

Mastic (plant resin)

“Arabic gum” redirects here. It is not to be confused with Gum arabic.

Mastic (Greek: *Μαστίχα*) is a resin obtained from the



Mastic tears

mastic tree (*Pistacia lentiscus*). In pharmacies and nature shops, it is called “Arabic gum” (not to be confused with gum arabic) and “Yemen gum”. In Greece, it is known as the “tears of Chios,” being traditionally produced on that Greek island, and, like other natural resins, is produced in “tears” or droplets.

Originally a sap, mastic is sun-dried into pieces of brittle, translucent resin. When chewed, the resin softens and becomes a bright white and opaque gum. The flavor is bitter at first, but after some chewing, it releases a refreshing, slightly pine or cedar-like flavor.

The word *mastic* is derived from the Greek verb, *μαστιχεν* (*mastichein*) “to gnash the teeth”, which is the source of the English word *masticate*.^[1] The word *mastic* is a synonym for *gum* in many languages.

1 Commerce

Within the European Union, mastic production in Chios is granted **protected designation of origin**. The island’s mastic production is controlled by a co-operative of medieval villages, collectively known as the ‘Mastichochoria’ (*Μαστιχοχώρια*), which is also located in southern Chios. There is even a small Museum of Mastic in the village of Pyrgi.

Traditionally there has also been limited production of mastic on the Çeşme peninsula, on the Turkish coast only eight nautical miles from Chios, with similar ecological



A single drop of mastic hangs from the underside of this branch on a mastic tree.

conditions suitable for mastic production.^[2] The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats **TEMA** has been leading a project to protect the native mastic trees and to plant new ones in Çeşme peninsula to revive viable commercial production. As part of this project, which is expected to last through 2016, over 3,000 mastic tree saplings were planted between 2008 and October 2011 to over 368 acres (149 hectares) of dedicated farm land provided by the **Izmir Institute of Technology**.^[3]

The harvest takes place from the beginning of July to the beginning of October. First, the area around the tree is cleared and sprinkled with inert calcium carbonate. Then, every 4–5 days, 5–10 incisions are made in the bark of each tree. The resin flows from the incisions and solidifies on the ground. The pieces of dry mastic can then be collected for cleaning and eventual sale. In addition to mastic, mastic oil is also produced.

1.1 Imitations and substitutes

The rarity of mastic and the difficulty of its production make it expensive. As a result, imitations in the form of other resins appear in the market, sold as “mastic,” such as *Boswellia* or gum arabic. Other trees, such as *Pistacia*

palaestina, can also produce a resin similar to mastic. Yet other substances, such as pine tree resin and almond tree resin, are sometimes used in place of mastic.

2 Medicinal use

Mastic has been used as a medicine since antiquity and is still used in traditional folk medicine of the Middle East. In ancient Greece, it was given as a remedy for snakebite. The first-century Greek physician Pedanius Dioscorides mentions the healing properties of mastic in his book *De Materia Medica*. Hippocrates wrote that the mastic is good for prevention of digestive problems and colds, and Galenus suggested that mastic was useful for bronchitis and for improving the condition of the blood.

Mastic contains antioxidants and also has antibacterial and antifungal properties.^[4] A Nottingham University study published in the *New England Journal of Medicine* claims that mastic can cure peptic ulcers by killing *Helicobacter pylori* bacteria.^[5] Other studies have indicated that mastic has only a modest ability to eliminate *H. pylori* but have also suggested that refining mastic by removing the polymer poly- β -myrcene may make the active components, particularly isomasticadienolic acid, more available and effective.^[6]

One study found that high consumption of Chios mastic powder results in decreased levels of total serum cholesterol, LDL, total cholesterol/HDL ratio, lipoprotein (a), apolipoprotein A-1, apolipoprotein B, ALT, AST, and GGT.^[7] Mastic oil is widely used in the preparation of ointments for skin disorders and afflictions. In the past, it was also used in the manufacture of adhesive bandages.

2.1 Dental hygiene

Mastic may have some value in preventing tooth decay^[8] and gingivitis^[9] as well as chewing mastic reduces oral bacteria. In medieval times, mastic was highly valued by sultans' harems as a breath freshener and a tooth whitener. In India and Persia, mastic was used to fill dental cavities.

