Peppers are processed from mature but green berries. The harvested spikes are left in heaps to allow a little fermentation which browns the berries. Then the berries are stripped off from the spikes and placed on mats for drying and turned regularly to allow even drying and avoid fungal problems, also solar powered driers. From 100 kg of green pepper, the yield is about 35 kg of dried black pepper.

White peppers are made of ripe and red berries that are stripped off, placed in bags and then cleaned and soaked in running waters. The clean ripe berries are put into bags that are to be placed in tank of water for up to 14 days to soften and loosen the pericarp (or the fruit wall). Then the berries are trampled slowly but firmly to remove any adhering pericarp and pulp in the bags. Thereafter, the berries are put back into running water to finish washing. Through that process, the softened pericarp is removed and washed. The buff colored berries are the dried to reach down to around 12% of moisture content. A 100kg of ripe berries yields 25 kg of white pepper. Discarded hulls can be used for pepper oil extraction, a berry oil and oleoresin. The white pepper is less pungent and mellow.

# BIOCHEMICAL CONTENTS & USAGE

## Main constituents

Pepper is pungent and aromatic. The pungency is strongest in white pepper and weakest in green pepper, while black and green peppercorns are more aromatic than the white ones. Green peppercorn have a somewhat immature, herbaecous fragrance. Red peppercorns combine a sugary-sweet taste with the mature pungency and flavour of black pepper. Black pepper contains about 3% essential oil, whose aroma is dominated (max. 80%) by mono-terpenes hydrocarbons. Sesquiterpenes make up about 20% of the essential oil. Phenylether (eugenol, myristicin, safrole) are found in traces. Loss of monoterpenes due to bad storage conditions (especially for ground pepper) should be avoided.

The pungent principle in pepper is an alkaloid-analog compound, piperine. Several piperine-analogs have been isolated from black pepper where the acid carbon backbone is partially hydrogenated (piperanine) or two carbon atoms longer (piperettine); amides of piperinic acid with pyrrolidine (piperyline) or isobutylamine (piperlongumine) have also been isolated. Total content of piperine-analogs in black pepper is about 5%.

## Usage

Pepper is the most widely used condiment. It is used domestically and in the food industry. The piperine present in pepper has an anti-inflammatory, antipyretic and diaphoretic action.

## THE EXCEPTIONAL TASTE OF INDONESIAN PEPPER

Lampung White pepper is often used in dishes like light-colored sauces or mashed potatoes. Ground Muntok Black pepper would surely more visibly stand out. Some people consider black pepper spicier. Black pepper do have differing flavor from white pepper due to the presence of certain compounds in the outer fruit layer of the berry that are not found in the seed. Black pepper is used for flavoring of sauces, gravies, meats, snack foods, at all stages of cooking process and as a table condiment.





#### PRODUCTION CENTERS OF PEPPER BY ISLANDS

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Sumatera	127,012	48,939
Java	5,696	1,611
Bali & Nusa Tenggara	536	62
Kalimantan	33,225	20,058
Sulawesi	24,666	9,012
Maluku & Papua	67	4
<b>Total</b>	<b>191,202</b>	<b>79,686</b>

#### MAJOR PRODUCTION CENTERS OF PEPPER BY SUMATERA PROVINCE

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
South Sumatera	10,433	3,662
Bangka Belitung	38,693	16,676
Bengkulu	10,405	3,529
Lampung	65,116	24,418



# VANILLA

## BOTANICAL PROPERTIES

Distinctively flavoured compounds are found in the fruit, which results from the pollination of the flower. Vanilla exerts sweet, aromatic and pleasant favour and taste. Vanilla from Indonesia is characterized by its specific mellow flavour. The fermented vanilla fruit from Indonesia contains the highest percentage of vanillin

**V**anilla plant belongs to the Orchidaceae family of Plant Kingdom. There are about 110 species of Vanilla that have been recorded, but only three variants that are widely commercially cultivated: *Vanilla planifolia* Andrews, *Vanilla pompona* Schiede (West Indian Vanilla) and *Vanilla tahitensis* J.W.Moore (Tahitian Vanilla). In Indonesia, *Vanilla planifolia* Andrews is the most popular cultivated variety.

Vanilla grows as a vine, climbing up an existing tree, pole, or other support. The plant has a long, fleshy climbing stem that attaches itself by aerial rootlets to trees; roots also penetrate the soil. It can be grown in a wood (on trees), in a plantation (on trees or poles), or in a "shader", in increasing orders of productivity. Left alone, it will grow as high as possible on the support, with few flowers. Every year, growers fold the higher parts of the plant downwards so that the plant stays at heights accessible by a standing human. This also greatly stimulates flowering.

The distinctively flavoured compounds are found in the fruit, which results from the pollination of the flower. One flower produces one fruit. *Vanilla planifolia* flowers are hermaphroditic: they carry both male (anther) and female (stigma) organs; however, to avoid self-pollenization, a membrane separates those organs. A simple and efficient artificial pollination method was introduced in mid 19th century. This method is still used today. Using a beveled



sliver of bamboo, a farmer folds back the membrane separating the anther and the stigma, then presses the anther on the stigma. The flower is then self-pollinated, and will produce a fruit. The vanilla flower lasts about one day, sometimes less, thus growers have to inspect their plantations every day for open flowers, a labour-intensive task.

The fruit (a seed pod), if left on the plant, will ripen and open at the end; it will then release the distinctive vanilla smell. The fruit contains tiny, flavourless seeds. In dishes prepared with whole natural vanilla, these seeds are recognizable as black specks.

Like other orchids' seeds, vanilla seed will not germinate without the presence of certain mycorrhizal fungi. Instead, growers reproduce the plant by cutting: they remove sections of the vine with six or more leaf nodes, a root opposite each leaf. The two lower leaves are removed, and this area is buried in loose soil at the base of a support. The remaining upper roots will cling to the support, and often grow down into the soil. Growth is rapid under good conditions.

## Brief History

Vanilla is a native plant of Mexico. It is believed that the Totonac people, who inhabited the Mazantla Valley on the Gulf Coast of Mexico near present-day Vera Cruz, were the first mankind group to cultivate vanilla. In the fifteenth century, Aztecs from the central highlands of Mexico conquered the Totonac, and the conquerors soon developed a taste for the vanilla bean. They named the bean *tlilxochitl*, or "black flower," after the mature bean, which shrivels and turns black shortly after it is picked. Whereas most tribes paid tribute to the Aztecs in the form of maize or gold, the Totonaca sent vanilla beans to the Aztec kings. The Aztecs mixed it with cocoa to make a delicious drink called *Xoco-lall*.

In the early sixteenth century, Hernando Cortez, the Spanish conqueror, invaded Mexico. One of Cortez's lieutenant named Bernal Diaz was believed to be the first European to recognize the flavor and immense value of vanilla, when the Aztec ruler, Montezuma offered him the vanilla flavored cocoa beverage. Cortéz sampled this drink and returned to Spain with reports it contained magical powers. The Spanish explorers called the plant *vainilla*, or "little pod". Europeans mixed Vanilla beans with their tobacco for smoking and chewing, and considered it a miracle drug. The word vanilla entered the English language in mid 18th century through a botanist named Philip Miller who wrote about the genus in his *Gardener's Dictionary*.

## CULTIVATION

Vanilla thrives well in warm and moist climatic conditions with well distributed annual rain fall of 150- 300 cm and a temperature with range of 25- 32° C. Land with gentle slope, light porous soil and good drainage is preferred. Forest soil rich in humus is ideal. The crop requires a dry spell for uniform flowering but very high temperature, strong wind and dry weather are not good for vanilla. It grows well up to 1,000 meters above sea level.

Vanilla plant may propagate through both sexual and asexual methods of propagation. Since the seeds of vanilla are very small sand-like particles, the production of planting materials through seed germination is not practical. Therefore most vanilla planted in Indonesia is propagated by stem cuttings. Any part of the vine can be selected for stem cutting, but vines of current year's growth, which are in vegetative phase excluding the tender shoots at the tip, are most ideal.

The cuttings should be kept in shade for one week before planting in the poly bags. Only one cutting should be planted in each poly-bag and it should be tied to a support made by placing a small twig or stick or split bamboo in the poly bag. The planted cuttings should be provided with shade and watering should be done once in two days. The cuttings will usually take root and grow to a height of about 50 to 75 centimeters in six months time when they are ready for field planting

Normally, vanilla flowers during the third year of planting. Flower bunches are produced in the axils of leaves. Normally it takes 45 to 60 days from flower initiation to opening of flower. Numerous flowers open a few at a time and last but a day during the blooming season, which lasts about two months. Only one or two flowers open in a day. Due to the peculiar structure of the flower, natural pollination is not possible. Artificial pollination has to be done on the same day of the opening of the flower, preferably between 6 to 11 o'clock in the morning. Pollination is carried out by hand with the help of a wooden needle or a tooth pick. The flower is held in the left hand facing the farmer and the thumb is let free. The rostellum of the flower is lifted up using the bamboo splinter held on the right hand to open the stigma and with the help of the left



hand thumb the pollinia is pressed on to the stigma so that pollen grains fall on it. The pollination is carried very carefully to avoid damage the parts which may develop into the beans.

If the pollination process is not successful the flower will fall off the next day. For commercial production, the farmers pollinate only 10 to 12 flowers in a bunch to get quality beans. A skillful farmer can pollinate on an average 1,500 flowers a day.

