

AN INTRODUCTION TO FLAVOR AND TASTE

Flavor- the quality of something that affects the sense of taste, 2. the blend of taste and smell sensations evoked by a substance in the mouth, 3. characteristic or predominant quality.

Taste- the one of the special senses which perceives and distinguishes the sweet, sour, bitter or salty quality of a dissolved substance and is mediated by taste buds on the tongue, 2. the objective sweet, sour, bitter or salty quality of a dissolved substance as perceived by the sense of taste, 3. a sensation produced by the stimulation of the sense of taste, in conjunction with that of touch and smell.

UNDERSTANDING FLAVOR

We describe our flavor world as being composed of four basic tastes: sweet, sour, salty and bitter. To this, Aristotle added astringent, pungent and harsh. At other times, qualities such as urinous, acrid and putrid were also hypothesized. Scientists continue to debate whether the modern four cover all experiences; a growing body of data suggests that the sweet/sour/salty/bitter paradigm may be an oversimplified model for a process so complex that we are only on the brink of understanding it.

Flavor is perceived by taste “buds”—groups of taste receptor cells that cluster together like the segments of an orange. The average adult has 10,000, although the number varies widely. (Inexplicably and unjustly, cows have 25,000 even though they only eat grass). Taste buds can be found not only on the tongue, but on the soft palate, pharynx, larynx and epiglottis as well.

From the 1940's through the 1990's, virtually every basic biology textbook—and certainly every wine book—perpetuated the myth that taste buds were grouped in the mouth according to the specialty. Correspondingly, the tongue was “diagrammed” into separate areas where certain tastes were registered: sweetness at the tip; sourness on the sides and bitterness at the back of the mouth.

In the 1980's and 1990's, research at Yale, Monell Chemical Senses Center and The University of Connecticut, as well as elsewhere, demonstrated that the “tongue diagram” explanation of how we taste was patently false. Instead, leading taste researchers such as Dr. Linda Bartoshuk of the Yale University School of Medicine found that taste buds are not specialized and do not congregate according to specialty. Sweetness, saltiness, bitterness and sourness can be tasted everywhere in the mouth, although they may be perceived at slightly different intensities at different sites on the tongue.

Though taste buds are not specialized, the taste receptor cells that make up taste buds are. A taste receptor cell, in other words, may be specialized for sweetness, another for saltiness and so on.

Taste buds that can sense all taste qualities and that are dispersed throughout the mouth, the researchers say, make evolutionary sense. With a taste mechanism thus structured, an individual does not lose the capability to perceive one of the four basic tastes even if a part of the tongue is damaged. The French author and gastronome Brillat-Savarin made the same observation. In *The Physiology of Taste*, he describes a man whose tongue had been partially amputated as punishment for attempting to escape from prison. In response to Brillat-Savarin's inquiry, the man wrote that he could still taste fairly well and could, like other men, determine what was pleasant and what was unappetizing.

One of the most intriguing of recent findings is that the tongue is controlled by two major nerves that relay information to the brain ipsilaterally; that is, a taste perceived on one side of the tongue goes up and is interpreted on the same side of the brain. Most nerves work contralaterally, sending their messages to the opposite side of the brain. Why the taste system is wired in this manner is not fully understood, but scientists suspect a complex interdependent network by which one nerve can inhibit another, or take over should one of the nerves be damaged.

Another of recent findings suggests that the intensity of bitterness is perceived differently at the front of the tongue than at the back. The front of the tongue is most sensitive to bitterness; a small amount is readily picked up. Above a certain threshold, however, the back of the tongue registers bitterness more intensely. This may be due, it is theorized, to the way taste buds are arranged spatially and the distance between them.

The fact that taste buds at the back of the tongue register bitterness more intensely helps to explain why tannin (the dry, sometimes bitterly astringent substance found mainly in red wine) is perceived at the back of the throat.

Interestingly, although our sensitivity to sweetness, for example, does not decline as we get older, our sensitivity to bitterness may. Most bitter substances are pharmacologically active; they are poisonous in massive quantities. Some evidence suggests that people who expose themselves to large amounts of bitter substances such as coffee and cigarettes, for example, may develop a reduced sensitivity to bitterness as they grow older.

FLAVOR PRINCIPLES

- Flavor is the taste that results from a mixture of several flavoring ingredients that are used frequently and consistently within a cuisine.
- Flavor is a taste that can be abstracted and described apart from the basic foodstuffs the ingredients interact with
- Certain conjunctions of flavoring ingredients are used repeatedly within a cuisine.
- Flavor may be varied in characteristic ways and applied to different kinds of food, but no matter how or where they are employed, they will almost invariably result in a dish which tastes... and which, in some meaningful way, is...
- There are basic ethnic flavor principles which are characteristic and which can be recognized and described by the reasonably experienced taster. When mastered, these flavors can be used by the ingenious cook for novelty, variety and authenticity.

Source: *The Wine Primer* by Karen MacNeil

THE FIVE SENSES

- Hearing
- Sight
- Touch
- Smell
- Taste

IN FOOD, PEOPLE RESPOND TO...

1. Temperature
2. Texture
3. Taste

...in that order

THE "TASTES"

- Sweet
- Sour (Acid)

- Salty
- Bitter (Alkaline)
- *Umami*

FLAVOR IN COOKING IS DEVELOPED THROUGH ...

