

Module- 12: Pepper products: dehydrated green pepper

12.1 Pepper products: Dehydrated green pepper

Dried, ground pepper, and its variants, is one of the most common spices in European cuisine, having been known and prized since antiquity for both its flavour and its use as a medicine. The word “pepper” comes from the Sanskrit word pippali, which is Indian long pepper, a relative of black pepper. It is native to the Malabar Coast of southwest India. Pepper or pippali has origins in India and Indonesia. Long before the use of black pepper, this pepper was highly regarded in Europe and, thus, became the source of the word pepper. Today, black pepper is used abundantly all over the world, while long pepper’s use has disappeared, except in India.

Scientific Name(s): black/white/green pepper: *Piper (P) nigrum*; long pepper: *P. longum* (India) and *P. retrofractum* (Indonesia); cubeb pepper: *Piper cubeba* (Indonesia, North Africa). Family: Piperaceae (pepper family). Negro pepper: *Xylopi(X) aethiopica* or *X. aromatica*, Family: Annonaceae (custard apple family). Tasmanian pepper: *Tasmania (T) lanceolata* or *T. aromatica*, Family: Winteraceae, are not from the pepper family but will be included here. Origin and Varieties: black and white peppers are native to the southwestern Malabar Coast of India. There are many varieties of black pepper, depending on its origins. It is now cultivated in Thailand, Sarawak (in Malaysia), Sumatra (in Indonesia), Madagascar, Vietnam, Singapore, Sri Lanka, and Brazil. Long pepper is native to India and Indonesia. Grades of pepper are identified by their origins, with Tellicherry (or Thalassery) and Malabar being the higher grades of peppers. Cubeb pepper comes from West Africa while Negro pepper is found in Africa and Brazil, and Tasmanian pepper originates from Australia, especially grown in Tasmania.

12.2 Common Names:

Black pepper is known as black gold. It is also called kundoberbere (Amharic), fulfolaswad (Arabic), beghbegh (Armenian), kalomirich (Bengali), nayukhon (Burmese), hakwuhjiu, hay huchiaio (Cantonese, Mandarin), sortpeber (Danish), zwartepeper (Dutch), felfelsiah (Farsi), poivre noir (French), schwarzerpfeffer (German), piperimauro (Greek), pilpelshahhor (Hebrew), kali mirchi (Hindi, Urdu), feketbors (Hungarian), merichitam (Indonesian), pepenero (Italian), kosho (Japanese), ladahitam (Malaysian), kurumulagu (Malayalam), hay huchiaio (Mandarin), kala mire (Marathi), pimienta preta (Portuguese), chyornypjerets (Russian), pimientanegra (Spanish), svartpeppar (Swedish), karumulagu (Tamil), prik (Thai), karabiber (Turkish), and tieu den (Vietnamese).

12.3 Green pepper:

Poivrevert (French), grunerpfeffer (German), pilpelyarok (Hebrew), merichijau (Indonesian), pepeverde (Italian), ladahijau (Malaysian), pimientaverde (Portuguese), zelyonypjerets (Russian), and gronpeppar (Swedish). Long pepper: Balinese pepper and Bengal pepper. It is also called timiz (Amharic), fleyflataweela (Arabic), pipoli (Assamese), pipool (Bengali), yeungjiu, xiangjiao (Cantonese, Mandarin), langwerpiber (Danish), poivre long (French), langerpfeffer (German), macro

piperi (Greek), pipara (Gujarati), pipli, pipal (Hindi), Bengali bors (Hungarian), cabebali (Indonesian), Indonagakoshou (Japanese), morechansai (Khmer), salipi (Laotian), thippali (Malayalam), cabaiJawa (Malaysian), magha (Punjabi), tipli (Singhalese), langpeppar (Swedish), litlit (Tagalog), tippali (Tamil), phrik hang (Thai), uzunbiber (Turkish), pipul (Urdu), and tieu hoi (Vietnamese). Green peppercorns, from Amazonas, Brazil, are the unripe tender berries that are picked and air dried or freeze-dried and then packed in brine or wine vinegar to retain their color

12.4 Green pepper-based products

Canned green pepper; green pepper in brine; bulk-packaged green pepper in brine; cured green pepper; frozen green pepper; freeze-dried green pepper; dehydrated green pepper; green pepper pickle; mixed green pepper pickle; green pepper sauce; and green pepper-flavoured products.

