Illicium verum

Star anise

Star anise fruits (*Illicium verum*)

Scientific classification	
Kingdom:	Plantae
(unranked):	Angiosperms
Order:	Austrobaileyales
Family:	Schisandraceae
Genus:	*Illicium*
Species:	***I. verum***

Binomial name
Illicium verum Hook.f.

Illicium verum, commonly called **Star anise**, **star aniseed**, or **Chinese star anise** is a spice that closely resembles anise in flavor, obtained from the star-shaped pericarp of *Illicium verum*, a medium-sized native evergreen tree of northeast Vietnam and southwest China. The star shaped fruits are harvested just before ripening.

Nomenclature and taxonomy

'Illicium' from Latin 'Illicio'=entice. In Persian, star anise is called بادیان *bādiyān*, hence its French name *badiane*. In northern India it is called *badian khatai*. It is saidWikipedia:Avoid weasel words that its origin is a place called *Khata* in China. In Malay it is called "Bunga Lawang". It is widely used in Malay cooking. In Tamil it is called as"அன்னாசி மொக்கு" ("Annachi mokku") and in Malayalam it is called "thakolam". It's called as "అనస్ పువ్వు" ("Anas puvvu") in Telugu.

Usages

Culinary uses

Star anise contains anethole, the same ingredient that gives the unrelated anise its flavor. Recently, star anise has come into use in the West as a less expensive substitute for anise in baking as well as in liquor production, most distinctively in the production of the liquor Galliano[*citation needed*]. It is also used in the production of sambuca, pastis, and many types of absinthe[*citation needed*]. Star anise enhances the flavour of meat.[*citation needed*] It is used as a spice in preparation of biryani and masala chai all over the Indian subcontinent. It is widely used in Chinese cuisine, and in Indian cuisine where it is a major component of garam masala, and in Malay and Indonesian cuisine. It is widely grown for commercial use in China, India, and most other countries in Asia. Star anise is an ingredient of the traditional five-spice powder of Chinese cooking. It is also a major ingredient in the making of *phở*, a Vietnamese noodle soup.

Reverse side of fruit

Medicinal uses

Star anise has been used in a tea as a traditional remedy for rheumatism, and the seeds are sometimes chewed after meals to aid digestion.[*citation needed*] As a warm and moving herb, star anise is used to assist in relieving cold-stagnation in the middle jiao, according to Traditional Chinese medicine.

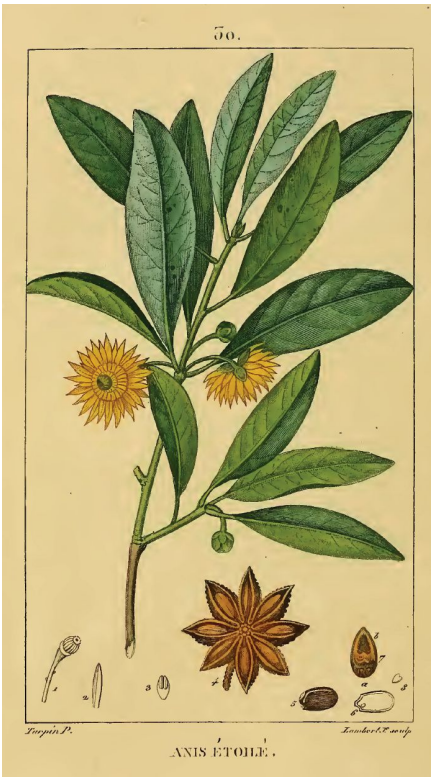

Plate from François-Pierre Chaumeton's 1833 "Flore Medicale"

Star anise is the major source of the chemical compound shikimic acid, a primary precursor in the pharmaceutical synthesis of anti-influenza drug oseltamivir (Tamiflu). Shikimic acid is produced by most autotrophic organisms and whilst it can be obtained in commercial quantities from elsewhere, star anise remains the usual industrial source. In 2005, there was a temporary shortage of star anise due to its use in the production of Tamiflu. Later that year, a way was found of using bacteria to make shikimic acid. Roche now derives some of the raw material it needs from the fermentation of *E. coli* bacteria. The 2009 swine flu outbreak led to another series of shortages as stocks of Tamiflu were built up around the world, sending prices soaring.

Star anise is grown in four provinces in China and harvested between March and May. It is also found in the south of New South Wales. The shikimic acid is extracted from the seeds in a ten-stage manufacturing process which takes a year. Reports say[*citation needed*] 90% of the harvest is already used by the Swiss pharmaceutical manufacturer Roche in making Tamiflu, but other reports[*citation needed*] say there is an abundance of the spice in the main regions - Fujian, Guangdong, Guangxi and Yunnan.

Japanese star anise (*Illicium anisatum*), a similar tree, is not edible because it is highly toxic; instead, it has been burned as incense in Japan. Cases of illness, including "serious neurological effects, such as seizures", reported after using star anise tea may be a result of using this species. Japanese star anise contains anisatin, which causes severe inflammation of the kidneys, urinary tract and digestive organs.The toxicity of *Illicium anisatum*, also known as

Shikimi, is caused by its containing potent neurotoxins (anisatin, neoanisatin, and pseudoanisatin), due to their activity as non-competitive antagonists of GABA receptors.[1]

Standardization of its products and services

- ISO 676:1995 - contains the information about the nomenclature of the variety and cultivars

Identification

- Refer to the 4th edition of the European Pharmacopoeia [1153].

Differentiation with other species

Joshi *et al.* have tried the techniques of fluorescent microscopy and gas chromatography to distinguished the species, while Lederer *et al.* employed the state of the art which combines the technology of TLC with HPLC-MS/MS.

Specifications

- ISO 11178:1995 - a specification for its dried fruits
- GB/T 7652:2006 - a Chinese standard of the product

References

[1] ("Apparent life-threatening event in infants: think about star anise intoxication!")

Bibliography

- ITIS 505892 (http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=505892)
- US FDA Advisory on star anise "teas" (http://www.fda.gov/ICECI/EnforcementActions/EnforcementStory/EnforcementStoryArchive/ucm095929.htm)

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