## Harvesting and Processing

The fruit, a bean pod, reaches its full length of about 20 centimeters in four to six weeks but may take up to nine months to mature. When the beans are fully mature, they develop golden green at the base, the unripe beans can be harvested within two days after this change in color is noticed. Vanilla beans harvested too early will not develop full aroma and sufficient vanillin content during curing which affect quality of the produce. Over-matured vanilla beans will turn fully yellow and would split at the time of curing, affecting the quality of the processed beans.



Fresh vanilla beans have no aroma. Fresh beans have to be properly cured in order to develop vanillin as well as secondary aromatic compounds and other contents responsible for its flavor. The characteristic aroma results from enzymatic action during curing. Before being cured, the vanilla pods need to be “killed” in order to prevent the vegetative tissue from growing.

The method of killing varies; Indonesian farmers apply different methods like sun killing, oven killing, hot water killing, killing by scratching, or killing by freezing.

Curing begins with subjecting the harvested beans to a process of nightly sweating. For that purpose, the pods are held for 7 to 10 days under hot (45°-65°C) and humid conditions; pods are often placed into fabric covered boxes immediately after boiling. This allows enzymes to process the compounds in the pods into vanillin and other compounds important to the final vanilla flavour. This process is done until they become deep chocolate brown in color.

Top quality beans are long, fleshy, supple, very dark brown to black in color, somewhat oily in appearance, strongly aromatic and free from scars and blemishes. Low quality beans are usually hard, dry, thin, brown or reddish brown in color and possess a poor aroma. The moisture content of top grade beans is as high as (30 percent) where as it may be as little as 10 percent in the lower grades.

## BIOCHEMICAL CONTENTS AND USAGE

### Main Constituents

Vanilla exerts sweet, aromatic and pleasant favour and taste. Vanilla from Indonesia is characterized by its specific mellow flavour. The fermented vanilla fruit from Indonesia contains the highest percentage of vanillin, namely 2.75%, compared to the one from México at 1.75% and Sri Lanka at 1.5%. In vanilla pods of exceptionally good quality from Indonesia, the crystallized vanillin may be visible on the surface in the form of tiny white needles (called givre, the French word for "frost").

Besides vanillin (85% of total volatiles), other important aroma components are p-hydroxybenzaldehyde (up to 9%) and p-hydroxybenzyl methyl ether (1%). Even trace components do significantly improve the flavour; about 130 more compounds have been identified in vanilla extract (phenoles, phenol ether, alcohols, carbonyl compounds, acids, ester, lactones, aliphatic and aromatic carbohydrates and heterocyclic compounds). Vanilla additionally contains 25% of sugars, 15% fat, 15 to 30% cellulose and 6% minerals. Water content is unusually high (35%).

### Usage

There are three main commercial preparations of natural vanilla: whole pod, powder (ground pods, kept pure or blended with sugar, starch or other ingredients) and extract (in alcoholic solution). Vanilla extract is prepared by crushing the cured, dried vanilla beans and extracting with alcohol. Vanilla flavor is made from oleoresin vanilla, a dark, semisolid concentration of vanilla extract, and alcohol and water.



Vanilla needs a something high to clamber, in Sulawesi farmer usually use a high tree just like home for vanilla tree.



Vanilla flavouring in food may be achieved by adding vanilla extract or by cooking vanilla pods in the liquid preparation. A stronger aroma may be obtained if the pods are split in two, exposing more of the pod's surface area to the liquid. In this way, the pods' seeds become mixed into the preparation. Natural vanilla gives a brown or yellow colour to preparations, depending on the concentration.

A major use of vanilla is in flavouring ice cream. The most common flavour of ice cream is vanilla, and thus most people consider it to be the "default" flavour. By analogy, the term "vanilla" is used as a synonym for "plain".

The cosmetics industry uses vanilla to make perfume. The essential oils of vanilla and vanillin are sometimes used in aromatherapy.



## THE EXCEPTIONAL TASTE OF INDONESIAN VANILLA

Indonesian Vanilla is one of the best flavorings used in cooking, in the food industry, in patisserie products and for the production of confectionery, desserts, chocolate, ice cream, liqueurs and perfumes.

### PRODUCTION CENTERS OF PEPPER BY ISLANDS

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Sumatera	1,076	195
Java	2,872	409
Bali & Nusa Tenggara	5,680	704
Kalimantan	188	7
Sulawesi	14,795	1,244
Maluku & Papua	818	25

### MAJOR PRODUCTION CENTERS OF VANILLA BY SULAWESI PROVINCE

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
North Sulawesi	5,185	350
Central Sulawesi	1,497	88
South Sulawesi	6,101	750



# CINNAMON

## BOTANICAL PROPERTIES

Indonesian Cinnamon (*Cinnamomum burmanni* Nees Blume) is a species within *Cinnamomum* Genus that belongs to Lauraceae Family, Laurales Order, Magnoliopsida Class, Magnoliophyta Division of the Plantae Kingdom. It is also known with the name of "Padang Cinnamon". The plants is of Malesian bio-geographic distribution. ( Malesian floral sub-kingdom encompasses the islands of Southeast Asia and the Malay Peninsula, extending as far east as the mainland of New Guinea).



*Cinnamomum verum*, from Koehler's Medicinal-Plants (1887)

This species of *Cinnamomum* was first cultivated in Western Sumatra (Sumatra Barat), in the region around the city of Padang. To this day, most Indonesian cinnamon is still grown in Sumatra.

## Brief History

Cinnamon has been known from remote antiquity, and it was so highly prized among ancient nations that it was regarded as a gift fit for monarchs and other great potentates. It was imported to Egypt from China as early as 2000 BC, and is mentioned in the Bible in Exodus 30:23, where Moses is commanded to use both sweet cinnamon (Hebrew *qinnāmôn*) and cassia, and in Proverbs 7:17-18, where the lover's bed is perfumed with myrrh, aloe and cinnamon. It is also alluded to by Herodotus and other classical writers. It was commonly used on funeral pyres in Rome, and the Emperor Nero is said to have burned a year's supply of cinnamon at the funeral for his wife Poppaea Sabina, in 65 AD.

In the Middle Ages, the source of cinnamon was a mystery to the Western world. Arab traders brought the spice via overland trade routes to Alexandria in Egypt, where it was bought by Venetian traders from Italy who held a monopoly on the spice trade in Europe. The disruption of this trade by the rise of other Mediterranean powers such as the Mameluke Sultanate and the Ottoman Empire was one of many factors that led Europeans to search more widely for other routes to Asia.



# CULTIVATION

Cinnamon is harvested by growing the tree for two years and then coppicing it. The next year a dozen or so shoots will form from the roots. These shoots are then stripped of their bark which is left to dry. Only the thin (0.5 mm) inner bark is used; the outer woody portion is removed, leaving metre long cinnamon strips that curl into rolls (“quills”) on drying; each dried quill comprises strips from numerous shoots packed together. These quills are then cut to 5-10 cm long pieces for sale.

# BIOCHEMICAL CONTENTS & USAGE

## Main Constituents

Cinnamon is strongly aromatic; like Ceylon cinnamon, it shows only marginal bitterness and astringency, but it tastes darker and lacks the exciting overtones that are so unique for the Ceylon variety. The Indonesian cinnamon comes close to the best Ceylon quality, and is in fact often traded as “Ceylon cinnamon” (which has better reputation and higher price). The essential oil from Indonesian cinnamon bark (1 to 4%) is dominated by cinnamaldehyde, but does not contain eugenol. Slime content is 8%. In difference to Ceylon cinnamon, the leaves of Indonesian cinnamon also contain cinnamaldehyde. The roots, however, contain camphor as also found in Ceylon cinnamon roots.

## Usage

Cinnamon bark is widely used as a spice. It is principally employed in cookery as a condiment and flavoring material, being largely used in the preparation of some kinds of desserts, chocolate, spicy candies, tea, hot cocoa and liqueurs. In the Middle East, it is often





used in savory dishes of chicken and lamb. In the United States, cinnamon and sugar are often used to flavor cereals, bread-based dishes, and fruits, especially apples; a cinnamon-sugar mixture is even sold separately for such purposes. Cinnamon can also be used in pickling. Cinnamon bark is one of the few spices which can be consumed directly.

In medicine it acts like other volatile oils and once had a reputation as a cure for colds. It has also been used to treat diarrhea and other problems of the digestive system. Cinnamon is high in antioxidant activity. The essential oil of cinnamon also has antimicrobial properties, which aid in the preservation of certain foods. In the media, “cinnamon” has been reported to have remarkable pharmacological effects in the treatment of type II diabetes. Cinnamon has traditionally been used to treat toothache and fight bad breath and its regular use is believed to stave off common cold and aid digestion. Cinnamon is also used as an insect repellent.

## THE EXCEPTIONAL TASTE OF INDONESIAN CINNAMON

Indonesian Cinnamon is one of the most popular flavorings in the world. It is used in flavoring most desserts, including ice cream, custard, cake, candy, and pudding. Cinnamon is also used to enhance the flavor of beverages and sauces.



### PRODUCTION CENTERS OF PEPPER BY ISLANDS

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Sumatera	83,552	98,985
Java	617	679
Bali & Nusa Tenggara	-	-
Kalimantan	1,343	1,336
Sulawesi	532	254
Maluku & Papua	175	105
<b>Total</b>	<b>175</b>	<b>105</b>

### MAJOR PRODUCTION CENTERS OF CINNAMON BY SULAWESI PROVINCE

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
North Sulawesi	67,440	9,889
Central Sulawesi	43,058	8,953
South Sulawesi	49,960	13,013





# NUTMEG AND MACE

## BOTANICAL PROPERTIES

The Roman philosopher Pliny wrote about Nutmeg and Mace in the first century. Indian Vedic literature recommended Nutmeg for bad breath, headaches, and fever and Arabian writing mentions its uses as an aphrodisiac and stomach medicine. The Portuguese found Nutmeg trees in the Molucca Islands, and dominated the Nutmeg and mace trade until the Dutch overcame it in 1602.