Dehydrated green pepper is prepared from immature green pepper fruits of suitable varieties by processing under controlled conditions. The fruits should be reasonably uniform in size having characteristic pungency, flavor and color of green pepper. Pepper fruits are blanched in boiling water for a few minutes, drained, cooled and then soaked in sulphur dioxide solution to fix the green color followed by drying in a cabinet drier at 50°C. Upon rehydration, this product reconstitutes to a good quality product possessing the characteristic pungent, spicy taste, color and flavor of green pepper, when one part by mass of dehydrated green pepper is cooked for 20 minutes in presence of ten parts by mass of 1 per cent sodium chloride solution. To conform to international standards, the product should have a moisture content of less than 8%. On dehydration, the berries turn full and soft, but do not have the texture of green pepper in brine. The berries are freeze dried or mechanically air dried. Freeze-drying ensures better dehydration. Frozen green pepper is made by freezing the berries in a brass freezer. Europe is the major importer of frozen green pepper because of natural green colour and the fresh flavor of green pepper.



Fig12. Fresh green peppers

Other products of green pepper include preservation in brine, vinegar or citric acid and may be dried and kept in the preservative:

12.5 Canned Green Pepper

The separated green pepper berries are washed and filled in cans containing a diluted solution of sodium chloride with or without added acidity. The filled cans are then sealed and sterilized by the autoclave process, and cooled under running water. Europe, USA and Australia use canned green pepper for flavoring food and garnishing meat dishes.

12.6 Green Pepper in Brine:

Green pepper in brine is made from young, green pepper berries which are carefully detached from the stalks and preserved in a specially formulated solution of vinegar and brine, to retain the natural color and texture of the berries.

12.7 Green Pepper Sauce

Green peppercorns are first ground to a puree and then blended with vinegar, salt, sugar or other ingredients. Distinctly piquant with a natural fresh flavor, green pepper sauce is also used as a dip for chips and fries. Green pepper products are green, immature berries that have been freeze-dried, dehydrated, or canned in brine, vinegar, or citric acid. They are milder in flavor than black and white pepper and have a pungent taste. Green pepper products are served with steaks and are used in manufacturing pate and cheese.

12.8 Bottled green pepper

The manufacturing process consists of despiking the fresh green pepper fruits of uniform size and maturity, immediately after harvest followed by cleaning, washing and steeping in 20% brine solution containing citric acid. This is allowed to cure for three to four weeks. The liquid is drained off and fresh brine of 16% concentration together with 100 ppm sulphur dioxide and 0.2% citric acid is added. The resulting product is stored in container well protected from sun and rain. As per international standards, the product shall have the characteristic odor and flavor of fresh green pepper, the color varying from pale green to green.

12.9 Dry packed green pepper

This product is prepared just like the bottled green pepper except that the liquid at the final stage is drained off and packed in flexible pouches. Dry packed green pepper which has the same qualities of canned and bottled green pepper can partly replace these products.

12.10 Black pepper-based products

Whole black pepper; sterilized black pepper; ground black pepper; cryo-ground black pepper powder; pepper oil; oleoresin; microencapsulated spice flavour.

12.11 White pepper-based products

White pepper whole; white pepper powder.

12.12 Miscellaneous products

Curry powder-spice blends; pepper-flavoured products; pepper extract; preservative; pepper oil; pepper oleoresin; lemon pepper; garlic pepper; sauces; paste; etc.

12.13 Pepper by-product

Light pepper; pepper hulls; pepper pinheads.

12.15 Pepper-flavoured products

Pepper mayonnaise; pepper tofu; pepper cookies; candy and perfume

12.16 Properties

Pepper provides aroma as well as a “bite” that is different from chile peppers, ginger, mustard, or other pungent spices. The essential oil gives the aroma, whereas the nonvolatiles, such as piperine, give the pungency. Each pepper has different flavor characteristics. Green peppercorn is aromatic, with less of a sharp flavor than black or white pepper.

12.17 Therapeutic Uses

In ancient times, pepper was used for bartering, as a bride’s dowry, a form of currency, and rent money. It was also used to preserve meats to prevent spoilage. Black pepper was traditionally used to treat headaches, constipation, and diarrhea. In India and China, pepper is widely used to improve circulation and to improve hypersensitivity to cold, coughs, asthma, kidney inflammations, and muscle and joint pains. Long pepper is used for those who suffer from sensitivity to cold temperatures. Cubeb oil is an ingredient used in throat lozenges.

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