Chapter 35
Nutritional and Pharmacological Properties of Bay Leaves (Laurus nobilis L.)

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ABSTRACT

Laurus nobilis L., commonly known as bay leaves, is native to the southern Mediterranean region. It is a small tree belonging to the genus Laurus of the family Lauraceae. The essential oils created from the different parts of this plant, such as the leaves and flowers, have been used in the food, drug, and cosmetic industries. The essential oil chiefly consists of 1,8-cineole, sabinene, α-pinene, and p-Cymene. Researchers have reported that bay leaves possess various biological and pharmacological properties, such as antibacterial, antifungal, antioxidant, insecticidal, and nematicidal activities. Pharmacological studies found that bay leaf oil could be a promising candidate with the potential for designing new drugs. The goal of this review is to summarize the ethnomedicinal importance, phytochemistry, and wide spectrum of pharmacological and therapeutic applications of bay leaves, which will be useful to researchers for further study.

INTRODUCTION

The olfactory quality of food has been improved by spices for many centuries. Spices are natural flavours, aroma enhancers, along with food preservatives. Spices are also considered safe and effective against certain clinical manifestations, and some researchers also state that they possess therapeutic properties, such as being antidiabetic, antihypertensive, antiulcerative, antialergic, antibiotic, etc. (Abu-zaid, Al-opidi, &El-Sehrawy, 2013). Bay leaves possesses many bioactive compounds, including anthocyanins, isoflavones, and flavonoids (Al-Hadi, 2011). Many spices show therapeutic potential, such as turmeric, which has traditionally been referred to as anti-infectious, anti-inflammatory, and as having a cholesterol lowering effect.

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Laurus nobilis, or bay leaf, belongs to the Lauraceae plant family. It is a tropical and subtropical tree that grows in the Himalayas at an altitude of 900 to 2500 meters(Garg, Siddiqui, &Agarwal, 1992). It is also grown in Asia, Australia, the Pacific region, and South Asia. It is a native spice of India and grown in Uttarakhand and Himanchal Pradesh, along with Sikkim, Assam, Mizoram, and Meghalaya, and also in the Western Himalayan region(Dighe, Gursale, Sane, Menon, & Patel, 2005). Preferably, it is grown in a warm region of the world, such as Southern Europe, and around the shores of the Mediterranean Sea (Lewis, 1984). It is a small tree with small flowers that are four-lobed. The ripe fruit is 10-15 mm in size, ovoid, and black when ripe. The leaves are plucked and dried under shade for use as a flavouring material in a variety of meal preparations. The leaves are as a seasoning for soups and condiments. In some studies, bay leaf oil showed anti-bacterial activity against Salmonella enteric and E. coli.

The bay leaves are a traditional ingredient of French cuisines. They are also characteristic of the cuisines of India, Germany, and Eastern Europe. The leaves are used to add a pleasing aromatic flavour to many different dishes, such as chicken, sauces, soups, and bland vegetables. Due to its unique aroma, bay leaves are commonly also used in soaps and in the perfume industry. Despite increasing the flavour, aroma, and palatability of foods, they also have many therapeutic properties, such as being anti-inflammatory, antioxidant, antifungal, and anti-bacterial. Bay oils are used for bruises and sprains. In traditional medicine, bay leaves and their oil have been used primarily for curing digestive problems, which include flatulence, bloating, and other gastrointestinal complaints. The pharmacological and therapeutic properties of bay leaves and its fruits are due to the presence of bioactive constituents, such as alkaloids, alkaloids (kaempferol, myricetin), flavanol (apigenin and luteolin), glycosylated flavonoids, and sesquiterpene lactones. The present chapter focuses on the pharmacological as well as traditional properties of bay leaves.

TAXONOMY, BOTANY AND CHEMICAL COMPOSITION OF BAY LEAVES

Taxonomic Classification

Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Laurales
Family: Lauraceae
Genus: Laurus S
Species: Nobilis

Botanical Description

Laurus nobilis L. is a small, hardly multi-branched tree, attaining a height of 20-30 feet (Said &Hussein 2014). The trees have small, four-lobed flowers that are pale yellow-green in colour and approximately one centimetre in diameter. The ripe fruit is 10-15 mm, ovoid, black, and single-seeded. The leaves are alternate, smooth, narrowly oblong-lanceolate, and about 2.5-8 cm (1 to 3 inches) long. When fresh, the leaves are shiny and dark green on top with lighter undersides. When dried, the bay leaf is a matte olive green in colour. The leaves are plucked and dried under shade for use as flavouring in a variety of