**N**utmeg is a tropical dioecious plant that belongs to Myristica Gronov genus, Myristicaceae Family, Magnoliales Order, Magnoliopsida Class, Magnoliophyta Division, of the Plantae Kingdom. The Myristicaceae is a family of evergreen shrubs and trees that comprises about 19 genera and 400 species. The nutmeg is native to the Moluccas Islands in Indonesia. Plants in the family are dioecious, with inconspicuous flowers. The fruit is a yellow drupe having a diameter of about 5 centimeters popularly called the nutmeg apple, which splits into two halves, thereby revealing the seed surrounded by a fleshy outer coating. In plants of the typical genus, which contains about 80 species, this seed is dried to form the culinary spice popularly known as nutmeg. The fleshy orange coat around the seed is peeled off and also dried to form the spice known as mace. The most common nutmeg tree grows to a height of about 15 meters. The most common nutmeg tree in Indonesia is classified as *Myristica fragrans*.

They yield fruit 8 years after sowing, reach their prime in 25 years, and may bear fruit for 60 years or longer. The nutmeg fruit is a pendulous drupe, similar in appearance to an apricot



When the ageing of fruit, fully mature it splits in two

The nutmeg trees may reach a height of about 20 meters. They yield fruit 8 years after sowing, reach their prime in 25 years, and may bear fruit for 60 years or longer. The nutmeg fruit is a pendulous drupe, similar in appearance to an apricot. When fully mature it splits in two, exposing a crimson-colored aril, the mace, surrounding a single shiny, brown seed, the nutmeg. After collection, the aril-enveloped nutmegs are conveyed to curing areas where the mace is removed, flattened out, and dried. The nutmegs are dried gradually in the sun and turned twice daily over a period of six to eight weeks. During this time the nutmeg shrinks away from its hard seed coat until the kernels rattle in their shells when shaken. The shell is then broken with a wooden truncheon and the nutmegs are picked out. Dried nutmegs are grayish-brown ovals with furrowed surfaces. Large ones may be about 30 millimeters long and around 20 millimeters inch in diameter.

## Brief History

The Roman philosopher Pliny wrote about Nutmeg and Mace in the first century. Indian Vedic literature recommended Nutmeg for bad breath, headaches, and fever. Arabian writing mentions its uses as an aphrodisiac and stomach medicine. Middle Eastern traders brought Nutmeg and mace to Southern Europe in the sixth century, and they were well known by the twelfth century from Italy to Denmark. The Portuguese found Nutmeg trees in the Molucca Islands, and dominated the Nutmeg and mace trade until the Dutch overcame it in 1602. Unaware that the spices came from one tree, one Dutch official ordered the Moluccan islanders to plant more mace trees, and fewer Nutmeg trees. Nutmeg production spread to the West Indies, Trinidad, and Grenada under the British in the 1800s.



Fully & brown seed, the nutmeg.

## CULTIVATION

In Indonesia, the most famous production center of nutmeg is in the Moluccas where the trees are cultivated for commercial purposes. The trees may reach a height of about 65 feet (20 metres). They yield fruit 8 years after sowing, reach their prime in 25 years, and bear fruit for 60 years or longer. The nutmeg fruit is a pendulous drupe, similar in appearance to an apricot. When fully mature it splits in two, exposing a crimson-colored aril, the mace, surrounding a single shiny, brown seed, the nutmeg. The pulp of the fruit is eaten locally. After collection, the aril-enveloped nutmegs are conveyed to curing areas where the mace is removed, flattened out, and dried. The nutmegs are dried gradually in the sun and turned twice daily over a period of six to eight weeks. During this time the nutmeg shrinks away from its hard seed coat until the kernels rattle in their shells when shaken. The shell is then broken with a wooden truncheon and the nutmegs are picked out. Dried nutmegs are grayish-brown ovals with furrowed surfaces. Large ones may be about 1 1/4 inches (30 millimetres) long and 3/4 inch in diameter.



The nutmeg trees may reach a height of about 20 meters. They yield fruit 8 years after sowing, reach their prime in 25 years, and may bear fruit for 60 years or longer

## BIOCHEMICAL CONTENTS AND USAGE

### Main Constituents

Both spices are strongly aromatic, resinous and warm in taste. Mace is generally said to have a finer aroma than nutmeg, but the difference is small. Nutmeg quickly loses its fragrance when ground; therefore, the necessary amount should be grated from a whole nut immediately before usage. Nutmeg contains about 10% essential oil, which is mostly composed of terpene hydrocarbons, terpene derivatives (linalool, geraniol, terpineol) and phenylpropanoids (myristicin, elemicin, safrol, eugenol and eugenol derivatives). Of the latter group,

myristicin (methoxy-safrole, typically 4%) is responsible for the hallucinogenic effect of nutmeg. Nutmeg is only weakly hallucinogenic; therefore one needs large dosage (typically, one half to one nut is used for a “high”). However, the large dosage may give rise to very unpleasant side-effects caused by other components of nutmeg, which include prolonged extreme nausea and long-term hypersensitivity to nutmeg. The mentioned hallucinogenic phenylpropanoids themselves are also hepato-toxins and far from harmless for frequent users.

Oil of mace (up to 12% in the spice) contains the same aromatic components as nutmeg, but the total fraction of terpenoids is increased to almost 90% at the cost of the phenylpropanoids (10%). Both nutmeg and mace contain about 2% of lignanes (diarylpropanoids), which are nonvolatile dimers of phenylpropanoid constituents of the essential oil, e.g., dehydrodiisoeugenol.

## Usage

Nutmeg and mace have similar taste qualities, nutmeg having a slightly sweeter and mace a more delicate flavor. Mace is often preferred in light-colored dishes for the bright orange, saffron-like color it imparts. Nutmeg is a flavorsome addition to cheese sauces and is best grated fresh (see nutmeg grater).



In Western cuisine, nutmeg and mace are used especially in potato dishes and in processed meat products they are also used in soups, sauces and baked goods. Japanese varieties of curry powder include nutmeg as an ingredient. Nutmeg is a traditional ingredient in mulled cider, mulled wine, and eggnog.

The essential oil content of the spice is obtained by steam distillation of ground nutmeg and is used heavily in the perfumery and pharmaceutical industries. The oil is colorless or light yellow and smells and tastes of nutmeg. It contains numerous ingredients of interest to the oleo-chemical industry, and is used as a natural food flavoring in baked goods, syrups (e.g. Coca Cola),

beverages, sweets etc. The essential oil replaces ground nutmeg as it leaves no particles in the food. Essential oil is also used in the cosmetic and pharmaceutical industries for instance in tooth paste and as major ingredient in some cough syrups. In traditional medicine nutmeg and nutmeg oil were used for illnesses related to the nervous and digestive systems. Myristicin and elemicin are believed to be the chemical constituents responsible for the subtle hallucinogenic properties of nutmeg oil.

Nutmeg butter is obtained from the nut by expression. It is semi solid and reddish brown in color and tastes and smells of nutmeg. Approximately 75% (by weight) of nutmeg butter is trimyristin which can be turned into myristic acid, a 14-carbon fatty acid which can be used as replacement for cocoa butter, can be mixed with other fats like cottonseed oil or palm oil, and has applications as an industrial lubricant.

## THE EXCEPTIONAL QUALITY AND TASTE OF INDONESIAN NUTMEG & MACE

Indonesian nutmeg and mace are best used as flavoring agent for seasoning of milk-based sauces and other delicate flavored dishes, stewed fruits, processed meats, pudding and cakes. In Indonesia nutmeg is also used to make jam.

### PRODUCTION CENTERS OF NUTMEG BY ISLANDS

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Sumatera	19,985	2,945
Java	4,044	605
Bali & Nusa Tenggara	730	53
Kalimantan	25	1
Sulawesi	15,003	1,074
Maluku & Papua	33,018	3,948
<b>Total</b>	<b>25,429</b>	<b>2,584</b>