3 Use in food

See also: *Mastika* (liquor with mastic aroma)

Chios mastic is a known spice in the Eastern Mediterranean. It is commonly used for baking and cooking, adding its aroma to foodstuffs such as brioches, ice-cream and other desserts.^[10] It is especially known to the Arabian cuisine, but recently mastic is also increasingly used in Japanese cooking.^[11]

One of the earliest uses of mastic was as chewing gum; hence, the name. Mastic-flavored chewing gum is sold in Syria, Lebanon,^[12] Turkey, and Greece. Mastic is used

in ice cream, sauces, and seasoning in Lebanon. In Egypt, mastic is used in vegetable preserves, in jams that have a gummy consistency, in soups, and in the preparation of meats. In Morocco, mastic is used in the preparation of smoked foods.

In Syria, mastic is added to a specific type of ice cream which, along with other ingredients like salep, vanilla and pistachios, gives it not only a particular taste, but also a particular texture because of the way it's prepared.^[13]

In Turkey, mastic is widely used in desserts such as Turkish delight and dondurma; in puddings such as sütlaç, salep, and tavuk göğsü mamelika, and in soft drinks. It is also in Turkish coffee on the Aegean coast.

In the Maghreb countries, mastic is used mainly for cakes, sweets, and pastries and as a stabilizer in meringue and nougat.

In Greece, mastic is used in mastic liqueurs such as Chios Mastiha; in a spoon sweet known as “ypovríchio” (Modern Greek υποβρύχιο, or “submarine”, also commonly found in rose and vanilla flavours); in beverages, chewing gum, sweets, desserts, and breads; and in cheese. It is also used to stabilise Turkish delight (known in Greece as “loukoumia” (λουκούμια sing. “loukoumi” λουκούμι), and known in Turkey as “lokum”), and mastic-gum ice cream. In desserts, as an ingredient of jam or cakes, mastic replaces cornstarch and gelatin.

4 Other uses

Mastic is used in some varnishes. Mastic varnish was used to protect and preserve photographic negatives.^[14] Mastic is also used in perfumes, cosmetics, soap, body oils, and body lotion. In ancient Egypt, mastic was used in embalming. In its hardened form, mastic can be used, like frankincense or Boswellia resin, to produce incense.

5 History

During the Ottoman rule of Chios, mastic was worth its weight in gold. The penalty for stealing mastic was execution by order of the sultan. In the Chios Massacre of 1822, the people of the Mastichochoria region were spared by the sultan to provide mastic to him and his harem. *Sakız Adası*, the Turkish name for the island of Chios, means “island of gum”. The production of mastic was threatened by the Chios forest fire that destroyed some mastic groves in August 2012.

6 In religion

Some scholars identify the *bakha* (בכח) mentioned in the Bible with the mastic plant. *Bakha* appears to be derived

from the Hebrew word for weeping, and is thought to refer to the “tears” of resin secreted by the mastic plant.

Ancient Jewish halachic sources indicate mastiha/mastic a treatment for bad breath: “Mastic is not chewed on shabbat. When [is it not permissible to chew mastic on shabbat]? When the intention is medicinal. If it is used for bad breath, it is permissible.”^[15]

Mastic is an essential ingredient of chrism, the holy oil used for anointing by the Orthodox Churches.

7 See also

- Chios Mastiha liqueur (Greek alcoholic drink with PDO)
- Mastika (liqueur with mastic aroma)
- Megilp (art medium)

