

PRODUCTION OF MEDICINAL PLANTS IN AGROFORESTRY SYSTEMS

Laurus nobilis L.



THE WHAT AND WHY

Importance of bay Laurel

The laurel (bay laurel, sweet, bay, true laurel, Greek laurel, laurel tree) is a woody plant linked to the Mediterranean region, distributing in the Iberian Peninsula mainly in humid and shady ravines of the coastal regions, both Mediterranean and Atlantic. Laurel is a plant easy to grow, with a possibility of establishment as silvoarable or as a silvopasture practices and a potentially broad market. In Galicia an import-export company buys the bay leaf (www.centralgalaicadeplantas.es). In Galicia it appears above all in low altitudes (<400 m), coastal areas and also in riverbank forests. This specie is widely cultivated and naturalized throughout the peninsula, being a very versatile plant when practical usefulness and possible economic returns are considered.



Laurus nobilis morphology
Franz Eugen Köhler, Köhler's Medizinal-Pflanzen.

HOW IS THE CHALLENGE ADDRESSED

Cultivation of Laurel

Dried bay leaves world trade exceeds 2000 t/year. Western Europe imports 800 t/year. In Galicia (NW Spain), wild populations are collected in the coastal regions (around 2 t/year). Since laurel market is deficient and the supply to companies is almost exclusively from natural populations, crop should be promoted. The crop can be made from both fresh seed previously soaked (germination takes 3 to 4 months and seedlings can be transplanted after 2 years) and by cutting (mature buds 10-12 cm long with apical buds). By cutting, leaves harvest can be carried out in the first year after establishment. Planting distance depends on the collection method and water availability. For small farmers who harvest manually, 3x3m is recommended, gradually thinning to 6x6m. In commercial

Laurel leaves and fruits are used from ancient times with medicinal purposes as astringent, stomachic, stimulant and narcotic. Leaves decoction is used to treat problems of the urinary organs and dropsy. Laurel is also considered a powerful emmenagogue to facilitate women menstruation. Seed oil is used to treat rheumatic pain.

Leaves have also been traditionally used as condiment. Crushed or powdered bay leaves are an essential ingredient in product mixes and are used industrially in meat products, sauces, vinegar and cakes. Also, an essential oil is steam distilled from the leaves in the USA. Leaves are also employed as preservatives and insect repellent. The oil extracted from its leaves and fruits are used in cosmetics but also as biodiesel.



Culinary use of Laurel
Productos Ruca; Artemis; Juan Martel Henríquez; La Chinata.

irrigated plantations in Israel, spacing is 2-3m, while in Russia 0.5x2m hedges are used in plantations mechanically harvested. Laurel can also be intercropped with annual crops (especially in the first 2-4 years). This will provide additional revenue to the producer and also ease weeds management. Laurel farming can fit agroforestry practices (silvopasture/silvoarable). To obtain a good quality product, cultivated area should have mean annual temperatures 8-27 ° C and 300-2200 mm annual precipitation, low frost probability and high sunlight intensity. Once harvested, bay leaves and/or berries have to be dried to stabilize bioactive compounds. To reduce costs, leaves drying can be done by hand in thin layers in trays and a protected area for 12-15 days.



HIGHLIGHTS

- Laurel is a plant with a strong potential to be used in combination with agroforestry practices, both silvoarable and silvopasture.
- Value chain and farmer cooperation should be promoted to better develop the market and the added value.



Laurel made cosmetics, soap.
Eugenio Cuppone

FURTHER INFORMATION

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ADVANTAGES AND DISADVANTAGES

Laurel advantages and disadvantages

Advantages:

It is an easy plant to establish for cultivation. The economic return is faster when vegetative material is used for establishment as leaf collection is possible during the first year. The crop admits two annual cuts of leaves and one for fruits, making it more profitable.

It is a woody crop that can be established in an integrated system (silvopasture/silvoarable).

Once the plantation is established, the commercial plantation duration is very high, reducing establishment costs at long term compared with other species.

It is a plant adapted to the Galician territory, integrated into its landscape and accepted by the population.

Possibility of obtaining artisanal products from direct sale easily (leaves as a condiment, flavored oils, soaps)

Disadvantages

From a scientific point of view, there is a lack of studies to evaluate if there are differences in production and quality in the currently used plant material (wild populations). The most productive and best quality would be those that should be cultivated. This would allow establishing own denominations and quality standards.

The cultivation area should be limited to the littoral zone and influence areas of the river valleys, since the quality of the plant depends to a great extent on the environmental factors (especially temperature and humidity). It is a crop whose performance on bioactive substances depends on environmental conditions.

Being a new crop, there is few information about the economic meaning of the laurel pest and disease damages. The two main known laurel diseases are the root rot caused by *Phytophthora* spp. and leaf spot caused by *Colletotrichum* spp.

The harvest is usually done manually which increases the production costs.

Appropriate marketing channels should be established.

If this activity attracts several producers, an association should be promoted.

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