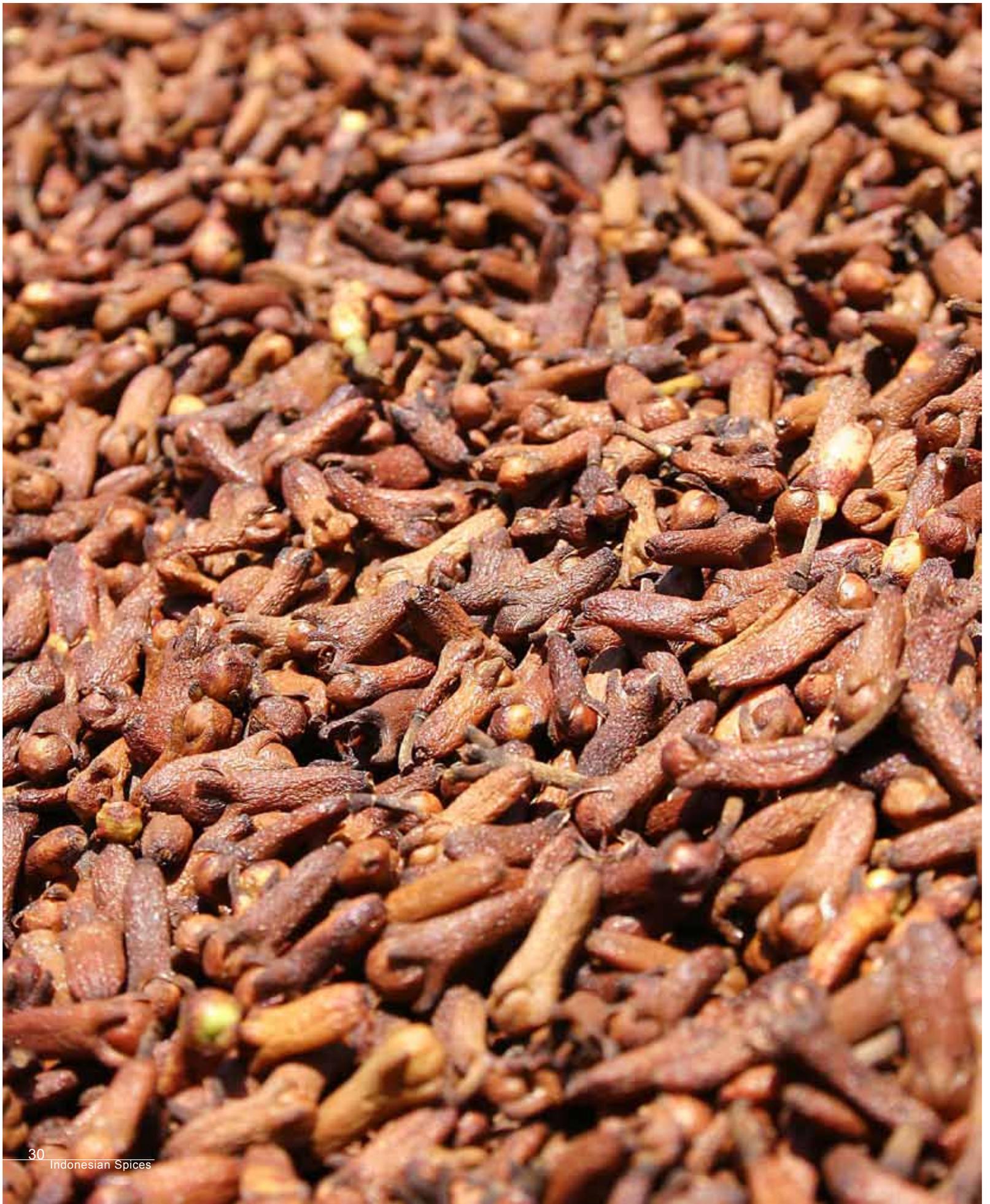


In Indonesia nutmeg is also used to make jam.



### MAJOR PRODUCTION CENTERS OF NUTMEG & MACE BY MALUKU & PAPUA PROVINCE

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Maluku	10,136	1,152
Papua	22,844	2,788



# CLOVE

## BOTANICAL PROPERTIES

Clove is a small, reddish-brown flower bud of the tropical evergreen tree *Syzygium aromaticum* (sometimes *Eugenia caryophyllata*) of the family Myrtaceae. Clove is indigenous to Maluku Utara (North Moluccas), the Spice Islands of Indonesia. The clove tree was of old cultivated on the islands of Ternate, Tidore, Bacan and the West coast of Halmahera. The Dutch extended cultivation to several other islands in the Moluccas, but only after the end of the Dutch monopoly (18.th century), clove trees were introduced to other countries.

The clove tree is an evergreen plant that grows to about 8 to 12 meters in height. Its gland-dotted leaves are small, simple, and opposite. The trees are usually propagated from seeds that are planted in shaded areas. The flowers are small and produced in great profusion in clusters. The leaves, flowers, and bark are aromatic. The ripe fruit resembles an olive in shape but is smaller. It is dark red and is sometimes sold in a dried state under the name mother clove; in this form it has an aroma and flavor similar to those of clove but much weaker. Flowering begins about the fifth year; a tree may annually yield up to 34 kilograms of dried buds. The flower buds are gathered and dried by exposure to the smoke of wood fire and to the rays of the sun. The flower buds are gathered and dried by exposure to the smoke of wood fire and to the rays of the sun.

As early as 200 BC, envoys from Java to the Han-dynasty court of China brought cloves that were customarily held in the mouth to perfume the breath during audiences with the emperor. During the late Middle Ages, cloves were used in Europe to preserve, flavor, and garnish food.



## Brief History



As early as 200 BC, envoys from Java to the Han-dynasty court of China brought cloves that were customarily held in the mouth to perfume the breath during audiences with the emperor. During the late Middle Ages, cloves were used in Europe to preserve, flavor, and garnish food. Clove cultivation was almost entirely confined to Indonesia, and in the early 17th century the Dutch eradicated cloves on all islands except Amboina and Ternate in order to create scarcity and sustain high prices. In the latter half of the 18th century the French smuggled cloves from the East Indies to Indian Ocean islands and the New World, breaking the Dutch monopoly.

## CULTIVATION

In Indonesia, clove is traditionally propagated by seeds extracted from ripe fruits and sown immediately. Seed viability is short, about 2 weeks, and should be sown fresh. Seeds germinate after 1-6 weeks; thereafter, they are transferred into poly-bags filled with potting mixture and allowed to grow. Planting is done in the monsoon at a spacing of 6 m either way. The plant is propagated from seeds sown during August-October. Ripe fruits are de-skinned by soaking in water for 24 hours and rubbing with sand or ash, de-husked seeds should be sown immediately, as their viability deteriorates rapidly. Germination is generally poor and hardly exceeds 70% under the best conditions. Seeds are sown in rows, 12-15 cm apart and 2.5 cm below the soil, in raised nursery-beds, prepared under shade. Germination takes place in 4-5 weeks and seedlings are judiciously watered throughout the period in the nursery. Seedlings are transplanted when they attain a height of c. 25 cm.

Initially, clove trees need shade from banana plants or albizias. Clove trees may live for more than 100 years. In Indonesia, the oldest tree recorded is estimated to have aged for 375 years. Generally, it takes 20-30 years for clove to attain full bearing. In Indonesia, the first bearing is around 6-8 years after planting. The clove trees should be grown in deep, fer-



tile, moist but well-drained soil in full sun or partial shade. The plants thrive well with periodical summer irrigation. The tree fails to flower in very moist conditions. Manuring is required regularly for proper growth and flowering.

Harvesting is carefully done by hand-picking the pink unopened, eugenol rich flower bud. Average tree yield per year is 4 kg but in some years yields of 8-10 kg are recorded. Clove yield is significantly related to tree canopy size which in turn depends on the type of clove, soil and tree age. The buds are then sun dried for 4-6 days i.e. until the floral stalk is dark brown.

## BIOCHEMICAL CONTENTS AND USAGE

### Sensory Quality

Clove is strongly aromatic and very intensive fragrance; fiery and burning taste.

### Main Constituents

Clove contains 14 to 20 percent of essential oil, the principal component of which is the aromatic oil eugenol. The oil itself is dominated by eugenol (70 to 85%), eugenol acetate (15%) and  $\beta$ -caryophyllene (5 to 12%), which together make up 99% of the oil. Cloves are strongly pungent owing to eugenol, which is extracted by distillation to yield oil of cloves. Cloves also contain about 2% of the triterpene oleanolic acid.

### Usage

Clove products are in the form of unopened flower buds on the terminal shoots of the twigs. Cloves are used in spice cookies and cakes. In Indonesia, clove finds its most popular usage as the dominant flavoring agent for kretek, namely the clove aromatized cigarettes. A kretek cigarette may contain up to 50% clove by weight.

Clove also produces essential oil. Clove oil is extracted by water distillation and mixes well with cinnamon, cedar, lavender, rose and bergamot. Essential



oil content in good quality cloves may exceed 15%. The oil is dominated by eugenol (70-85%), eugenol acetate (15%) and beta-caryophyllene (5-12%). Cloves contain about 2% of the triterpene oleanolic acid. Clove oil has been proven useful as supplement to help stomach upsets, chills and impotence. Flower buds chewed to freshen breath or ease toothache pain. Clove oil can also be applied externally for toothache, headache, cold, arthritis and rheumatism. Two little-known compounds in clove oil have shown “strong activity” against bacteria associated with plaque formation and gum disease. The oil is also useful for ulcers, bruises, burns, bronchitis, asthma, minor infections and colic.

## EXCEPTIONAL TASTE OF INDONESIAN CLOVE

The sweet, incense-like aroma of clove has produced one of the most popular indigenous Indonesian product, kretek cigarette. Kretek cigarettes incorporate diverse ingredients based on a blend of tobacco with cloves and clove oil, lending them a distinctive scent. The anaesthetizing effect of clove oil accounts for their historic use to alleviate sore throats and asthma but also results in high tar yields with associated effects. Kretek cigarettes dominate Indonesian market for almost a century.

### PRODUCTION CENTERS OF NUTMEG BY ISLANDS

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
Sumatera	57,458	7,301
Java	134,934	23,616
Bali & Nusa Tenggara	30,517	6,110
Kalimantan	3,832	427
Sulawesi	173,340	34,967
Maluku & Papua	55,314	11,360
<b>Total</b>	<b>455,395</b>	<b>83,781</b>

### MAJOR PRODUCTION CENTERS OF CLOVE BY SULAWESI PROVINCE

PROVINCE	Area Planted (Ha)	Production (ton) in 2006
North Sulawesi	67,440	9,889
Central Sulawesi	43,058	8,953
South Sulawesi	49,960	13,013



## Production Centers on Indonesian Spices



Sumatera is the major production centers for Pepper, particularly in the provinces of Lampung, Bangka Belitung, South Sumatera and Bengkulu . Cinnamon or Cassia Vera is mostly produced in West Sumatera and Jambi provinces. Vanilla is mostly produced in South Sulawesi and North Sulawesi provinces. Whereas clove is produced mostly in Sulawesi, particularly in North Sulawesi, South Sulawesi and Central Sulawesi provinces.