- proper execution of cooking techniques
- selection of quality ingredients
- application of processes that capture flavor
- appropriate use of seasonings and flavorings

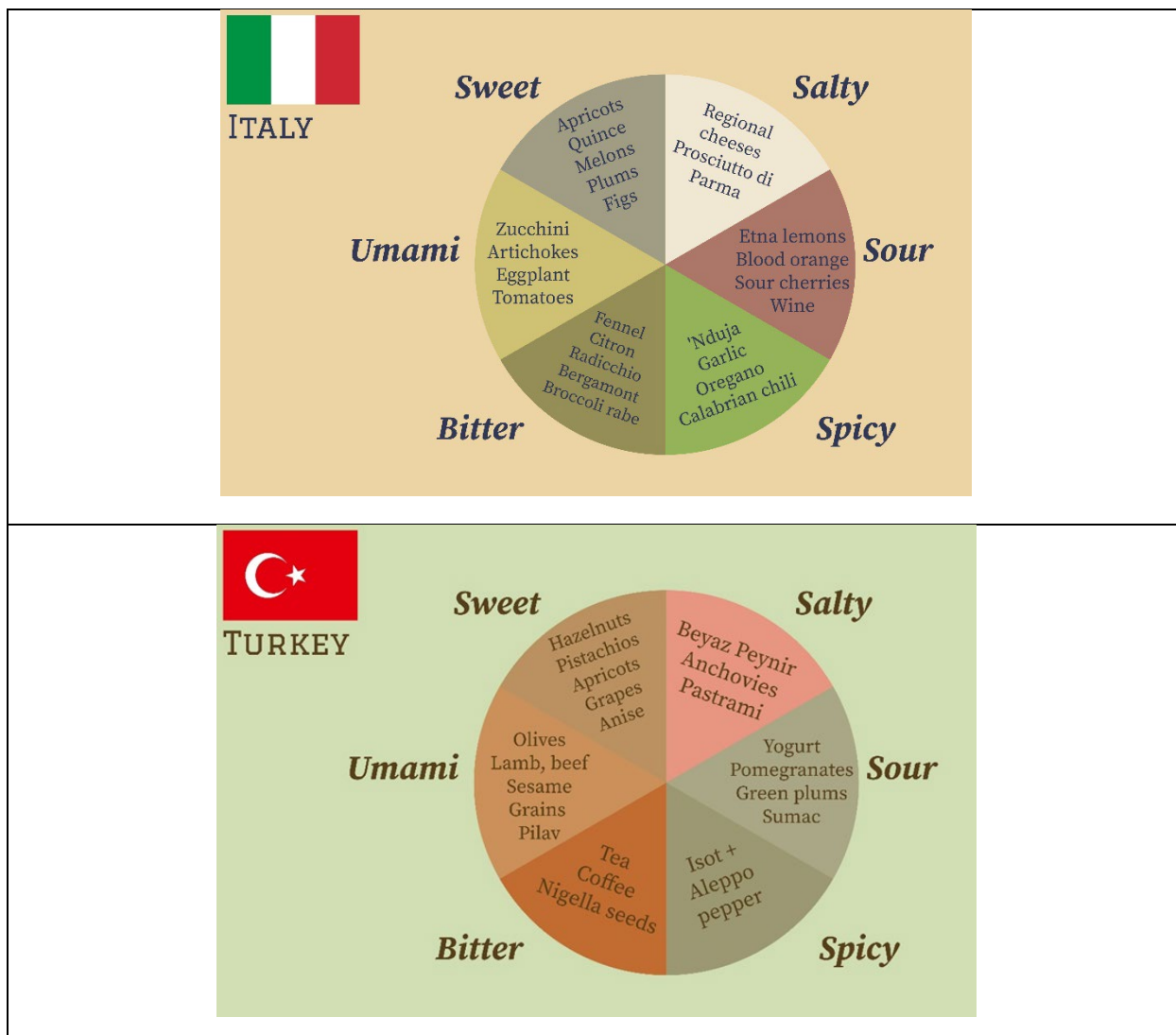
EFFECTS OF FLAVOR ON A DISH

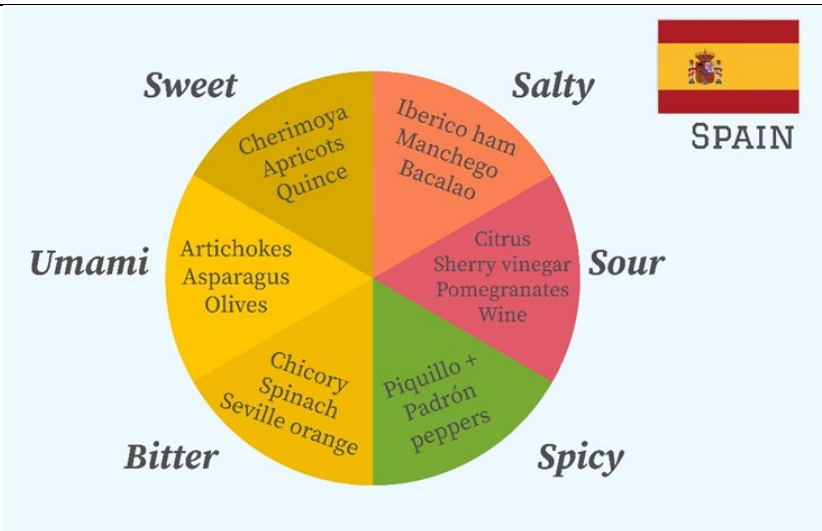
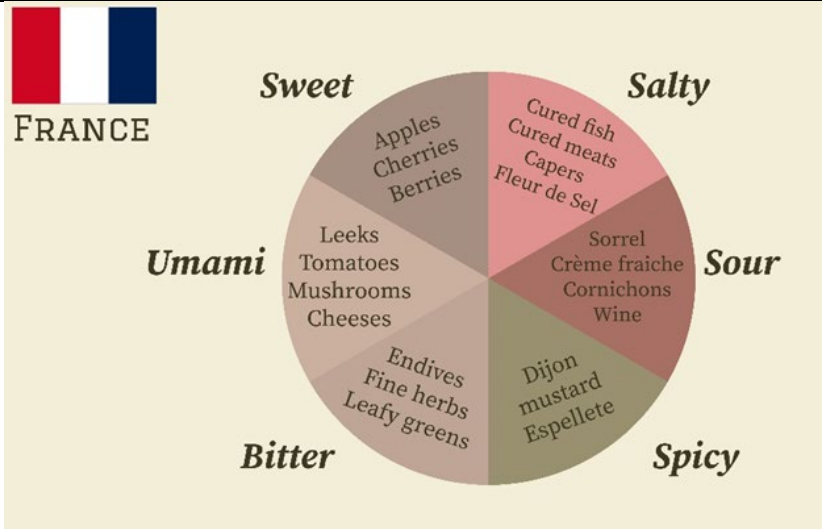
- **Sweetness:** rounds and softens
- **Umami:** gives body and satisfaction
- **Bitterness:** adds complexity
- **Saltiness:** enhances overall flavor
- **Acidity:** brightens and sharpens
- **Spiciness:** adds excitement and complexity

