

Potted Science- Number 1- The Biology of the Bay Tree

(*Laurus nobilis*)

By M. N Jones at *TheGreatestMinds.Org*



In this new, exclusive series for *The Greatest Minds*, former research scientist M.N. Jones takes a look at some of the science behind our favourite edible plants.

The beautiful evergreen Bay Tree or Bay Laurel, *Laurus nobilis*, is a very familiar sight to most gardeners- whether as part of the herb garden or a patio tub-plant. As a member of the Laurel family, Lauraceae, the bay is a relative of the camphor tree (*Cinnamomum camphora*), the avocado (*Persea americana*) and the various cinnamon-producing trees, such as the Sri Lankan species *Cinnamomum verum*. Bay itself, is native to the Mediterranean region and was used to make the laurel wreaths

awarded to champions in the ancient Greek Olympics.

Today, of course, most people associate bay with cookery rather than sporting activities and much of the scientific research conducted on the plant relates to its culinary uses. It has been shown that extracts of bay leaves inhibit the growth of certain harmful food bacteria, including the notorious O157 H7 strain of *E.coli* that has caused a number of fatalities during recent food poisoning outbreaks in the UK. Bay is not the only herb known to have this effect – compounds extracted from Turkish oregano, Spanish lavender and fennel have all been found to have similar effects, although the chemicals responsible are different in each herb.

Other scientific studies have investigated the best way to preserve bay leaves, comparing traditional methods, such as letting leaves dry on wooden trays in a darkened cupboard or shed, with more modern or industrial techniques, such as freeze drying. The traditional methods were found to be very effective and bay leaves that were either dried in the dark at room temperature or oven dried at 45°C retained their true aromas and chemical balance far better than those that were frozen or freeze dried.

Not all of the scientific research on bay trees has been about their natural chemicals, however; a team of researchers based in Florence, used trees dotted around Tuscany to monitor the levels of air

pollution in the area from car exhausts and domestic heating. The scientists measured levels of certain Poly-Aromatic Hydrocarbons, (chemicals found in polluted air that are known to cause cancer) in the leaves of bay trees in the area, allowing them to trace the primary sources of air pollution in the region.

“The Greatest Minds” Top Tips:

- - Tub grown bay trees are often attacked by scale – if possible, rub off with a cloth and soapy water, rather than spraying, especially if the leaves are ever used for cooking purposes.
- - Untrimmed bay trees can grow to an astonishing three to five and a half metres (ten to eighteen feet) tall- plants can be pruned for aesthetic or decorative reasons in the summer, whilst any frost-damaged stems and leaves can be removed in spring.



More on Bay Trees:

- 1) “The Tree and Shrub Expert” - D. G. Hessayon, Pub: Expert Books, Transworld Publishers, London, 2008, ISBN 978-0-903-50517-8 (page 36),
- 2) “Grow your own Vegetables, Fruit and Herbs”- Ed: Susan Joiner, Pub: Phoebus Publishing Company, London, 1977 edition, ISBN 0-7026-0030- X

Less Potted, More Science:

-“Effect of Drying Method on the Volatiles in Bay Leaf (*Laurus nobilis* L.)”, M. Consuelo Díaz-Maroto, M. Soledad Pérez-Coello, and M. Dolores Cabezudo, *Journal of Agricultural Food Chemistry*, 2002, Volume 50 (16), pages 4520–4524

-“Chemical Compositions and Antibacterial Effects of Essential Oils of Turkish Oregano (*Origanum minutiflorum*), Bay Laurel (*Laurus nobilis*), Spanish Lavender (*Lavandula stoechas* L.), and Fennel (*Foeniculum vulgare*) on Common Foodborne Pathogens”, Itir Dadalioglu and Gulsun Akdemir Evrendilek, *Journal of Agricultural Food Chemistry*, 2004, Volume 52 (26), pages 8255–8260.

-“Polycyclic aromatic hydrocarbons in *Laurus nobilis* leaves as a measure of air pollution in urban and rural sites of Tuscany”, Maura Lodovici, Victor Akpan, Chiara Casalini, Carolina Zappa and Piero

Dolara, Chemosphere, April 1998, Vol. 36 (8), pages 1703-1712.

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Plant-based remedies can be harmful as well as/instead of beneficial- contact a qualified medical doctor or pharmacist for professional advice before taking any such remedies.

The author, editor and publisher take no responsibility for any problems caused by consumption of the plants discussed.

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