Insights on Europe's small-leaved and large-leaved lime trees from the European Atlas of Forest Tree Species

Editors: San-Miguel-Ayanz, J., de Rigo, D., Caudullo, G., Houston Durrant, T., Mauri, A.


Middle right: Downy oak (Quercus pubescens), Pyrenees, Spain. © Alfonso San Miguel, CC-BY, commons.wikimedia.org. Archived at: http://archive.is/rCDbO.

Chorology is also referred to as regional geography. Chorology stems from the Greek word khōros for “place” or “space” and the suffix -logy for the “study of”. With lime tree’s relative drought-tolerance and preference for warmer temperatures, the range may increase in a warming climate.
Tilia cordata Mill., known as small-leafed lime, and Tilia platyphyllos Scop., known as large-leafed lime, are very similar trees, both native to Europe and liking warmer climates. Growing into large trees, they occur from southern Finland to southern Italy, and from the Caucasus to north-west Spain and Wales.

Limes prefer lowlands to higher elevations and have been a component of European woodlands for six millennia. Coppicing* has been a common form of management for limes, as they produce long straight poles and can be very long-lived (>2,000 years) in this form. Lime wood is much valued for carving, as it is soft and resistant to splitting.

*as discussed later in this slide set

Both an attractive tree and an excellent candidate for field measurement for GLOBE Trees!
Small-leafed lime (Tilia cordata Mill.) and large-leafed lime (Tilia platyphyllos Scop.) are large-sized deciduous broad-leaved trees. They are long-lived, able to survive more than 1,000 years even if coppiced. The small-leafed lime is the more common species in Europe, but the large-leafed lime extends farther south.

Both species can reach 30-40m in height with straight trunks up to around 1m in diameter which are largely free of epicormic growth, unlike their hybrid Tilia × europaea (common lime).

Epicormic sprouts, also known as “suckers” or “water sprouts”, are growth that emerge from dormant buds along the trunk and branches of a tree.

Another excellent candidate for field measurement for GLOBE Trees!
Despite their common names, the leaves of these two tree species are very similar: both are often around 9cm long, with T. platyphylllos up to 15cm; pointed tips to the leaves are common to both, as are a cordate, or heart-shaped form. Their mature high crowns can allow a branch-free bole or trunk of 10-15m in length making them desirable for timber.
Both species flower profusely in June and July. The white or pale flowers, which are insect-pollinated, are fragrant and occur in clusters of 4 to 5. Seeds are first produced around 30 to 40 years of age, and every 2-3 years trees produce a reasonable crop of seeds. Honey from the flowers of lime trees is also much valued, and a tea made from the flowers (Tilleul) has long been thought to have anti-inflammatory properties.
Both main lime tree species in Europe produce a wood that is light in color and soft enough to carve, but resistant to splitting. Some of the earliest uses of lime wood includes bows and shields, as well as “bast”, which is a tough fibrous material derived from the inner bark and used for rope and clothing.

As the wood of both lime tree species can be worked easily, it has been a favored material for carving since the Middle Ages, as well as for musical instruments, clogs, beehives, and cuckoo clocks. One common use of lime trees has been as a street tree in much of Europe, notably Unter den Linden in the center of historic Berlin.
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Both main lime tree species are generally quite disease resistant. Bleeding stem cankers caused by Phytophthora spore-type plant pathogens have been recorded on limes. The small-leafed lime is more sensitive than the large-leafed lime to some types of Phytophthora. Aphids can be a problem, but to a much lesser extent with the small- and large-leafed limes than with the common lime tree. Limes trees are susceptible to being attacked by the gypsy and by the nun moth.

*Coppicing is a technique which involves repeatedly harvesting smaller trees every 30 or so years but leaving an upper story of larger trees for longer periods (60, 90, or 120 years). This ensures a steady supply of both firewood and construction timber. This approach also imprints a characteristic tree ring pattern in a forest’s upper story trees: thick rings indicative of heavy growth, which appear at regular intervals as the surrounding smaller trees are cut down.

Adapted from: Tree Rings Reveal How Ancient Forests Were Managed
https://eos.org/articles/tree-rings-reveal-how-ancient-forests-were-managed

By analyzing thousands of oak timbers dating from the 4th to 21st centuries, scientists have pinpointed the advent of a forest management practice. The characteristic tree ring pattern has been dating to as early as the 6th century.

For further insights please see E. Eaton, G. Caudullo, D. de Rigo, 2016. Tilia cordata, Tilia platyphyllos and other limes in Europe: distribution, habitat, usage and threats, pp. 184-185