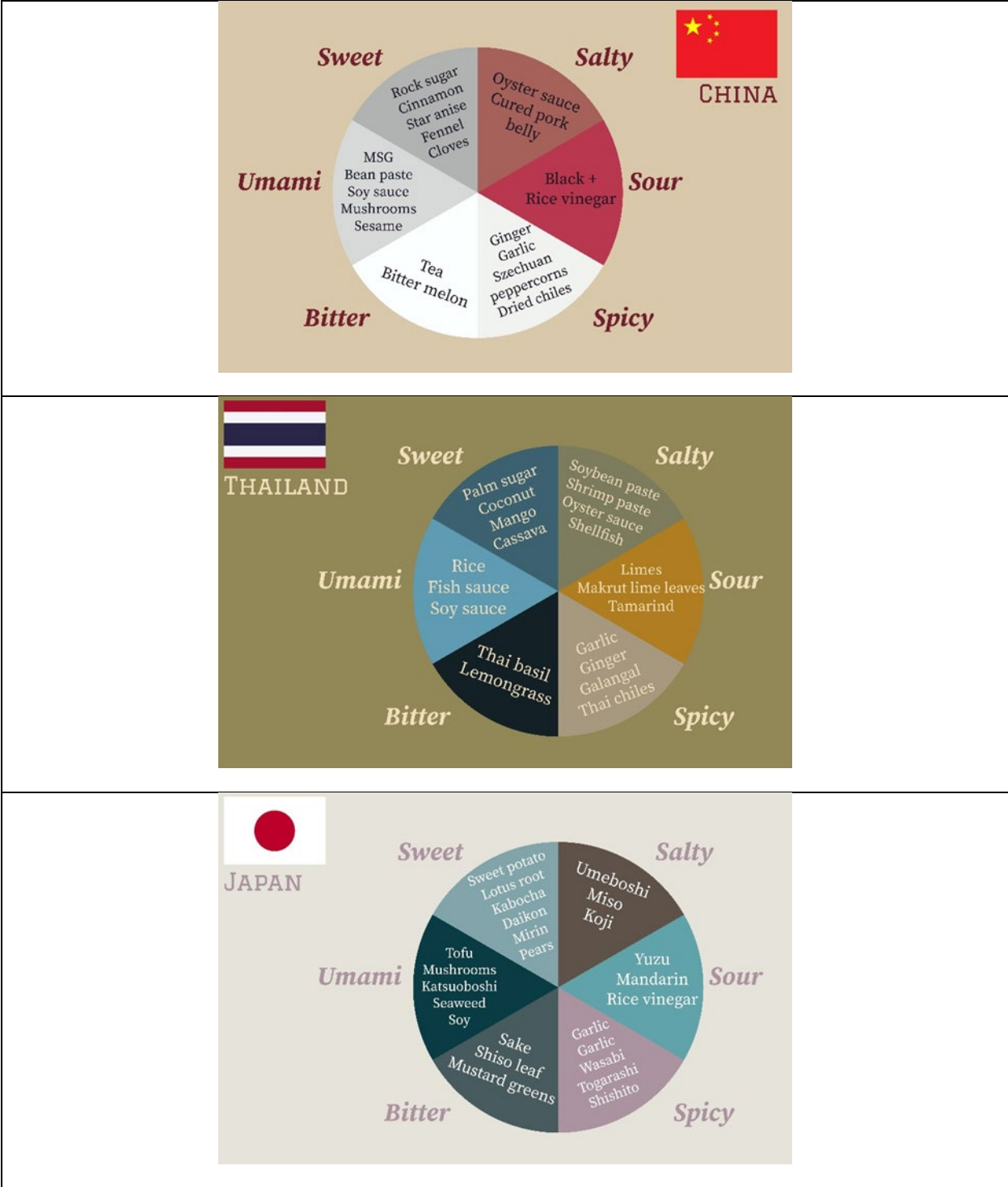
BALANCING FLAVOR PROFILES

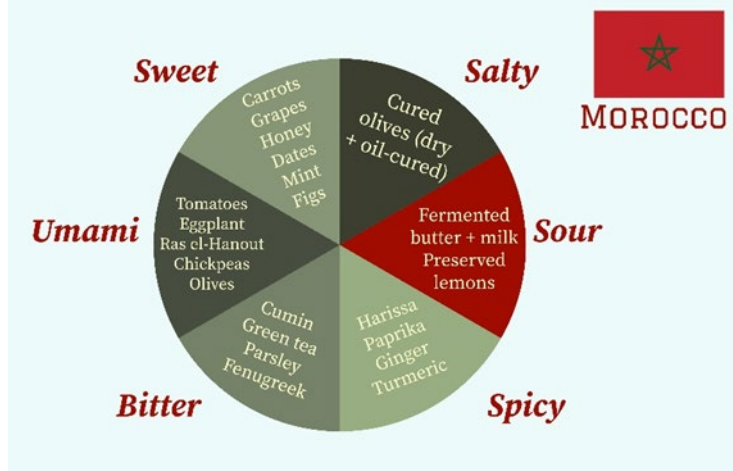
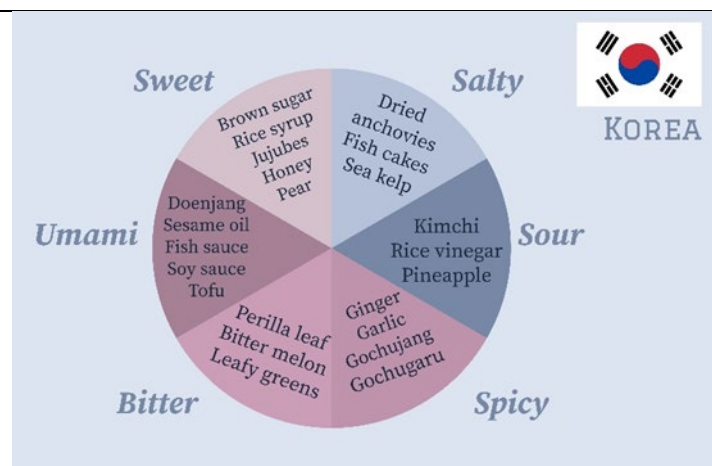
- **Too sweet:** add acid or salt (wine, yogurt, capers, tamarind)
- **Too acidic:** add sweetness or fat (coconut milk, palm sugar, honey)
- **Too flat:** add umami or salt (sesame oil, olives, cheese, miso)
- **Too Heavy or salty:** add brightness/ acid (sherry, citrus, pomegranate)

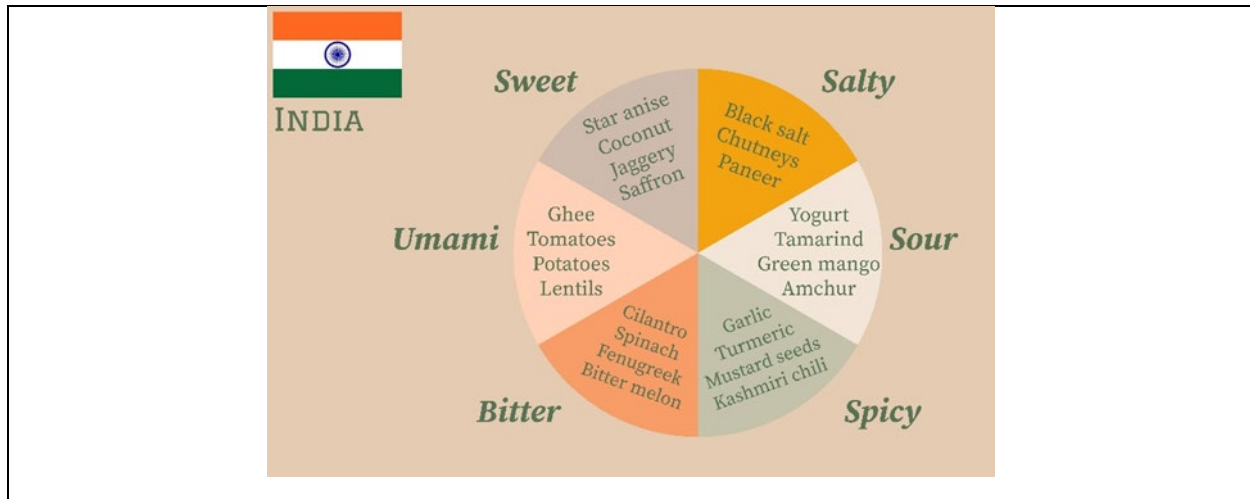
WORLD FLAVOR PROFILES











SPICE, HERB, & AROMATIC CHART

Spices: Are derived from the bark, root, fruit or berry of perennial plants

Example:

- Cinnamon from the bark
- Pepper from the berry
- Ginger from the root
- Nutmeg from the fruit

Herbs: Are the leaves of annual and perennial low-growing shrubs

Aromatic seeds: Are the seeds of graceful lacy annual plants (Anise, Caraway, Coriander)

Name: **Allspice**
 Type: Dried berry of evergreen tree in myrtle family
 Origin: Jamaica, Mexico and Central America
 Form: Whole or ground
 Flavor: Resembles cinnamon, nutmeg and cloves
 Uses: Cakes, cookies, puddings, pies and pickling liquids