### Major Production Centers of Spices By Province

South Sumatera	Pepper
Bangka Belitung	Pepper
Bengkulu	Pepper
Lampung	Pepper
West Sumatera	Cinnamon
Jambi	Cinnamon
North Sulawesi	Vannila & Clove
Central Sulawesi	Vannila & Clove
South Sulawesi	Vannila & Clove
Maluku	Nutmeg & Mace
North Maluku	Nutmeg & Mace

### Total Area Planted ( Ha)

Pepper	191,202
Vanilla	25,429
Cinnamon/Cassiavera	86,219
Nutmeg & Mace	72,805
Clove	455,395

### Total Production ( Ton) in 2006

Pepper	79,686
Vanilla	2,584
Cinnamon/Cassiavera	100,775
Nutmeg & Mace	8,626
Clove	83,781





## Government Policies and Programs to Support Spices Production & Exports

The Indonesian government has been supporting and encouraging spice production and exports. The Indonesian government strives to help form spices agribusinesses and industries that are efficient, holistic, integrated, sustainable and allow the business owners to prosper. This goal is realized through a number of medium and long term policies. These include assistance to improving farmers' and business owners' production and productivity. Government assisted development of seeding industry, plantation protection systems and the forming of partnerships.

In order to encourage export of spices, Indonesian government also devised a number of strategies. The government policies seek to enhance Indonesian spice exports by, among others, developing products, trade institutions, establishing trade service units, providing technical assistances and holding trade exhibitions for Indonesian products.

Furthermore, in order to realize these policies, several operational steps are to be undertaken by the government :

- a. Improving and encouraging production and productivity by :
  - i. Planting intensification
  - ii. Plant rehabilitation/renewal
  - iii. Business diversification
- b. Empowerment of farmers and institutions by :
  - i. Growing and strengthening farmers institutions
  - ii. Training and supervising to improve farmers' skills
  - iii. Facilitating partnerships
- c. Development of seeding industry  
The development of seedling centers according to local/specific advantages, with attention of potential and climates.
- d. Controlling Pests and Plant Diseases
  - i. Preventive and curative and measures
  - ii. Biological control of diseases and pests

# INDONESIAN SPICES IN FIGURES

## Export of Spices Commodities

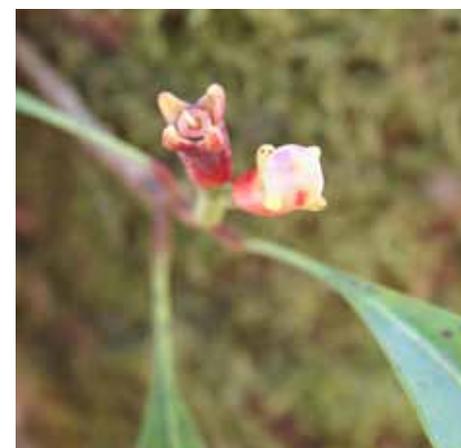
in USD

No	COMMODITIES	2002	2003	2004	2005	2006	2007*
1	PEPPER NEITHER CRUSHED NOR GROUND GREEN	929,899	443,175	3,258,822	1,215,535	2,066,149	1814,749
2	WHITE PEPPER, NEITHER CRUSHED OR GROUND	3,517,880	6,388,707	2,812,636	37,740	0	0
3	WHITE PEPPER, CRUSHED OR GROUND	55,450,573	48,322,088	26,838,113	34,613,051	40,927,723	27,261,389
4	BLACK PEPPER, NEITHER CRUSHED OR GROUND	1,911,502	1,339,182	290,700	10,568	13,843	0
5	BLACK PEPPER, CRUSHED OR GROUND	27,255,681	36,709,675	20,980,745	21,986,305	34,006,894	20,171,517
6	PEPPER CRUSHED OR GROUND	131,250	241,752	1,455,722	574,163	243,035	746,742
7	VANILLA WHOLE	16,210,119	14,966,272	9,989,418	2,957,561	2,643,226	926,501
8	OTHER VANILLA	2,950,243	4,308,963	6,512,280	2,389,051	3,248,472	1,556,725
9	CLOVES	22,940,255	22,114,363	13,738,495	10,548,880	17,455,717	3,774,964
10	CLOVES ( WHOLE FRUIT OR STEAM )	3,032,977	2,815,031	2,298,592	4,367,506	6,077,056	945,170
11	NUTMEG IN SHELL	3,565,781	8,024,358	8,462,048	6,764,379	4,317,060	2,729,699
12	NUTMEG SHELLED	17,181,187	13,916,659	20,671,992	15,600,872	21,014,004	14,189,037
13	MACE	9,507,660	7,344,049	10,531,838	25,473,501	25,562,066	8,134,196
14	CINNAMON	17,414,457	16,473,617	22,885,445	20,333,115	25,493,790	14,264,656

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

Indonesia exports 14 types of spices to the world and the top 5 spices exports are white & black peppers, vanilla, cinnamon, nutmace & mace and clove.



# Exports by Country of Destinations

## PEPPER

HS 09041110, 09041121, 09041129, 09041131, 09041139, 09041200

in USD

COUNTRY	2002	2003	2004	2005	2006	2007*
JAPAN	2,099,669	2,710,869	2,557,724	2,711,309	3,112,452	2,855,284
USA	25,565,930	26,781,983	17,250,298	18,170,649	28,084,481	20,150,645
SINGAPORE	42,767,955	40,645,185	18,860,285	21,796,935	22,207,159	7,843,678
MALAYSIA	509,212	148,594	81,537	96,523	689,435	968,656
INDIA	2,353,138	4,321,368	3,022,573	2,535,292	4,846,383	1,887,189
THE NETHERLAND	4,203,010	4,326,200	2,667,296	3,918,146	3,790,150	4,725,350
OTHERS	11,697,871	14,510,380	11,197,025	9,208,508	14,527,584	11,563,595
TOTAL	89,196,785	93,444,579	55,636,738	58,437,362	77,257,644	49,994,397

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

## VANILLA

HS 09050010, 09050090

in USD

COUNTRY	2002	2003	2004	2005	2006	2007*
USA	12,568,946	10,159,838	9,112,763	2,975,400	3,953,530	1,890,313
GERMANY	3,376,208	2,402,491	3,230,094	1,794,853	1,174,394	297,745
MALAYSIA	67,410	21,267	1,993,195	31,888	290,404	23,402
OTHERS	3,147,798	6,691,639	2,165,646	544,471	473,370	71,766
TOTAL	19,160,362	19,275,235	16,501,698	5,346,612	5,891,698	2,483,226

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

## CINNAMON

HS 09062000, 09061000

in USD

COUNTRY	2002	2003	2004	2005	2006	2007*
USA	7,875,231	8,207,549	9,076,163	8,534,758	13,211,424	6,864,132
THE NETHERLAND	1,629,095	1,602,169	2,347,852	3,148,967	1,855,409	850,301
BRAZIL	2,137,487	602,419	3,508,553	805,337	670,513	451,651
SINGAPORE	804,882	699,892	508,209	767,820	1,146,029	317,959
GERMANY	522,779	617,233	885,973	889,195	950,982	448,146
THAILAND	516,714	407,679	759,592	717,262	871,240	747,364
MALAYSIA	384,429	506,185	1,051,850	584,885	643,872	453,872
OTHERS	3,543,840	3,830,491	4,747,253	4,884,891	6,144,321	4,131,231
TOTAL	17,414,457	16,473,617	22,885,445	20,333,115	25,493,790	14,264,656

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

## NUTMEG & MACE

HS 09081010, 09081020, 09082000

in USD

COUNTRY	2002	2003	2004	2005	2006	2007*
SINGAPORE	8,576,964	8,041,500	7,811,087	11,033,003	5,821,900	2,156,971
THE NETHERLANDS	8,064,323	3,722,901	8,924,749	7,477,009	9,799,252	5,141,936
VIETNAM	478,369	3,752,742	2,671,464	6,687,706	7,099,465	2,632,431
JAPAN	1,714,643	2,029,578	2,912,544	3,129,856	3,554,674	1,880,098
USA	2,762,599	2,649,851	1,567,666	1,751,307	4,545,952	1,478,435
GERMANY	839,492	837,483	1,011,875	2,359,783	3,057,935	1,915,443
BELGIUM	1,015,007	750,732	1,125,077	1,764,775	1,909,166	2,646,608
ITALY	537,158	285,278	930,698	446,064	802,067	430,353
FRANCE	154,195	115,205	70,926	533,145	1,126,664	255,462
OTHERS	5,937,936	6,911,286	12,025,058	11,481,883	11,432,378	5,466,890
TOTAL	30,254,628	29,285,066	39,665,878	47,838,752	50,893,130	25,052,932

