

Spice

A **spice** is a seed, fruit, root, bark, or other plant substance primarily used for flavoring or coloring food. Spices are distinguished from herbs, which are the leaves, flowers, or stems of plants used for flavoring or as a garish. Spices are sometimes used in medicine, religious rituals, cosmetics or perfume production.

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History

Early history

The spice trade developed throughout the Indian subcontinent^[1] by at earliest 2000 BCE with cinnamon and black pepper, and in East Asia with herbs and pepper. The Egyptians used herbs for mummification and their demand for exotic spices and herbs helped stimulate world trade. The word *spice* comes from the Old French word *espice*, which became *epice*, and which came from the Latin root *spec*, the noun referring to "appearance, sort, kind": *species* has the same root. By 1000 BCE, medical systems based upon herbs could be found in China, Korea, and India. Early uses were connected with magic, medicine, religion, tradition, and preservation.^[2]

Cloves were used in Mesopotamia by 1700 BCE.^[note 1] The ancient Indian epic Ramayana mentions cloves. The Romans had cloves in the 1st century CE, as Pliny the Elder wrote about them.^[4]

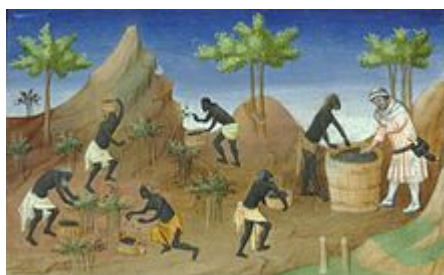
The earliest written records of spices come from ancient Egyptian, Chinese, and Indian cultures. The Ebers Papyrus from early Egypt dating from 1550 B.C.E. describes some eight hundred different medicinal remedies and numerous medicinal procedures.^[5]

Historians believe that nutmeg, which originates from the Banda Islands in Southeast Asia, was introduced to Europe in the 6th century BCE.^[6]

Indonesian merchants traveled around China, India, the Middle East, and the east coast of Africa. Arab merchants facilitated the routes through the Middle East and India. This resulted in the Egyptian port city of Alexandria being the main trading center for spices. The most important discovery prior to the European spice trade was the monsoon winds (40 CE). Sailing from Eastern spice cultivators to Western European consumers gradually replaced the land-locked spice routes once facilitated by the Middle East Arab caravans.^[2]

In the story of Genesis, Joseph was sold into slavery by his brothers to spice merchants. In the biblical poem Song of Solomon, the male speaker compares his beloved to many forms of spices.

Middle Ages



"The Mullus" harvesting pepper.
Illustration from a French edition of
The Travels of Marco Polo.

Spices were among the most demanded and expensive products available in Europe in the Middle Ages,^[5] the most common being black pepper, cinnamon (and the cheaper alternative cassia), cumin, nutmeg, ginger and cloves. Given medieval medicine's main theory of humorism, spices and herbs were indispensable to

balance "humors" in food,^[6] a daily basis for good health at a time of

Spices



Spices at a central market in Agadir,
Morocco



A group of Indian herbs and spices in
bowls



An assortment of spices used in
Indian cuisine

recurrent pandemics. In addition to being desired by those using medieval medicine, the European elite also craved spices in the Middle Ages. An example of the European aristocracy's demand for spice comes from the King of Aragon, who invested substantial resources into bringing back spices to Spain in the 12th century. He was specifically looking for spices to put in wine, and was not alone among European monarchs at the time to have such a desire for spice.^[7]

Spices were all imported from plantations in Asia and Africa, which made them expensive. From the 8th until the 15th century, the Republic of Venice had the monopoly on spice trade with the Middle East, and along with it the neighboring Italian maritime republics and city-states. The trade made the region rich. It has been estimated that around 1,000 tons of pepper and 1,000 tons of the other common spices were imported into Western Europe each year during the Late Middle Ages. The value of these goods was the equivalent of a yearly supply of grain for 1.5 million people.^[8] The most exclusive was saffron, used as much for its vivid yellow-red color as for its flavor. Spices that have now fallen into obscurity in European cuisine include grains of paradise, a relative of cardamom which mostly replaced pepper in late medieval north French cooking, long pepper, mace, spikenard, galangal and cubeb.