Name: **Anise seed**
 Type: Seed
 Origin: Asia minor and Egypt, now cultivated in countries of temperate zone
 Form: Ground and whole seed, extract, oil
 Flavor: Licorice flavor
 Uses: Confections, coffee cakes, flavoring for liqueurs

Name: **Caraway seed**
Type: Seed
Origin: Europe and Asia minor, related to carrot
Form: Ground or whole
Flavor: Aromatic
Uses: Breads, rolls and biscuits

Name: **Cardamom**
Type: Pod of perennial plant of the ginger family
Origin: Native to India, cultivated in Malabar and Ceylon
Form: Whole pod and ground
Flavor: Aromatic, sweet, spicy
Uses: Cakes, Danish and cookies

Name: **Cinnamon**
Type: Stripped dried bark of evergreen tree in Laurel family
Origin: Far East
Form: Ground, sticks
Flavor: Mild to bittersweet
Uses: Baked goods, entrees, puddings, probably the most popular spice

Name: **Cloves**
Type: Unopened dried buds from an evergreen
Origin: Spice Islands, cultivated in West Indies, Zanzibar, Madagascar and tropical Africa
Form: Ground, whole
Flavor: Sweet aromatic
Uses: Cakes, cookies, other baked goods along with meats, sauces and vegetables

