

AGRO-SILVO-PASTORAL SYSTEMS

CGIAR RESEARCH PROGRAM ON LIVESTOCK

Aims to increase the productivity of livestock agri-food systems in sustainable ways across the developing world.

Managing rangelands: promoting pastoral species that are more popular and widely effective medicinal values

Rosmarinus officinalis: a multi-purpose species; a medicinal, aromatic, and ornamental plant

Rosmarinus officinalis L., or rosemary plant, known as Iklil in classical Arabic, belongs to the Lamiaceae family. Rosemary is a native plant of the arid regions of the Mediterranean. However, this plant is cultivated in warm, dry climates throughout the world and prefers calcareous, well-drained soils.

Rosemary is usually an erect shrub 1.5 m in height, always green, straight, very branching, and very leafy with an aromatic odor. The leaves are long and thin, sessile, leathery, linear, evergreen, and

Benefits:

- Drought tolerant
- Medicinal, aromatic, and ornamental plant
- Home gardening
- Melliferous species
- Widely used culinary spice



Scientific name:
Rosmarinus officinalis L.

Common names:

Rosemary

إكليل

Locations:

Mediterranean Basin

rolled by the edges. The flowers are violet-blue or whitish, with a very small peduncle. The calyx and corolla are two-lipped, the latter around 1.25 cm in length and enclosing two stamens. The fruits are tetrachen with free achenes, oblong, smooth, and brownish.

Rosemary has been commonly exploited for a long time for the quality of its essential oil, which is widely used in cosmetics and in some pharmaceutical industries. The highest-quality essential oil is obtained from the leaves. This oil can be used for various applications such as adding aroma to food. Rosemary is a widely used culinary spice.



Rosemary growing on dry and rocky hills (Tataouine-Tunisia)



Rosemary essential oil is used in aromatherapy



Erect branches with long leaves and violet-blue flowers

It imparts a wonderful flavor to meats, savory dishes, and salads. It is used sparingly in herb mixes because of its intense scent.

Rosemary has antimicrobial activities against a variety of bacteria, fungi, molds, and viruses. Its anticancer effects have been numerous reported and include inhibition of skin tumors among others. The fresh leaves are typically consumed in low quantities by ruminants. Individual rosemary plants present a seasonal pattern of herbivory that is limited to the flowering period. To conserve biodiversity and improve forage production, *Rosmarinus officinalis* is used for rangeland rehabilitation.

Establishment and Management

Rosemary is widely used because of its good resistance to adverse environmental conditions. This plant avoids water stress by adjusting the growing period or by limiting water loss by reducing its transpiring surface. These properties may be of use for successful gardening in semiarid conditions, which could promote considerable savings in water while maintaining the ornamental value of the plants. A rooted rosemary plant from a cutting will mature quicker than a plant started from seed. Rosemary seeds tend to have low germination rates and take a long time to sprout and grow.

Flowering occurs between April and October, and the seeds ripen from August to October. The species is hermaphrodite and is pollinated by bees.

Adaptable, morphologically variable, and easily managed, rosemary makes an ideal garden plant. Therefore, much of rosemary's natural variation is in cultivation, and a resurgence of interest has been shown because of the plant's ability to grow in circumstances where water is limited.

Nutritional composition

Nutrient and mineral content of rosemary from arid rangeland of southern Tunisia

Nutrients	DM	Ash	CP	NDF	ADF	ADL
(%)	50	6.20	8.36	45.87	34.52	16.7
Minerals	Fe	Zn	Cu	Mn	Ca	Mg
(g/kg)	0.01	16.6	4.30	6.30	2.76	0.45

DM: dry matter; CP: crude protein; NDF: neutral detergent fiber; ADF: acid detergent fiber; ADL: acid detergent lignin

Effective Management

- Prefers well-drained, calcareous soils
- Grows outdoors and prefers full sun
- Propagates well via stem cuttings
- Can be harvested three times per year at intervals of three to four months.

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ICARDA's Rangeland Ecology and Forages (REF)

The REF team promotes advances in rangeland ecology and pasture management in the dry areas. This series of factsheets is dedicated to the characterization of promising range and forage species aimed at alleviating the feed gap, limiting water runoff and soil erosion, restoring degraded rangelands and maintaining a healthy ecosystem.