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

## CLOVE

HS 09070010, 09070090

in USD

COUNTRY	2002	2003	2004	2005	2006	2007*
SINGAPORE	14,244,743	8,162,176	4,594,303	3,527,885	6,630,992	389,541
INDIA	2,508,406	5,949,334	7,028,365	4,132,172	9,433,390	681,396
SAUDI ARABIA	551,815	3,135,835	1,007,535	2,120,028	2,371,795	1,885,140
VIETNAM	871,755	2,976,796	238,891	1,072,082	306,964	55,933
MALAYSIA	1,622,651	257,532	317,443	248,012	657,575	257,938
UNITED ARAB EMIRATES	929,145	562,108	453,655	432,954	673,137	32,667
CHINA	515,534	189,525	13,711	63,167	541,975	-
OTHERS	4,729,183	3,696,088	2,383,184	3,320,086	2,916,945	1,417,519
TOTAL	25,973,232	24,929,394	16,037,087	14,916,386	23,532,773	4,720,134

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007



## Exports by Province

### PEPPER

HS 09041110, 09041121, 09041129, 09041131, 090411200, 09041200

in USD

No	PROVINCE	2002	2003	2004	2005	2006	2007*
1	Bangka-Belitung	54,607,246	46,728,456	20,810,986	26,246,129	22,538,509	11,561,196
2	Lampung	27,793,632	37,079,999	23,628,669	22,935,964	33,731,865	22,135,221
3	DKI Jakarta	3,654,422	8,481,381	10,042,107	7,846,291	19,134,534	14,112,850
4	East Java	1,399,173	722,823	629,587	1,021,306	1,432,005	1,224,656
5	North Sumatera	520,901	152,534	142,684	45,762	29,195	17,558
	OTHERS	1,221,411	279,386	382,705	341,910	391,536	942,916
	TOTAL	89,196,785	93,444,579	55,636,738	58,437,362	77,257,644	49,994,397

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007



### VANILLA

HS 09050010, 09050090

in USD

No	PROVINCE	2002	2003	2004	2005	2006	2007*
1	Bali	7,823,608	4,694,182	6,861,859	1,740,146	1,335,551	631,044
2	DKI Jakarta	3,896,084	5,410,906	5,664,044	1,814,861	1,414,237	443,871
3	East Java	4,649,461	4,834,618	1,273,900	739,160	717,773	622,555
4	Central Java	895,767	806,202	140,968	885,653	2,080,020	759,237
5	OTHERS	1,895,442	3,529,327	2,560,927	166,792	344,117	26,519
	TOTAL	19,160,362	19,275,235	16,501,698	5,346,612	5,891,698	2,483,226

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

**CINNAMON**

in USD

**HS 09062000, 09061000**

No	PROVINCE	2002	2003	2004	2005	2006	2007*
1	North Sumatra	11,658,354	7,795,753	15,164,708	14,640,827	16,384,492	7,895,477
2	West Sumatra	4,019,714	6,454,835	5,298,554	3,767,652	6,124,825	3,491,396
3	DKI Jakarta	1,057,600	1,496,340	1,849,473	1,438,036	2,052,461	2,186,898
4	Lampung	115,180	496,844	276,742	243,060	525,820	588,969
5	OTHERS	563,609	229,845	295,968	243,540	406,192	101,916
	TOTAL	17,414,457	16,473,617	22,885,445	20,333,115	25,493,790	14,264,656

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

**NUTMEG & MACE**

in USD

**HS 0908101, 09081020, 09082000**

No	PROVINCE	2002	2003	2004	2005	2006	2007*
1	East Java	19,939,164	18,624,122	20,102,020	29,394,902	26,367,705	12,081,850
2	DKI Jakarta	5,282,328	3,245,459	11,207,248	12,562,809	16,112,986	10,306,381
3	Central Java	1,873,189	2,050,109	2,192,002	2,475,142	4,652,950	1,476,116
4	South Sulawesi	2,231,905	4,499,852	3,525,689	1,605,848	1,067,933	369,139
5	North Sumatra	721,188	464,815	2,185,723	1,574,735	2,194,107	400,267
6	OTHERS	206,854	400,709	453,196	225,316	497,449	419,179
	TOTAL	30,254,628	29,285,066	39,665,878	47,838,752	50,893,130	25,052,932

\* Jan-June 2007

Source: Indonesia's Central Bureau of Statistics, 2007

**CLOVE**

in USD

**HS 09070010, 09070090**

No	PROVINCE	2002	2003	2004	2005	2006	2007*
1	East Java	13,563,530	15,543,083	8,843,097	10,972,489	14,339,527	1,786,725
2	Central Java	5,687,567	5,830,573	4,856,771	2,146,472	4,023,949	1,825,870
3	DKI Jakarta	1,310,336	1,316,795	906,015	645,874	2,173,299	497,441
4	South Sulawesi	2,669,583	364,418	246,766	155,880	1,289,659	125,557
5	North Sumatra	689,708	448,534	620,845	794,772	1,453,474	227,068
6	North Sulawesi	1,555,946	1,228,829	255,525	3,800	90,600	975
7	OTHERS	496,562	197,162	308,068	197,099	162,265	256,498
	TOTAL	25,973,232	24,929,394	16,037,087	14,916,386	23,532,773	4,720,134

\* Jan-June 2007

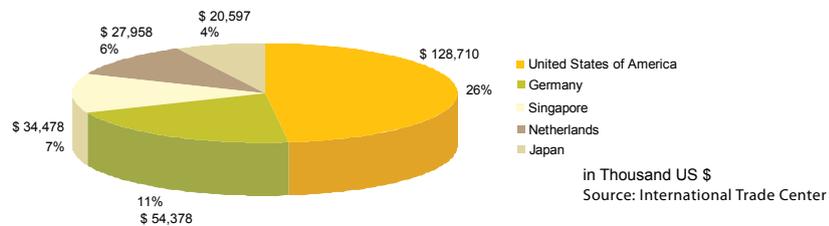
Source: Indonesia's Central Bureau of Statistics, 2007

# WORLD TRADE

## Major Importing Countries 2006

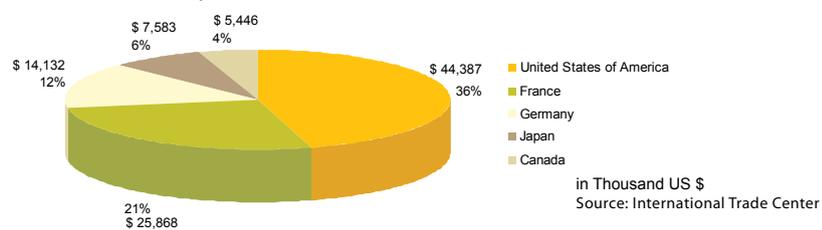
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HS 09041110, 09041121, 09041129, 09041131, 09041139, 09041200



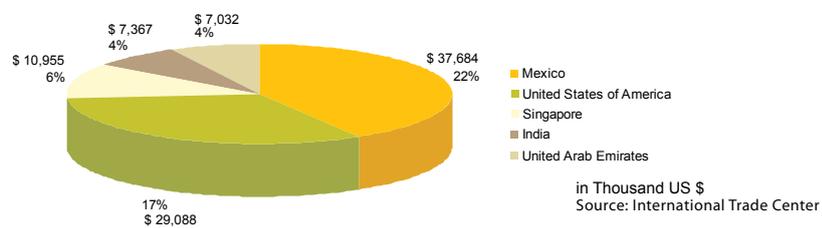
### VANILLA

HS 09050010, 09050090



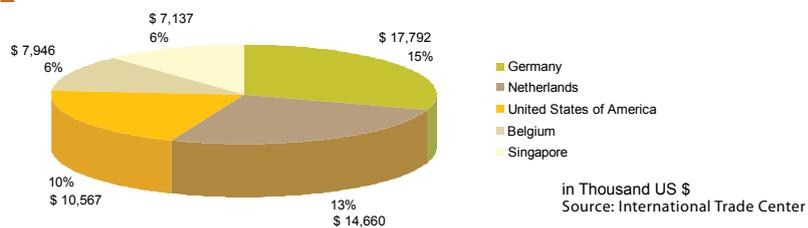
### CINNAMON

HS 09062000, 09061000



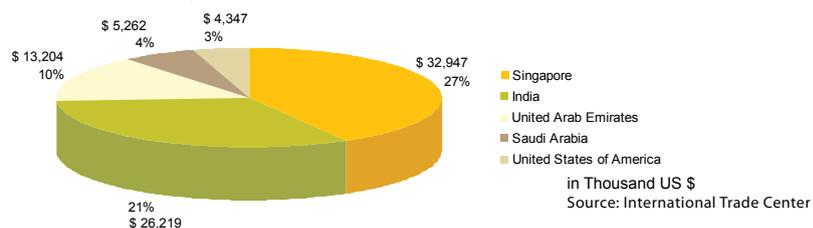
### NUTMEG & MACE

HS 09081010, 09081020, 09082000



### CLOVE

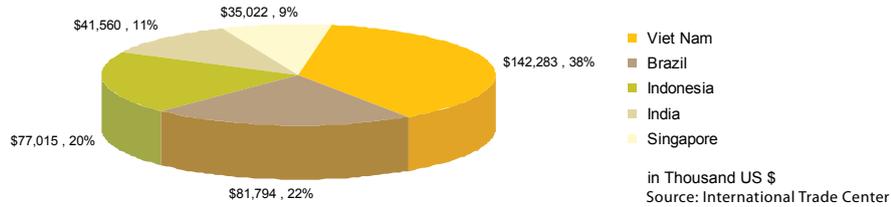
HS 09070010, 09070090



# Major Exporting Countries 2006

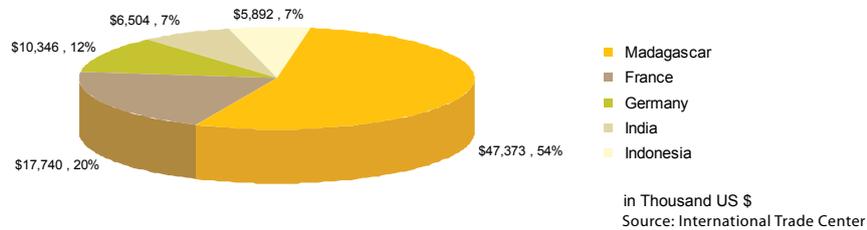
HS 09041110, 09041121, 09041129, 09041131, 09041139, 09041200