Name: **Coriander**
Type: Seed from plant of the parsley family
Origin: Mediterranean, Morocco supplies most coriander
Form: Whole or ground
Flavor: Sweet, fragrant, aromatic
Uses: Pastry, sausage, breads and other desserts, pickles

Name: **Dill seed**
Type: Seed from plant in parsley family
Origin: Asia Minor and Europe, most comes from India
Form: Whole or ground
Flavor: Pungent and slightly dominant
Uses: Appetizers, fish, pickling, breads and rolls

Name: **Ginger**
Type: Root from plant of tropical Asia that looks similar to young corn
Origin: Tropical Asia, now cultivated in Africa, Jamaica, India. Jamaican ginger is the finest quality
Form: Fresh, dried pieces, ground
Flavor: Rich, extremely pungent
Uses: Cakes, pies, meats, pickling

Name: **Mace**
Type: Membrane covering of nutmeg from an evergreen tree
Origin: Spice Islands, now cultivated in Grenada West Indies
Form: Whole flat-branched irregular pieces, ground
Flavor: Aromatic
Uses: Baked goods, pies

Name: **Mint** (spearmint, peppermint)
Type: Leaf
Origin: Mediterranean region, cultivated in Europe and U.S.
Form: Fresh, dried, ground
Flavor: Peppermint is sharply pungent, peppery--Spearmint is milder
Uses: Baked items, fruit, meats, sauces, oil is used for flavoring and scent

Name: **Nutmeg**
Type: Nut from evergreen tree
Origin: Spice Islands, now cultivated in Grenada West Indies
Form: Whole nut or ground
Flavor: Aromatic, earthy
Uses: Baked goods, sauces, potatoes, meats

Name: **Poppy seed**
Type: Seed
Origin: Southwestern Asia, cultivated in Holland, Poland, Iran, Turkey and Argentina
Form: Whole small seeds, ground as a filling for baked goods
Flavor: Nut-like flavor
Uses: Bread, rolls

Name: **Sesame Seed**
Type: Seed or paste or oil
Origin: South Central Asia, cultivated in Southwestern U.S., South America, China, Africa and India
Form: Small seeds
Flavor: Not aromatic like spices, sweet nutty flavor when toasted

Uses: Baked goods, rolls, breads

Name: **Vanilla Bean**

Type: Fruit, dried pod of delicate orchid

Origin: Tropical America, cultivated in Madagascar and Mexico

Form: Extract when percolated with alcohol, bean form

Flavor: Sweet, fragrant, exotic

Uses: Ice cream, desserts and confections

HERB AND SPICE MIXTURES

There are certain felicitous combinations of herbs and spices that have become part of our culinary vocabulary and indispensable ingredients in certain dishes. A few of these blends, like bouquet garni, curry powder and *herbes de Provence*, have many variations. Although you can buy good quality blends at specialty markets, your own mix will be fresher. For the most aromatic results, start with whole seeds and berries. Grind them with a mortar and pestle, spice mill or electric coffee grinder.

BOUQUET GARNI

- 3 ea. Parsley sprigs
- 1 ea. Thyme sprig
- 1 ea. Bay leaf (fresh or dried)
- 1 ea. sprig of celery leaf, fennel frond, or marjoram (Optional)

Bouquet garni is the traditional French seasoning for stews and other slowly cooked meat dishes. Typically, fresh herbs are tied together in a bouquet with plain white kitchen string, or they are enclosed in cheesecloth to make a sachet. Remove the herb bundle after cooking, before the food is served. Experiment with non-meat dishes such as a savory white bean casserole.

FINES HERBES

- 1 ea. Parsley sprig, minced
- 1 ea. Tarragon sprig, minced
- 1 ea. Chervil sprig, minced
- 1 ea. Chives, minced

Fines herbes is a time-honored French seasoning composed of four delicate chopped, fresh, green herbs. It is often used in omelets, on grilled meats and in marinades. The blend is used raw or added toward the end of cooking. Try mixing your fresh fines herbes into mayonnaise, sour cream, cottage cheese, cream cheese or butter as a spread for sandwiches or hors d'oeuvres.

QUATRE-ÉPICES

- ½ tsp. Black or white pepper, freshly ground
- ½ tsp. Nutmeg, freshly grated
- ½ tsp. Ground ginger
- ½ tsp. Ground cloves or cinnamon

Quatre-épices is a mixture of four ground spices (quatre-épices is French for four spices) traditionally used in charcuterie. Allspice, also known as “Jamaican pepper,” is a common substitute. This four-spice blend, used in almost every country of the world, has taken on a life of its own, with chefs incorporating many other spices to get the flavor just right on their palates. Use quatre-épices to add a more aromatic nuance to all meats, particularly game, or to add a lovely Caribbean piquance to grilled or stewed meat.

GARAM MASALA

- 1 Tbsp. Ground cardamom - (2 teaspoons cardamom seeds)
- 2 ½ tsp. Ground coriander - (2 teaspoons coriander seeds)
- 2 tsp. Ground cumin - (1 ½ teaspoons cumin seeds)
- 1 tsp. Ground black pepper - (1 teaspoon peppercorns)
- ½ tsp. Ground cloves - (a heaping ½ teaspoon whole cloves)
- ½ tsp. Ground cinnamon - (a 2-inch piece of cinnamon stick)
- ½ tsp. Nutmeg - (½ teaspoon whole nutmeg, cut into chunks)

Traditionally used in northern Indian cuisine, garam masala means literally “warm spice blend” because its spices are supposed to heat the body. It is stirred into curries, pilafs and biryanis toward the end of cooking. Try substituting garam masala for cinnamon and nutmeg in oatmeal cookies. Dry-roast the whole spices in a hot pan over low heat before grinding them.