Spices and herbs at a shop in Goa, India



Spices of Saúde flea market, São Paulo, Brazil

Early Modern Period

Spain and Portugal were interested in seeking new routes to trade in spices and other valuable products from Asia. The control of trade routes and the spice-producing regions were the main reasons that Portuguese navigator Vasco da Gama sailed to India in 1499.^[8] When da Gama discovered the pepper market in India, he was able to secure peppers for a much cheaper price than the ones demanded by Venice.^[7] At around the same time, Christopher Columbus returned from the New World. He described to investors new spices available there.^[citation needed]

Another source of competition in the spice trade during the 15th and 16th century was the Ragusans from the maritime republic of Dubrovnik in southern Croatia.^[9]

The military prowess of Afonso de Albuquerque (1453–1515) allowed the Portuguese to take control of the sea routes to India. In 1506, he took the island of Socotra in the mouth of the Red Sea and, in 1507, Ormuz in the Persian Gulf. Since becoming the viceroy of the Indies, he took Goa in India in 1510, and Malacca on the Malay peninsula in 1511. The Portuguese could now trade directly with Siam, China, and the Maluku Islands.

With the discovery of the New World came new spices, including allspice, chili peppers, vanilla, and chocolate. This development kept the spice trade, with America as a latecomer with its new seasonings, profitable well into the 19th century.

Function

Spices are primarily used as food flavoring. They are also used to perfume cosmetics and incense. At various periods, many spices have been believed to have medicinal value. Finally, since they are expensive, rare, and exotic commodities, their conspicuous consumption has often been a symbol of wealth and social class.^[10]

It is often claimed that spices were used either as food preservatives or to mask the taste of spoiled meat, especially in the Middle Ages.^{[10][11]} This is false.^{[12][13][14]} In fact, spices are rather ineffective as preservatives as compared to salting, smoking, pickling, or drying, and are ineffective in covering the taste of spoiled meat.^[10] Moreover, spices have always been comparatively expensive: in 15th century Oxford, a whole pig cost about the same as a pound of the cheapest spice, pepper.^[10] There is also no evidence of such use from contemporary cookbooks: "Old cookbooks make it clear that spices weren't used as a preservative. They typically suggest adding spices toward the end of the cooking process, where they could have no preservative effect whatsoever."^[15] In fact, Cristoforo di Messisbugo suggested in the 16th century that pepper may speed up spoilage.^[15]

The most popular explanation for the love of spices in the Middle Ages is that they were used to preserve meat from spoiling, or to cover up the taste of meat that had already gone off. This compelling but false idea constitutes something of an urban legend, a story so instinctively attractive that mere fact seems unable to wipe it out... Anyone who could afford spices could easily find meat fresher than what city dwellers today buy in their local supermarket.^[10]

Though some spices have antimicrobial properties in vitro,^[16] pepper—by far the most common spice—is relatively ineffective, and in any case, salt, which is far cheaper, is also far more effective.^[15]

Classification and types

Culinary herbs and spices

Botanical basis

- Seeds, such as fennel, mustard, nutmeg, and black pepper
- Fruits, such as Cayenne pepper and Chimayo pepper
- Arils, such as mace (part of nutmeg plant fruit)
- Barks, such as True Cinnamon and cassia
- Flower buds, such as cloves
- Stigmas, such as saffron
- Roots and rhizomes, such as turmeric, ginger and galangal
- Resins, such as asafoetida

Common spice mixtures

- Advieh (Iran)
- Baharat (Arab world, and the Middle East in general)
- Berberé (Ethiopia, Eritrea and Somalia)
- Bumbu (Indonesia)
- Cajun (United States)
- Chaat masala (Indian subcontinent)
- Chili powder and crushed red pepper (Cayenne, Chipotle, Jalapeño, New Mexico, Tabasco, and other cultivars)
- Curry powder
- Five-spice powder (China)
- Garam masala (Indian subcontinent)
- Harissa (North Africa)

- Hawaij (Yemen)
- Jerk spice (Jamaica)
- Khmeli suneli (Georgia, former U.S.S.R.)
- Masala (a generic name for any mix used in the Indian subcontinent)
- Mixed spice (United Kingdom)
- Panch phoron (Indian subcontinent)
- Pumpkin pie spice (United States)
- Quatre épices (France)
- Ras el hanout (North Africa)
- Sharena sol (literally "colorful salt", Bulgaria)
- Shichimi tōgarashi (Japan)
- Speculaas (Belgium and Netherlands)
- Thuna Paha (Sri Lanka)
- Vegeta (Croatia)
- Za'atar (Middle East)

Handling

A spice may be available in several forms: fresh, whole dried, or pre-ground dried. Generally, spices are dried. Spices may be ground into a powder for convenience. A whole dried spice has the longest shelf life, so it can be purchased and stored in larger amounts, making it cheaper on a per-serving basis. A fresh spice, such as ginger, is usually more flavorful than its dried form, but fresh spices are more expensive and have a much shorter shelf life. Some spices are not always available either fresh or whole, for example turmeric, and often must be purchased in ground form. Small seeds, such as fennel and mustard seeds, are often used both whole and in powder form.

