

Master data ingredient / monograph

Ingredient/plant: Rosemary (*Rosmarinus officinalis*)

Scientific name: *Rosmarinus officinalis*
Division: Magnoliophyta
Class: Magnoliopsida
Order: Lamiales
Family: Lamiaceae
Genus: *Rosmarinus*
Species: *Rosmarinus officinalis*

Description:

Rosemary (*Rosmarinus officinalis*) is a woody, perennial herb with fragrant evergreen needle-like leaves. It is native to the Mediterranean region. It is a member of the mint family Lamiaceae, which also includes many other herbs. Forms range from upright to trailing; the upright forms can reach 1.5 m tall, rarely 2 m. The leaves are evergreen, 2-4 cm long and 2-5 mm broad, green above, and white below with dense short woolly hairs. The flowers are variable in color, being white, pink, purple, or blue.

The name *rosemary* has nothing to do with the rose or the name Mary, but derives from the Latin name *rosmarinus*, which literally means "dew of the sea", though some think this too may be derived from an earlier name.

The fresh and dried leaves are used frequently in traditional Mediterranean cuisine as an herb; they have a bitter, astringent taste, which complements oily foods, such as lamb and oily fish. A tisane can also be made from them. They are extensively used in cooking, and when burned gives off a distinct mustard smell, which can be used to flavor foods while barbequeing.

Rosemary is easily pruned into shapes and has been used for topiary. When grown in pots, it is best kept trimmed to stop it getting too straggly and unsightly, though when grown in a garden, rosemary can grow quite large and still be attractive. It can be propagated from an existing plant by clipping a shoot 10-15 cm long, stripping a few leaves from the bottom, and planting it directly into soil.

Since it is attractive and tolerates some degree of drought, it is also used in landscaping, especially in areas having a Mediterranean climate. It can in fact die in over-watered soil, but is otherwise quite easy to grow for beginner gardeners. It is very pest-resistant.

Properties:

Rosemary has a very old reputation for improving memory, and has been used as a symbol for remembrance (during weddings, war commemorations and funerals) in Europe, probably as a result of this reputation. Students in ancient Greece are

reported to have worn sprigs of rosemary in their hair while studying for exams to improve their memory, and mourners would throw it into graves as a symbol of remembrance for the dead. In Shakespeare's *Hamlet*, Ophelia says, "There's rosemary, that's for remembrance".

Extracts of Rosemary leaves have been found to be a stimulant and mild analgesic, and have been used to treat headaches, poor circulation, and many ailments for which stimulants are prescribed. Rosemary is not in wild by nature, even if its labeled as being so.

It can be used as a disinfectant, as a mouth wash and to treat fever or rheumatism. Externally it can be used in hair lotions; a few drops of Rosemary oil massaged into the scalp, then rinsed with an infusion of nettles can revitalize the hair. Used in this manner, it is supposed to prevent premature baldness. Rosemary is also reported to stop dandruff.

Pharmacological properties:

Active ingredients

Rosemary leaves and twigs contain:

- essential oil 1,0 – 2,5 %: main components are 1,8-cineol (20-50 %), α -pinen (15-25 %), camphor (10-25 %), camphene, borneol, bornyl acetate, limonene, myrcene, α -terpineol and verbenone.
- diterpenes
- caffeic acid: main component: rosemalic acid
- flavonoides
- triterpenes
- carnosol
- ursolic acid

In general Rosemary is used to treat the following conditions or symptoms:

- digestive
- circulatory disorders
- pain (neuralgia, muscle pain)
- mild spasms
- rheumatism
- wounds and eczema
- depression

Traditionally, Rosemary has been used as an antispasmodic and diuretic (for increasing urine production). In addition, it stimulates menstrual blood flow. Externally, this herb has been used as a poultice to heal wounds.