**PEPPER**



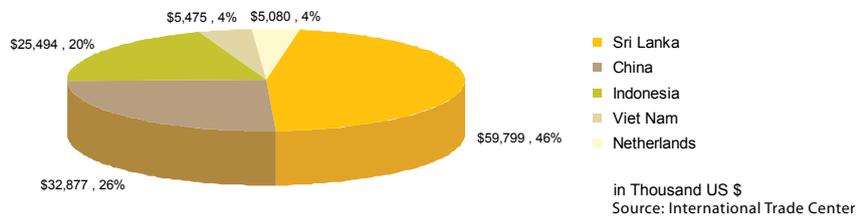
HS 09050010, 09050090

**VANILLA**



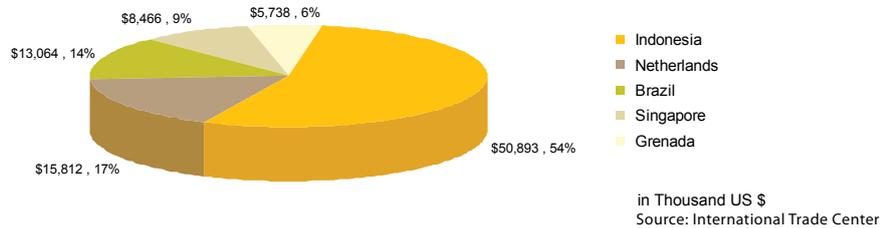
HS 09062000, 09061000

**CINNAMON**



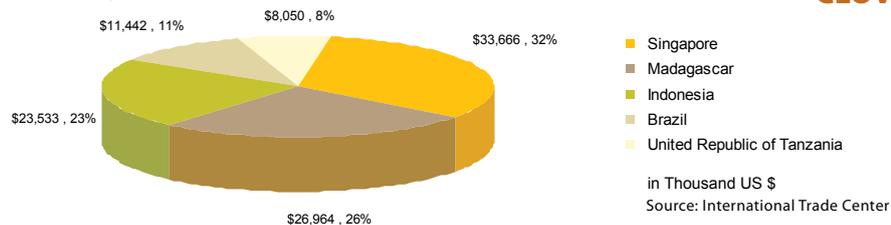
HS 09081010, 09081020, 09082000

**NUTMEG & MACE**



HS 09070010, 09070090

**CLOVE**



## Exporters of Spices

### Panen Baru, Cv

Jl. Koba No. 76a Desa Dul Kec. Pangkal Pinang  
Phone : (62-717) 439227  
Fax : (62-717) 432609  
Email : gmlpn@cbn.net.id  
Products: White Pepper - Coffee, Tea, Mate & Spices

### Pasura Bina Niaga, Pt

Jl. Batanga Arau No. 44, Padang  
Phone : (62-751) 26448  
Fax : (62-751) 23992  
Products: Cinnamon, Coffee, Tea, Mate & Spices

### Pawani,

Jl. Kol. Sugiono No. 14-f, Medan  
Phone : (62-61) 4511332  
Fax : (62-61) 4517045  
Products: Coffee Beans - Coffee, Tea, Mate & Spices

### Perkebunan Nusantara VII (Persero), Pt

Jl. Teuku Umar No. 300, Bandar Lampung  
Phone : (62-721) 702233  
Fax : (62-271) 707353  
Website : Www.ptpn7.com  
Email : Pemasaran@ptpn-7.com  
Products: Black Tea - Coffee, Tea, Mate & Spices

### Pinang Mas, Cv

Jl. Bypass Lama Km 12 Batung Tebal, Padang  
Phone : (62-71) 765999  
Fax : (62-71) 64846  
Email : Pinangmas@telkom.net  
Products: Cardamoms - Coffee, Tea, Mate & Spices

### Putra Bhineka Perkasa, Pt

Jl. Pulau Moyo No. 5, Br. Ambengan, Pesanggaran, Denpasar Bali  
Phone : (62-361) 720589  
Fax : (62-361) 720667  
Web Site: Www.kopibali.com  
Email : Putrabp@indosat.net.id  
Products: Coffee Powder - Coffee, Tea, Mate & Spices

### Putra Darma, Cv

Jln. Terminal No. 115 Tangenon, Aceh  
Phone : (06-51) 21251  
Email : Syamsul\_psl@indo.net.id  
Products: Coffee Beans - Coffee, Tea, Mate & Spices

### Putrabali Adyamulia, Pt

Wisma Eka Jiwa Ruko No. 3, Jl. Mangga Dua Raya Blok N, Jakarta  
Phone : (62-21) 6257168  
Fax : (62-21) 6257140  
Email : Pbjakt@telkom.net  
Products: Robusta Coffee - Coffee, Tea, Mate & Spices

### Rasdi & Co, Cv

Jl. Adinegoro No. 38, Simpang Lalang, Padang  
Phone : (62-751) 4855134  
Fax : (62-751) 481492  
Website : Www.rasdico.com  
Email : Info@rasdico.com, Rasdico@indosat.net.id  
Products: Cinnamon (Cassia Vera), Mate & Spices

### Rejeki Abadi, Ud

Jl. Ir. Sutami No. 26 (Toll), Makasar  
Phone : (62-411) 512257  
Phone : (62-411) 515604  
Email : Udraup@indo.net.id  
Products: Cloves - Coffee, Tea, Mate & Spices

### Rempahsari, Cv

Jl. Pulau Air No. 30, Padang  
Phone : (62-751) 22854, 25761, 27214  
Fax : (62-751) 28453, 21336  
email : Rempah@indosat.net.id, Raymond@indosat.net.id  
Products: Cinnamon Coffee, Tea, Mate & Spices

### Roda Mandala Dwipa, Cv

Jl. Ir. Sutami, Way Laga, Panjang, Bandar Lampung  
Phone : (62-721) 350321, 350421  
Fax : (62-721) 351221  
Products: Robusta Coffee - Coffee, Tea, Mate & Spices

### Romeco Multialam, Pt

Jl. Sam Ratulangi li No. 16, Manado  
Phone : (62-431) 866324, 866529  
Fax : (62-431) 863865  
email : Romecomultialam@yahoo.co.uk  
Products: Vanilla Beans - Coffee, Tea, Mate & Spices

### Sam Karya Abadi, Pt

Jl. Pertahanan No. 128 Patumbak, Deli Serdang  
Phone : (62-61) 7866710  
Fax : (62-61) 7867977  
Products: Coffee Beans - Coffee, Tea, Mate & Spices

### Santos Jaya Abadi, Pt

Jl. Raya Gilang No. 159, Kec. Taman Sepanjang, Sidoarjo  
Phone : (62-31) 7882359  
Fax : (62-31) 7882377  
Products: Coffee Powder - Coffee, Tea, Mate & Spices

### Sari Hasil Utama, Cv

Jl. Sungai Poso Lr. 77 No. 1, Makasar  
Phone : (620411) 312619  
Fax : (62-411) 312619  
Products: Coffee - Coffee, Tea, Mate & Spices

### Sari Incofood Corporation, Pt

Jl. Bukit Barisan No. 3b  
Phone : (62-61) 4561015, 4561016  
Fax : (62-61) 4524968, 4535842  
email : Sifmdn@indosat.net.id  
Product : Coffee - Coffee, Tea, Mate & Spices

### Sarimakmur Tunggal Mandiri, Pt

Jl. Kompos No. 110-a, Desa Puji Mulyo, Kecamatan Sunggal, Binjai  
Phone : (62-61) 8454291-93  
Fax : (62-61) 8454294  
email : Spranoto@idola.net.id  
Products: Pepper - Nutmeg, Cloves, Mace & Spices

### Sarimunik Mandiri, Pt

Jl. Kayu Manis X No. 53, Jakarta  
Phone : (62-21) 8565006  
Fax : (62-21) 85906836  
Website : www.sarimunik.com  
email : Customerservice@sarimunik.com  
Products: Curry - Coffee, Tea, Mate & Spices

### Sarinah (Persero), PT

Jl. M.h.thamrin No.ii, Jakarta  
Phone : (62-21) 31923008 Ext. 344  
Fax : (62-21) 31927692  
Website : www.sarinah.co.id  
email : Export@sarinah.co.id  
Products: Tea - Coffee, Tea, Mate & Spices

### Sekawan, Cv

Jl. Orde Baru No. 4, Sumatera  
Phone : (62-61) 8467526  
Fax : (62-61) 8467252  
email : Sekawan@indosat.net.id  
Products: Black Pepper - Coffee, Tea, Mate & Spices

### Sidikalang, Cv

Jl. Cemara Boulevard Complex Cemara Asri Blk G-1 No. 5, Medan  
Phone : (62-61) 6628829, 6628831  
Fax : (62-61) 6627030  
email : Sidikalang@indosat.et.id  
Products: Coffee Beans - Coffee, Tea, Mate & Spices

### Sulutco Jaya Abadi, Pt

Jl. Kenjeran 555, Surabaya  
Phone : (62-31) 3893828  
Fax : (62-31) 3811226  
Products: Coffee Beans - Coffee, Tea, Mate & Spices

