

Liquidambar orientalis

Liquidambar orientalis, commonly known as **oriental sweetgum** or **Turkish sweetgum**,^[1] is a deciduous tree in the genus *Liquidambar*, native to the eastern Mediterranean region, that occurs as pure stands mainly in the flood plains of southwestern Turkey and on the Greek island of Rhodes.



Foliage of Liquidambar orientalis

1 Biotope

The forests of this Tertiary relict endemic taxon are found notably within a specially protected area between Dalyan and Köyceğiz in Muğla Province, where a 286 hectares zone is set aside as a nature reserve and arboretum for the preservation of the species. A large stand also surrounds Marmaris. These two areas are the better known oriental sweetgum forests due to their respective regions also being prominent centers of tourism, although a big population covering nearly 100 hectares is also found in an inland region within Aydın Province extending between Çine, Köşk and Umurlu districts. Yet another sweetgum forest area (88.5 hectares) under protection is situated in Burdur's depending district of Bucak alongside Kara-

caören dam reservoir on the road to Antalya.^[2] The trees are also found locally in Denizli's depending districts of Beyağaç and Tavas.^[3] The total area of pure sweetgum forests in Turkey covers 1,348 hectares, all in the southwestern regions of the country. The present-day extension corresponds to a marked decrease since the 1940s level of 6000-7000 hectares, although the protective measures and infrastructure in place since the 1980s helped stop loss of stands and led to slight improvements.

2 Etymology

The name in Turkish for the particular species is *Günlük ağacı*, while the trees of the genus as a whole are called *Sığala ağacı*, a name also used in sole reference to *oriental sweetgum* itself. *Günlük ağacı* means “a frankincense/myrrh tree [ağaç]” in which the first element is of unknown origin, whereas *sığala* refers to “a boggy place”.

3 Production and medicinal uses



Trunks at Kavakarası liquidambar forest



Local woman at Kavakarası collecting the sap of the liquidambar orientalis

The extraction of its sap and the production of an oil based thereof (*siğala yağı*), as well as exports of these products, play an important role in the local economy.

The harvest of the sap and the preparation of the oil involve quite strenuous tasks lasting from May to November and consisting of several separate phases. The thick sap is obtained in the period June–September by gradually stripping ¼ of the total trunk lengthwise.^[4] While wounding the trunk sap emerges, which can be stimulated by tapping the trunk. In the village of Kavakarası near Köyceğiz in the Turkish province of Muğla, locals scrape the sap from the wounded tree trunks using the sharp edge of plastic bottles.

The stripped sap is put in boiling water to soften, then pressed. The styrax is then diluted with ¼ water, keeping it soft and preserving its aroma. By steam distillation a light yellow oil is obtained, which can be used for medical applications. There is a danger for the present generation of master oil makers not being replaced in near future.^[5]

In English, this oil is known under several names, shortly as Storax to include all sweetgum oils, or as Styrax Levant, Asiatic Storax, Balsam Storax, Liquid Storax, Oriental Sweetgum Oil, or Turkish Sweetgum Oil. Diluted with a suitable carrier oil, it is used externally in traditional medicine for abrasions, anxiety, bronchitis, catarrh, coughs, cuts, ringworm, scabies, stress-related conditions and wounds.^[6] It is a different product from the benzoin resin produced from tropical trees in the genus *Styrax*.

The hydrocarbon styrene is named for Levant styrax from this species (*Liquidambar orientalis*), from which it was first isolated, and not for the genus *Styrax* itself; industrially produced styrene is now used to produce polystyrene plastics, including Styrofoam.

4 Prospects



A grove of Turkish sweetgum trees in south-west Turkey, between Marmaris and Dalaman.

The status of and developments regarding the protec-

tion of Turkish Sweetgum continues to occupy local and national environmental agenda at a critical level in Turkey. Among the main causes for the loss of sweetgum forests was the cutting and felling of trees for opening new fields for agriculture, as well as the construction of three separate dams at localities which precisely corresponded to important habitats for the species. As such, *Liquidambar orientalis* holds an important position in Turkey's biodiversity and among endemic species, is one of its best-known symbols.

5 References

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6 Footnotes

- [1] Todd Lasseigne. "Horticulture". *Friends of the Arboretum Newsletter Fall 2000-Winter 2001*. North Carolina State University J.C. Raulston Arboretum. Retrieved 2007-05-18.
- [2] Kargı Sweetgum Forest "Bucak Kargı village Protected Natural Area map and information" Check [lurl= value \(help\)](#) (in Turkish). Burdur General Directorate of Environment and Forestry.
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- [5] Atlas magazine April 2006 edition "Son Amber (*The last amber*)" Check `lurl= value (help)` (in Turkish). Atlas (magazine).
- [6] Styra - Levant "Guide to Essential Oils" Check `lurl= value (help)`.

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