For **ground spices**, to grind a whole spice, the classic tool is mortar and pestle. Less labor-intensive tools are more common now: a microplane or fine grater can be used to grind small amounts; a coffee grinder^[note 2] is useful for larger amounts. A frequently used spice such as black pepper may merit storage in its own hand grinder or mill.



Pepper mill

The flavor of a spice is derived in part from compounds (volatile oils) that oxidize or evaporate when exposed to air. Grinding a spice greatly increases its surface area and so increases the rates of oxidation and

evaporation. Thus, the flavor is maximized by storing a spice whole and grinding when needed. The shelf life of a whole dry spice is roughly two years; of a ground spice roughly six months.^[17] The "flavor life" of a ground spice can be much shorter.^[note 3] Ground spices are better stored away from light.^[note 4]



A shelf of common spices for a home kitchen in Canada or the United States



Spice seller, Kashgar market

Some flavor elements in spices are soluble in water; many are soluble in oil or fat. As a general rule, the flavors from a spice take time to infuse into the food so spices are added early in preparation. This contrasts to herbs which are usually added late in preparation.^[17]

Salmonella contamination

A study by the Food and Drug Administration of shipments of spices to the United States during fiscal years 2007-2009 showed about 7% of the shipments were contaminated by Salmonella bacteria, some of it antibiotic-resistant.^[18] As most spices are cooked before being served salmonella contamination often has no effect, but some spices, particularly pepper, are often eaten raw and present at table for convenient use. Shipments from Mexico and India, a major producer, were the most frequently contaminated.^[19] However, with newly developed radiation sterilization methods, the risk of Salmonella contamination is now lower.^[20]

Nutrition

Because they tend to have strong flavors and are used in small quantities, spices tend to add few calories to food, even though many spices, especially those made from seeds, contain high portions of fat, protein, and carbohydrate by weight. However, when used in larger quantity, spices can also contribute a substantial amount of minerals and other micronutrients, including iron, magnesium, calcium, and many others, to the diet. For example, a teaspoon of paprika contains about 1133 IU of Vitamin A, which is over 20% of the recommended daily allowance specified by the US FDA.^[21]

Most herbs and spices have substantial antioxidant activity, owing primarily to phenolic compounds, especially flavonoids, which influence nutrition through many pathways, including affecting the absorption of other nutrients. One study found cumin and fresh ginger to be highest in antioxidant activity.^[22]

Production

India contributes 75% of global spice production.

Top Spice Producing Countries
(in metric tonnes)

Rank	Country	2010	2011
1	India	1,474,900	1,525,000
2	Bangladesh	128,517	139,775
3	Turkey	107,000	113,783
4	China	90,000	95,890
5	Pakistan	53,647	53,620
6	Iran	18,028	21,307
7	Nepal	20,360	20,905
8	Colombia	16,998	19,378
9	Ethiopia	27,122	17,905
10	Sri Lanka	8,293	8,438
—	<i>World</i>	1,995,523	2,063,472
Source: <i>UN Food & Agriculture Organization</i> ^[23]			

Standardization

The [International Organization for Standardization](#) addresses spices and [condiments](#), along with related food additives, as part of the [International Classification for Standards 67.220 series](#).^[24]

Research

The [Indian Institute of Spices Research](#) in [Kozhikode](#), [Kerala](#), is devoted exclusively to conducting research for ten spice crops: black pepper, cardamom, cinnamon, clove, garcinia, ginger, nutmeg, paprika, turmeric, and vanilla.

Gallery



The *Gato Negro* café and spice shop (Buenos Aires, Argentina)



A spice shop selling a variety of spices in Iran



Night spice shop in Casablanca, Morocco.



A spice shop in Taliparamba, India



Spices sold in Taliparamba, India

See also

- List of Indian spices – Variety of spices grown across the Indian subcontinent
- List of culinary herbs and spices
- Outline of herbs and spices
- Seasoning
- Spice mix
- Spice use in Antiquity

Notes

1. A team of archaeologists led by Giorgio Buccellati excavating the ruins of a burned-down house at the site of Terqa, in modern-day Syria, found a ceramic pot containing a handful of cloves. The house had burned down around 1720 BC and this was the first evidence of cloves being used in the west before Roman times.^[3]
2. Other types of coffee grinders, such as a burr mill, can grind spices just as well as coffee beans.
3. Nutmeg, in particular, suffers from grinding and the flavor will degrade noticeably in a matter of days.
4. Light contributes to oxidation processes.

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External links

- Spices in the 16th century Tudor time (<https://www.youtube.com/watch?v=FOz58P-O-6o>) on YouTube

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