CURRY POWDER

- 2 tsp. Ground coriander or (1 ½ teaspoons coriander seeds)
- 2 tsp. Ground cumin or (1 ½ teaspoons cumin seeds)
- 2 tsp. Red chile powder
- 2 tsp. Turmeric
- 2 tsp. Ground ginger

Optional: Allspice, black pepper, cardamom, cinnamon, cloves, fennel seeds, fenugreek seeds, mace, black (also called brown) or red mustard seeds, poppy seeds, saffron or sesame seeds
An Indian curry usually consists of eggs, fish, chicken, lamb or vegetables, cooked in a highly seasoned sauce, the spices for which have varied infinitely for thousands of years. For something different, try adding a little curry powder to a fresh carrot soup or to a mayonnaise sauce for fish. To maximize flavor, dry-roast the whole spices in a hot pan over low heat before grinding.

FIVE-SPICE POWDER

- 1 tsp. Ground star anise - (3 whole star anise)
- 1 tsp. Ground fennel seeds – (¾ teaspoon whole fennel seeds)
- 1 tsp. Ground Szechwan or white pepper
- ½ tsp. Ground cassia or cinnamon - (a 2-inch piece of cinnamon stick)
- ½ tsp. Ground cloves (a heaping ½ teaspoon whole cloves)

Sometimes called five-fragrance powder, five perfumes or five heavenly spices, this traditional Chinese blend has a powerful anise flavor. It is used throughout southern China and Vietnam in stir-fries and in marinades involving pork, beef, chicken or duck. Five-spice powder makes a wonderful addition to barbecued ribs or leeks braised in butter.

HERBES DE PROVENCE

- 1 tsp. Thyme, minced (fresh or dried)
- 1 tsp. Summer savory, minced (fresh or dried)
- ½ tsp. Lavender, minced (fresh or dried)
- ¼ tsp. Rosemary, minced (fresh or dried)
- ¼ tsp. Fennel fronds, minced (fresh) (Optional)
- ¼ tsp. Basil, minced (fresh) (Optional)
- ½ tsp. Oregano, minced (fresh or dried) (Optional)
- ¼ tsp. Sage, minced (fresh or dried) (Optional)

Herbes de Provence, literally herbs from Provence, consists of the herbs commonly found growing in that southern region of France. The mixture varies according to the availability of the herbs. Although it is most often used with roasted or grilled meat or poultry dishes, it also makes a wonderful flavoring for a pizza.

TUNISIAN TABIL

- 1 Tbsp. Ground coriander seeds
- 1 tsp. Ground caraway seeds
- ¼ tsp. Crushed garlic powder (optional)
- ¼ tsp. Ground red hot pepper
- ¼ tsp. Curry powder

Mix just before using to preserve the maximum flavor and pungency, and keep in a tightly closed jar. In 1492, with the fall of the Spanish Moorish empire known as the Andalus, not all the Andalusian Moors fled to Morocco. Some sailed into the bay of Tunis to settle south of the city in a town called Testour. These Tunisian Moors introduced numerous spices into the Tunisian culinary spectrum, the most important being this mixture called *tabil*, used in recipes for salads, stews and couscous.

HARISSA - (TUNISIAN HOT CHILI PASTE)

9 ea.	Dried New Mexico chilies (3 wt. oz.), a mixture of mild and hot
1 ea.	Small garlic clove, peeled and crushed with ¼ tsp. salt
¼ tsp.	Ground coriander seed
¾ tsp.	Ground caraway seed
to taste	Olive oil

Stem, seed and break-up chilies. Soak in cold water, 15 minutes. Drain well, wrap in cheesecloth and press out excess moisture. Grind in food processor with garlic and spices. Add enough olive oil to make a thin layer of oil. Cover tightly and keep refrigerated. In Tunisia, fiery hot red peppers play a role in almost every dish, usually in the form of the famous harissa paste, a mixture of sun-dried peppers pounded with spices and garlic and packed into jars under a coating of olive oil.

HROUS

Tunisian home-style chile paste with onion and spices is a delicious condiment, used in southern Tunisia to flavor soups, stews and couscous.

1 ea.	Onion (about 4 wt. oz.), peeled and thinly sliced
2 Tbsp.	Coarse salt
Pinch	Turmeric
7 ea.	Dried New Mexico guajillos or ancho chilies
½ tsp.	Tabil or ground coriander (recipe follows)
½ tsp.	Ground caraway seed
½ tsp.	Ground black pepper
2 ea.	Pinches ground cinnamon mixed with ground rosebuds
3 Tbsp.	Olive oil

In wide shallow bowl, combine onion, salt and turmeric; let stand until soft and very wet, from 1 to 3 days. Working in batches, place a handful of onions in cheesecloth and squeeze until very dry. Set aside. Stem, seed, and break up dried chilies. Carefully toast them in an ungreased skillet over low heat; do not allow them to burn. Grind the peppers to a powder in a blender or spice mill. Add remaining spices, 1 Tbsp. olive oil and the dried onions; blending well. Pack into a 1-cup dry jar, cover with remaining olive oil and tightly close. Keep refrigerated.

HARISSA (MOROCCAN RED PEPPER SAUCE)

1 cup	Lamb broth from the couscous pot
1 tsp.	Harissa (recipe follows) or sambal oelek
1 Tbsp.	Lemon juice
1-2 Tbsp.	Olive oil
1 pinch	Cumin
1 pinch	Parsley and green coriander, chopped

Combine all the ingredients in small saucepan over high heat. Beat well and pour into a small serving bowl. Serve at once.