8 References

- [1] “Mastic @ The EpicentreThe Epicentre”. Theepicentre.com. Retrieved 2013-06-18.
- [2] Gönderen Burçin ÇOKUYSAL (1923-03-20). “Prof.Dr. Burçin ÇOKUYSAL: ECOLOGIC EVALUATION OF Pistacia lentiscus (MASTIC) IN ÇEŞME PENINSULA”. Burcincokuyosal.blogspot.com. Retrieved 2013-06-18.
- [3] TEMA Foundation. “Sakız Ağaçlarına Sevgi Aşılıyoruz Projesi'nde yeni bir dönem başlıyor”. Retrieved 2014-06-06.
- [4] Koutsoudaki C, Krsek M, Rodger A (October 2005). “Chemical composition and antibacterial activity of the essential oil and the gum of Pistacia lentiscus Var. chia”. *Journal of Agricultural and Food Chemistry*. **53** (20): 7681–5. doi:10.1021/jf050639s. PMID 16190616.
- [5] Huwez FU, Thirlwell D, Cockayne A, Ala'Aldeen DA (December 1998). “Mastic gum kills Helicobacter pylori”. *The New England Journal of Medicine*. **339** (26): 1946. doi:10.1056/NEJM199812243392618. PMID 9874617.
- [6] Paraschos S, Magiatis P, Mitakou S, et al. (February 2007). “In vitro and in vivo activities of Chios mastic gum extracts and constituents against Helicobacter pylori”. *Antimicrobial Agents and Chemotherapy*. **51** (2): 551–9. doi:10.1128/AAC.00642-06. PMC 1797732. PMID 17116667.
- [7] Triantafyllou, A.; Chaviaras, N.; Sergentanis, T. N.; Protopapa, E.; Tsaknis, J. (2007). “Chios mastic gum modulates serum biochemical parameters in a human population”. *Journal of Ethnopharmacology*. **111** (1): 43–49. doi:10.1016/j.jep.2006.10.031. PMID 17150319.
- [8] Aksoy A, Duran N, Koksal F (June 2006). “In vitro and in vivo antimicrobial effects of mastic chewing gum against Streptococcus mutans and mutans streptococci”. *Archives of Oral Biology*. **51** (6): 476–81. doi:10.1016/j.archoralbio.2005.11.003. PMID 16343417.
- [9] Takahashi K, Fukazawa M, Motohira H, Ochiai K, Nishikawa H, Miyata T (April 2003). “A pilot study on antiplaque effects of mastic chewing gum in the oral cavity”. *Journal of Periodontology*. **74** (4): 501–5. doi:10.1902/jop.2003.74.4.501. PMID 12747455.
- [10] http://www.mastic.gr/contents/en-us/d13_mastic_gum_mastiha_info_mastixa.html
- [11] Belles, Christos (2005). *Mastiha Island*. Athens: Ellinika Gramatta Press. p. 220. ISBN 978-960-89048-9-7.
- [12] Lebanese Chiclets
- [13] <https://www.youtube.com/watch?v=g42frtQ7g7w>
- [14] William Henry Burbank (1888). *The Photographic Negative*. p. 128.
- [15] *Tosefta, tractate Shabbat*. Chapter 13, Mishna 7.

9 External links

- Mastic on greeka.com
- Mastic article from masticulture.com
- Mastiha World, liquor company

10 Text and image sources, contributors, and licenses

10.1 Text

- **Mastic (plant resin)** *Source:* [https://en.wikipedia.org/wiki/Mastic_\(plant_resin\)?oldid=732966753](https://en.wikipedia.org/wiki/Mastic_(plant_resin)?oldid=732966753) *Contributors:* Edward, Stone, Yekrats, Anthony Appleyard, Woohookitty, Mandarax, Srleffler, Chris Capoccia, Ergener, IceCreamAntisocial, Saltmarsh, SmackBot, Slashme, Chaojoker, Tripledot, Cplakidas, Just plain Bill, Andrew Dalby, Ginkgo100, Thijs!bot, Pepperbeast, Widefox, JAnDbot, WhatamIdoing, BeadleB, Bongomatic, DASonnenfeld, Kindime, Idioma-bot, Shinju, TXiKiBoT, Broadbot, Calliopejen1, Mjphiladelphia, Tomas e, Vardos, Scyldscefig, Felix Folio Secundus, Addbot, Luckas-bot, Yobot, Citation bot, Obersachsebot, Xqbot, Imoutsatsos, Anna Frodesiak, GrouchoBot, Darwinius, FrescoBot, LucienBOT, D'ohBot, MGA73bot, פאָרר1979, Citation bot 1, Rushbugled13, MondalorBot, To-beBot, Awesong, Igel B TyMaHe, EmausBot, MFdeS, Dcirovic, ZéroBot, פּאַרר1979, Erianna, MALLUS, Jeaniac, Petrbr, ClueBot NG, Andre2812, Swampgator94, BG19bot, Cold Season, Jacopo188, Greenknight dv, Justincheng12345-bot, YFdyh-bot, Dexbot, Jose Corregidor, Monkbot, Epigogue, AwiarN, Avarosalia and Anonymous: 53

10.2 Images

- **File:Commons-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/en/4/4a/Commons-logo.svg> *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Free-to-read_lock_75.svg** *Source:* https://upload.wikimedia.org/wikipedia/en/8/80/Free-to-read_lock_75.svg *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Gotaq.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/2/2f/Gotaq.jpg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Ailinaleixo
- **File:Mastic.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/78/Mastic.jpg> *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Merge-arrows.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/5/52/Merge-arrows.svg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Teinture_naturelle_Millepertuis_2.jpg** *Source:* https://upload.wikimedia.org/wikipedia/commons/9/91/Teinture_naturelle_Millepertuis_2.jpg *License:* Public domain *Contributors:* Own work *Original artist:* Vassil
- **File:Wiktionary-logo-v2.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/0/06/Wiktionary-logo-v2.svg> *License:* CC BY-SA 4.0 *Contributors:* Own work *Original artist:* Dan Polansky based on work currently attributed to Wikimedia Foundation but originally created by Smurrayinchester

10.3 Content license

- Creative Commons Attribution-Share Alike 3.0