In vitro investigations revealed different effects:

a) slight antimicrobial and antiviral effects

There is some experimental evidence that Rosemary exerts slight antimicrobial and antiviral effects. It is suggested that these effects are caused by diterpenes of Rosemary oil.

b) spasmolytic properties

In animal studies was shown, that Rosemary exerts spasmolytic properties on the biliary tract. Furthermore a stimulating effect on the bile flow from the gall bladder and a hepatoprotective effect was revealed (Hoeffler C. et al. 1987).

c) further effects

- Anti-mutagenic and tumour inhibiting effects of Rosemary were shown in different animal studies (Huang M.T. et al. 1994; Offord E.A. et al. 1995).
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Topical and Cosmetic properties:

- Due to its antimicrobial effects , It can be used as a disinfectant, as a mouth wash.
- Rosemary oil is used externally as a rubefacient and is added to liniments as a fragrant stimulant.
- Externally administered, Rosemary stimulates blood circulation, due to a skin irritation.
- Externally it can be used in hair lotions; a few drops of Rosemary oil massaged into the scalp, then rinsed with an infusion of nettles can revitalize the hair. Used in this manner, it is supposed to prevent premature baldness. Rosemary is also reported to stop dandruff
- Rosemary and its constituents carnosol and ursolic acid have been shown to inhibit the growth of skin tumors and to provide a natural anti-oxidant protection against skin cancer and photodamage
- Hungary water, for outward application to renovate the vitality of paralysed limbs, was first invented for Elizabeth, Queen of Hungary, who was said to have been completely cured by its continued use. A formula dated 1235, said to be in the hand-writing of Elizabeth, is said to be preserved in Vienna. It was used externally and prepared by mixing 180g of fresh rosemary tops in full flower into a liter of spirits of wine. Leave to stand for four days then distill. It is also supposed to work as a remedy against gout if rubbed vigorously on hands and feet.
- Until now Rosemary is also one of the ingredients used in the famous preparation of Eau-de-Cologne.

Possible interactions:

In a laboratory study, rosemary extract increased the effectiveness of doxorubicin in treating human breast cancer cells. The relevance of these findings is not known; additional clinical studies are needed to confirm these effects in people.

Topical preparations containing Rosemary oil are potentially harmful to hypersensitive people who may be allergic to camphor.

Use:

Rosemary is a well known and often used herb in medicinal and cosmetic applications since many centuries.

Due to this fact the German Commission E recommends in their monograph, dated 1985, the external use of Rosemary for stimulation of blood flow. In case of internal use of Rosemary the German Commission E recommends in their monograph the administration of Rosemary in case of dyspeptic disorders and as an adjuvant in therapy of rheumatism.

Limits of administration:

In some cases, rosemary can cause autoimmune diseases. Rosemary in culinary or therapeutic doses is generally safe, however precaution is necessary for those displaying allergic reaction, or those prone to epileptic seizure. Rosemary essential oil is a powerful convulsant; if applied to the skin, it may cause seizures in otherwise healthy adults or children (Burkhard P.R. et al. 1999). Rosemary essential oil is potentially toxic if ingested. Large quantities of rosemary leaves can cause adverse reactions, such as coma, spasm, vomiting, and pulmonary edema (fluid in the lungs) that can be fatal. Avoid consuming large quantities of rosemary if pregnant or breastfeeding (Lemonica I.P. et al. 1996).

Assessment/safety factors and toxicity:

Rosemary is generally considered safe and devoid of adverse side effects when taken in recommended doses. However, there have been occasional reports of allergic reactions. Large quantities of rosemary leaves, particularly due to the rosemary oil, can cause serious adverse side effects, including coma, spasm, and vomiting, and, in some cases, pulmonary edema (fluid in the lungs), which can result in death. Do not use rosemary in quantities larger than those used in foods if you are pregnant or breastfeeding.

Rosemary oil, taken orally, can trigger convulsions; epileptic patients should exercise caution in using rosemary and never ingest quantities larger than those used in foods. Topical preparations containing rosemary oil are potentially harmful to hypersensitive people who may be allergic to camphor.

Further remarks and characteristics:

Rosemary is a useful food preservative, according to research published in 1987 by Rutgers University, New Jersey. Researchers at Rutgers patented a chemical derived from rosemary that compares favourably with BHA and BHT in its preservative properties.

Rosemary can be added as an unusual extra flavouring in lemonade.

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