MOROCCAN HARISSA SAUCE

1 wt. oz	Dried red chile peppers
1 ea.	Garlic cloves
to taste	Salt
as needed	Olive oil

This popular relish is served along with many salads, mixed with olives, and, when thinned with a little oil and lemon juice, is sometimes used to flavor brochettes and couscous. You can buy tinned harissa paste imported from Tunisia, or substitute the Indonesian spice paste called *sambal oelek*. Or, if you want, you can make your own. When refrigerated, harissa keeps 2 to 3 months. Cover the peppers with hot water and soak 1 hour, then drain and cut into small pieces. Place in the mortar or spice mill and pound or grind to a purée with the garlic. Sprinkle with a little salt, then spoon into the jar and cover with a layer of olive oil. Cover tightly and refrigerate.

SELECTED SPICE MIXTURES

Mixture	Country of Origin	Traditional Use	Form	Characteristic Spices
Bumbu	Indonesia	Used to flavor rendangs and gulais, spicy dishes served with sauce	Dry spice mixture is combined with coconut milk prior to use	Ginger, turmeric, chiles, cinnamon, cloves, coriander, black peppercorns
Ras al Hanout	Morocco	All-purpose flavoring powder	Whole spices ground together	10 to 15 ingredients, usually including allspice, cloves, cumin, cardamom, chiles, ginger, peppercorns, mace, turmeric, and caraway seeds
Berberé	Ethiopia	Cure for meats, added to condiments and stews	Ingredients are mixed, then simmered prior to use	Chiles, cardamom, cumin, black pepper, fenugreek, allspice, ginger, cloves, coriander
Harissa	Tunisia, Morocco, Algeria	All-purpose condiment, also used to flavor stews and sauces	Whole spices are ground together, then mixed with olive oil to moisten	Chiles, caraway, cumin, coriander, garlic
Baharat	Middle East (Lebanon, Syria, Gulf States, Saudi Arabia)	Whole spices ground together	Widely used to flavor all types of dishes, particularly soups and stews	Cloves, nutmeg, cinnamon, coriander, black pepper, paprika
Curry Powder	Southern India	Used to flavor thin, soupy sauces	Freshly ground spices are sautéed in oil at beginning of cooking process	Curry leaves, turmeric, chiles, coriander, black pepper, and sometimes cumin, ginger, fenugreek, cinnamon, cloves, nutmeg, and fennel seed
Garam Masala	Northern India	Usually added at end of cooking to complete seasoning	Spices are roasted whole, then ground into a powder	Cinnamon, cardamom, cloves, cumin seeds, coriander, black peppercorns, nutmeg, mace

Mixture	Country of Origin	Traditional Use	Form	Characteristic Spices
Panch Phoron (Indian 5-spice Mix)	Eastern India— Bengal	All-purpose flavoring for vegetable dishes	Sautéed in hot oil prior to cooking	Whole cumin seeds, fennel seeds, fenugreek, parsley seeds, black mustard seeds
Gaeng Wan (Green Curry Paste)	Thailand	All-purpose flavoring, widely used in soups and sauces	Ingredients are ground together in mortar and pestle to form a wet paste	Green chiles, turmeric, lemongrass, ginger, coriander, cumin, white peppercorns
Massaman Paste	Thailand	All-purpose flavoring, widely used in soups and sauces	Ingredients are ground together in mortar and pestle to form a wet paste	Chiles, coriander, cumin, cinnamon, cloves, star anise, cardamom, white peppercorns
Recado	Yucatán Peninsula of Mexico	Rubbed on food prior to cooking, also used as all- purpose flavoring for sauces and stews	Spices are pounded to a paste in combination with vinegar, garlic, and herbs	Achiote, cloves, black pepper, chiles, allspice, cinnamon
Five-Spice Powder	China	Used as flavoring in wide variety of Chinese dishes; frequently used in marinades	Whole spices are ground into a raw powder	Anise, fennel seeds, cloves, cinnamon, peppercorns
Quatre Spices	France	Most often used in pâtés	Spices are combined and then ground into a powder	Pepper, nutmeg, cloves, ginger, sometimes cinnamon
Pickling Spices	Europe	Used to add flavor to pickles and certain liquids	Raw whole spices	Mustard seeds, cloves, coriander seeds, mace, black peppercorns, allspice, ginger, chiles
Cajun Blackening Spices	Louisiana, U.S.A.	Used to coat fish prior to cooking	Ground raw spices	Mustard seeds, cumin, paprika, cayenne pepper, black pepper
Crab or Shrimp Boil	Chesapeake Bay, U.S.A.	Thrown in water used for boiling crab or shrimp	Ground raw spices	Peppercorns, mustard seeds, coriander, salt, cloves, ginger, ground bay leaves

WHITE SAUCE EXERCISE

This exercise is designed to observe the impact specific aromatic combinations have on the flavor of a basic white sauce. Each team will be given 1 pint of béchamel sauce and a predetermined aromatic mixture. After each team has added their aromatic mixture to the sauce, a taste comparison will occur.

INSTRUCTIONS

1. Obtain 1 pint of white sauce (Béchamel)
2. Gather assigned aromatics
3. Follow the processing instructions for each group of aromatics
4. Label your sauce and deliver to the tasting table

TEAM ASSIGNMENTS OF AROMATIC MIXTURES

Team 1 - Garam Masala (toasted)

1 ½ tsp.	Whole cardamom
1 ¼ tsp.	Whole coriander
1 tsp.	Whole cumin
½ tsp.	Whole black peppercorns
¼ tsp.	Whole cloves
¼ tsp.	Ground cinnamon
¼ tsp.	Ground nutmeg

Method: Sauté the cardamom, coriander, cumin, pepper, and cloves in a dry sauté pan to develop a toasted aroma. Remove spices from heat to cool. Grind using a coffee grinder or mortar and pestle. Combine ground spices with the cinnamon and nutmeg. Add to the béchamel and simmer for 5 minutes.