### Sumatera Specialty Coffee, Pt

Komp. Taman Setia Budi Indah Blok Pp 57 A, Medan  
Phone : (62-61) 8200233  
email : Sscberastagi@yahoo.com, Dans.cbi@plasa.com  
Products: Coffee - Coffee, Tea, Mate & Spices

**Sumatera Tropical Spices, Pt**

Jl. Raya Padang Bukittinggi Km. 24 Pasar Usang,  
Padang Pariaman  
Phone : (62-751) 482500  
Fax : (62-751) 482700  
email : Stspadang@padang.wasantara.net.id  
Products : Cinnamon - Coffee, Tea, Mate & Spices

**Sumber Muncul, Cv**

Jl. Durian No. 665 Binagriya, Pekalongan  
mobile : 0815-48091979  
Phone : (62-285) 411448  
email : Sumber\_muncul@telkom.net  
Products : Coffee Beans - Coffee, Tea, Mate & Spices

**Suryo, Cv**

Jl. Kalimati Kulon No. 22, Surabaya  
Phone : (62-31) 3533452  
Fax : (62-31) 3533451  
Products : Coffee Beans - Coffee, Tea, Mate & Spices

**Sutraco, Cv**

Jl. Kali Kecil li No. 11, Padang  
Phone : (62-751) 32643, 27057  
Fax : (62-751) 27057  
email : Sutraco@ranahminang.mega.net.id  
Products : Areca Nuts - Edible Fruits & Nuts

**Teluk Intan, Pt**

Komp. Delta Building Blok B 1-2, Jl. Suryopranoto No.  
1-9, Jakarta  
Phone : (62-21) 3808345  
Fax : (62-21) 3809420  
Products : Black Pepper - Coffee, Tea, Mate & Spices

**Tgk Aceh, Others**

Jln. Tgk Menara Iii Gicau Menara, Aceh  
Phone : (06-51) 7429268  
Fax : (06-51) 26390  
Products : Coffee Powder - Coffee, Tea, Mate & Spices

**Timur Raya, Cv**

Jl. Sultan Hasanudin No. 1, Fakfak, Papua  
Phone : (62-956) 22340, 22793  
Fax : (62-956) 23201  
Products : Nutmeg - Coffee, Tea, Mate & Spices

**Tri Sumber Makmur Indah, Pt**

Jl Hr. Rasuna Said Kav. 1 Menara Imperium Lt. 17 C,  
Jakarta  
Phone : (62-21) 8282888  
Fax : (62-21) 8355888  
Website : www.svannafoods.com  
email : Anshuman.bose@svannafoods.com,  
Info@svannafoods.com  
Products : Coffee Beans - Coffee, Tea, Mate & Spices

**Triojaya Indah Andalas, Pt**

Jl. Padang By Pass Km 7,5 No. 40, Padang  
Phone : (62-751) 62008  
Fax : (62-751) 61789  
Website : www.triojaya.com  
email : Triojaya@rumahminag.net.id  
Products : Cinnamon (Cassia Vera), Mate & Spices

**Tripanca Group, Pt**

Jl. Laks. Malahayati No. 27 -28, Teluk Betung, Bandar  
Lampung  
Phone : (62-721) 474555  
Fax : (62-721) 474715  
Products : Coffee Beans - Coffee, Tea, Mate & Spices

**Tripperindo, Pt**

Br. Tegaltamu, Batubulan, Sukawati, Bali  
Phone : (62-361) 297150  
Fax : (62-361) 297151  
email : Info@tripperindo.com  
Products : Vanilla Beans - Cloves, Mate & Spices

**Tropical Andalas, Pt**

Jl. Pasar Hilir No.34 P.o.box 95, Padang  
Phone : (62-751) 31394, 32303  
Fax : (62-751) 31393  
email : Andalas@padang.wasantara.net.id,  
Tropan@ranahminang.net.id  
Products : Cinnamon (Cassia Vera), Mate & Spices

**Ujang Jaya, Cv**

Jl. Tangguk Bongkar Ix No. 90 B, Medan  
Phone : (62-61) 8453929, 7325352  
Fax : (62-61) 8454070, 7325352  
email : U74ng@indosat.net.id  
Products : Coffee Beans - Coffee, Tea, Mate & Spices

**Ulek Kareng, Ud**

Jln. Lamgapang No. 2, aceh  
Phone : (06-51) 7400106  
Products : Coffee Powder - Coffee, Tea, Mate & Spices

**Vitaher, Pt**

Jl. Jagalan No. 30, Semarang  
Phone : (62-24) 3514522, 3548605  
Fax : (62-24) 3518772  
Website : www.vitaher.com, www.bali-javaspa.com  
email : Dewrina@yahoo.com, Sales@vitaher.com  
Products : Essential Oil from Spices

**Asosiasi Cassia Vera Indonesia (AECI)**

Jl. M.H. Thamrin 21, Padang  
Phone : (0751) 33261

**Asosiasi Eksportir Lada Indonesia (AELI)**

Gedung AEKI Lt. 3  
Jl. R.P.Soeroso No 20, Jakarta 12170  
Phone : 3100516 Fax : 3914068  
Email : aeli@kadin.net

**Asosiasi Pala Indonesia - API**

Jl. Majapahit B 1A 3/4 No. 18, Jakarta Pusat

**Asosiasi Eksportir Pala Indonesia - AEPI**

Jl. Hayam Wuruk 103-104, Jakarta Barat 11160  
Phone : (021) 6297539, 6292508  
Fax : (021) 6297432

**International pepper Comunity**

4th Floor, LINA Building, Jln. H.R. Rasuna Said Kav.  
B7. Kuningan, Jakarta 12920  
Phone : (62-21) 5224902, 5224903 (General)  
5227764 (ED direct)  
Fax : (62-21) 5224905  
Website : www.ipcnet.org  
email : ed@ipcnet.org

**Induk Koperasi Rempah, Jamu & Hasil Hutan**

Jl. Raya Cibinong Kav. 39  
Phone : (021) 875 2042

**Asosiasi Petani Cengkeh Indonesia (APCI)**

Jl. Cempaka Putih Timur XIII A No. 5. Jakarta Pusat  
Phone : (021) 420 6924

**Asosiasi Petani Lada Indonesia (APLI)**

Jl. Meranti gg Kopi No. 279 Pinang  
Bangka - Belitung  
Phone : (021) 875 2042

# Ministry of Trade of Republic of Indonesia

Jl. M.I. Ridwan Rais No.5  
Building I - 3th Floor  
Jakarta 10110 INDONESIA  
Phone : [62-21] 384 8667, 345 6318,  
3841961 Ext1200  
Fax. : [62-21] 384 6106  
E-mail. : mendag@depdag.go.id

(62-21) - 3848666,384 1961 Ext.1384  
(62-21)-3441759 sesjen@depda9-90.id  
(62-21) - 384 8662, 3841961 Ext.1226  
(62-21) - 384 8662  
irjen@depdag.go.id

## Secretary General

Jl. M.I. Ridwan Rais No.5 Building I, 4th Floor Jakarta  
Pusat  
Phone Facsimile E-mail

## Inspectorate General

Jl. M.I. Ridwan Rais No.5 Building I, 10th Floor Jakarta  
Pusat

## Directorate General of Domestic Trade M.I. Ridwan

Rais No.5 Building I, 6th Floor Jakarta 10110 - INDO-  
NESIA  
Phone : (62-21) - 3858183,385 8193,  
Ext.1105, 1103  
Fax : (62-21) - 3857338  
E-mail. : dirJen-pdn@depdag.go.id

## Directorate General of Foreign Trade

Jl. M.I. Ridwan Rais NO.5 Building ii, 1st Floor Jakarta  
10110 - INDONESIA  
Phone : (62-21) - 3858204, 3860940  
Ext.1192, 1104  
Fax : (62-21) - 3858190  
E-mail : djdaglu@depdag.go.id

## Directorate General of International Trade Coop- eration Jl. M.I. Rldwan Rais NO.5 Building I, 5th Floor, Jakarta 10110 - INDONESIA

Phone : (62-21) - 344 0408,3858171  
Ext.1004  
Fax : (62-21) - 385 8185  
E-mail. : djkpi@depdag.go.id

## National Agency for Export Development (NAFED)

Jl. Kramat Raya No. 172  
Jakarta 10430 - INDONESIA  
Phone : (62-21) - 31900901,310 0569  
Ex1.413  
Fax : (62-21) 319 04914  
E-mail. : kabpen@depdag.go.id

## Commodity Future Trading Regulatory Agency (COFTRA)

Gedung Bumi Daya Plaza 4th Floor  
Jl. Imam Bonjol NO.61  
Jakarta 10310 -INDONESIA  
Phone : (62-21) 315 6315  
Fax : (62-21) 315 6135  
E-mail. : kabappebti@depdag.go.id  
Website : www.bappebti.go.id

## Trade Research and Development Agency (TREDA)

Jl. M.I. Ridwan Rais NO.5 Building  
17th Floor  
Jakarta 10110 - INDONESIA  
Phone : (62-21) 344 0060, 384 1961  
Ext.1360  
Facx : (62-21) 345 2393  
E-mail : kabalitbang@depdag.go.id

## Indonesian Commercial Attache

### BANGKOK

Indonesian Embassy  
600-602 Pittcburi Road, Rajthevi, Bangkok 10400, Thailand  
Telp. : (66-2) 2551264, 2553135 ex. 123  
Fax. : (66-2) 2551264, 2551267  
E-mail : atdag-tha@depdag.go.id  
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