Team 2 - Curry Powder (toasted)

- 1 tsp. Whole coriander
- 1 tsp. Whole cumin
- 1 tsp. Red chile seeds
- 1 tsp. Ground turmeric
- 1 tsp. Ground ginger

Method: Sauté the coriander, cumin, and chile seeds in a dry sauté pan to develop a toasted aroma. Remove spices from heat to cool. Grind using a coffee grinder or mortar and pestle. Combine ground spices with the turmeric and ginger. Add to the Béchamel and simmer for 5 minutes.

Team 3 - Garam Masala (not toasted)

- 1 ½ tsp. Ground cardamom
- 1 ¼ tsp. Ground coriander
- 1 tsp. Ground cumin
- 1 tsp. Ground black pepper
- ¼ tsp. Ground cloves
- ¼ tsp. Ground cinnamon
- ¼ tsp. Ground nutmeg

Method: Add to the Béchamel and simmer for 5 minutes.

Team 4 - Curry Powder (not toasted)

- 1 tsp. Ground coriander
- 1 tsp. Ground cumin
- 1 tsp. Ground turmeric
- 1 tsp. Ground ginger
- 1 tsp. Dried red chile

Method: Add to the Béchamel and simmer for 5 minutes.

TOMATO SAUCE EXERCISE

This exercise is designed to observe the impact specific aromatic combinations have on the flavor of a basic tomato sauce. Each team will be given 1 pint of tomato sauce and a predetermined aromatic mixture. After each team has added its aromatic mixture to the sauce, a taste comparison will occur.

INSTRUCTIONS:

1. Obtain 1 pint of tomato sauce.
2. Gather assigned aromatics.
3. Follow the processing instructions for each group of aromatics.
4. Label sauce and deliver to the tasting table.

TEAM ASSIGNMENTS OF AROMATIC MIXTURES

Team 1 - Fines Herbs (using **fresh** herbs)

¾ tsp.	Parsley, minced
¾ tsp.	Tarragon, minced
¾ tsp.	Chervil, minced
¼ tsp.	Chives, minced

Method: Heat sauce to a simmer. Add fines herbs and remove from heat.

Team 2 - Fines Herbs (using **dried** herbs)

¾ tsp.	Dried parsley
¾ tsp.	Dried tarragon
¾ tsp.	Dried chervil
¼ tsp.	Dried chives

Method: Heat sauce to a simmer. Add fines herbs and simmer for 15 minutes.

Team 3 - Herbs de Provence (using **fresh** herbs)

¼ tsp. Thyme, minced
¼ tsp. Basil, minced
¼ tsp. Oregano, minced
¼ tsp. Rosemary, minced

Method: Heat sauce to a simmer. Add herbs de Provence and remove from heat.

Team 4 - Herbs de Provence (using **dried** herbs)

¼ tsp. Dried thyme
¼ tsp. Dried basil
¼ tsp. Dried oregano
¼ tsp. Dried rosemary

Method: Heat sauce to a simmer. Add herbs de Provence and simmer for 5 minutes.

Team 5 - Caramelized Vegetables

1 Tbsp. Vegetable oil
⅔ wt. oz. Carrots, small diced
½ wt. oz. Onion, small diced
½ wt. oz. Celery, small diced
1 Tbsp. Garlic, chopped

Method: Heat a sauté pan and add the vegetable oil. When the oil begins to simmer, add the vegetables and sauté until caramelized. Add the vegetables to the tomato sauce and simmer for 10 minutes. Grind using a coffee grinder or mortar and pestle. Add to the Béchamel and simmer for 5 minutes.

WORDS FOR DESCRIBING FOOD

WORDS TO DESCRIBE FLAVOR

Sweet	Sugary, saccharine, cloying
Fruity	Fruit-like, citron
Floury	Gluey, starchy
Fatty	Greasy, oily, buttery
Nutty	Nut-like, toasted nuts
Spicy	Hot, peppery, nippy
Pungent	Sharp, highly seasoned
Acid	Sour, vinegar, tart
Salty	Predominant taste of salt
Bitter	Harsh, caustic, acrid

WORDS TO DESCRIBE TEXTURE

Coarse	Rough, rough in texture
Creamy	Soft, smooth, resembling cream
Crumbly	Shatters readily into small particles
Fluid	Liquid, watery
Hard	Light, firm
Smooth	Free from projections
Tough	Strong or firm in texture, but flexible, not brittle
Watery	Soggy, containing excess water
Viscosity	Perceived thickness, resistance to the tongue

Rate of Flow:

	LOW	MEDIUM	HIGH
Water	Milk	Heavy Cream	Molasses

WORDS TO DESCRIBE AROMA

Aromatic	Sweet-scented, perfumed, fragrant, spicy
Fruity	Fruit-like, citron, citrus-like
Earthy	Musty, moldy, sweaty
Fishy	Strong fish odor
Fatty	Greasy, oily, buttery
Nutty	Nut-like, almond-like
Burnt	Roasted, caramelized, grilled
Smoky	Fumes of burning wood or plant material
Pungent	Sharp, acrid, strong, piquant, biting
Acid	Sour, vinegar, tart, astringent
Chemical	Metallic, ammonia, soapy
Foul	Putrid, rancid

WORDS TO DESCRIBE COLOR

Transparent	clear, crystal clear
Translucent	semi-transparent, semi-opaque
Opaque	dark, dull, murky, clouded
Yellow	lemon, gold, straw-colored
Brown	chocolate, liver-colored, copper
Red	maroon, wine, cherry, rose, crimson, coral
Green	yellow-green, olive, emerald
White	ivory, pearl, snow white, alabaster, milky
Black	coal-black, raven, ebony, inky