



Thyme: A Powerful Herb

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The Food and Agricultural Organization (FAO) defines wild edible plants (WEPs) as "plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and can exist independently of direct human actions" (Heywood, 1999). Furthermore, it has been shown that WEPs have a significant part in fulfilling the nutritional needs necessary for enhancing health, which helps to lessen malnutrition, conflict, and food instability and scarcity (Bhatia et al., 2018). Thyme (*Thymus vulgaris*), one of the most significant food plants with numerous advantages, is one of the most well-liked WEPs. "Thyme" is referred to as Banajwain in Hindi, Marizha, Masho, Rangsbur in Punjabi, and Hasha in Urdu. Thyme is a perennial shrub with fragrant greenish-gray leaves and a semi-evergreen ground cover. This herb has a unique scent. Each species of thyme has tiny, about 2.5 mm long leaves that differ significantly in shape and hair covering. In addition to being used medicinally, flowers, leaves, and oils are frequently used to taste cuisine. *T. vulgaris* is an evergreen, perennial subshrub with a woody stem that is typically upright. The simple, evergreen leaves are grouped in whorls around the stem (Dauqan and Abdullah, 2017). They are oval in shape, have a delicate texture, and smell good. The primary composition of thyme is made up of a wide range of chemical compounds and essential oils that vary depending on the environment and location.

Components

Thymol and carvacrol are the two primary components responsible for its characteristics. Thymol is an isomer of carvacrol and a derivative of monoterpene, a phenolic molecule and is a significant component of thyme oil. 27 chemicals, including thymol, parasmene, gammatripinien, carvacrol methyl ether, cineol, and boraneol, were found in thymine oil from Thymine. The main components are beta-caryophyllene, carvacrol, gamma-tropinone, and thymol (Dauqan and Abdullah, 2017).

Nutritional value

Thyme is rich in vitamins, minerals, and phytonutrients that are vital for good health. These minerals, which are well-known for their capacity to help fight off illness and advance health, enhance the benefits of this plant. Thyme is particularly rich in vitamins A and C. Vitamin A, an antioxidant, is thought to be necessary to maintain healthy skin, mucous membranes, and eyesight. Vitamin C is essential for combating viral infections as well as defending against harmful pro-inflammatory free radicals. Thyme also contains B-complex vitamins, including vitamin B6 (pyridoxine), which helps maintain brain levels of γ -aminobutyric acid (GABA) and reduces stress. Additionally, folic acid, vitamin K, and vitamin E are found in thyme (Reddy et al., 2014). Thyme has an oxygen radical absorbance capacity (ORAC) of 27,426 μ moles of Trolox Equivalents per 100 g (molTE/100 g). This figure demonstrates the potency and capacity of an antioxidant product to counteract free radicals. Thyme is also rich in essential minerals. Its leaves are rich in potassium, calcium, iron, manganese, magnesium,

and selenium. Potassium is an essential component of cells and body fluids and controls heart rate and blood pressure. Iron is necessary for the formation of red blood cells, while manganese is a co-factor for the antioxidant enzyme superoxide dismutase (Reddy *et al.*, 2014).

Health benefits

Thyme is packed with bioactive compounds like thymol that supports several bodily processes (Samee *et al.*, 2022):

Soothes Coughs: The symptoms of acute bronchitis can be lessened by combining ivy leaf and thyme leaf extract.

Reduces Blood Pressure: Research indicates that thyme extracts dramatically lower high blood pressure and heart rate.

Combats Foodborne Bacteria: Salmonella and E. coli bacteria are inhibited by thyme essential oil, which helps to preserve food.

Boosts Immunity: Rich in vitamins A and C, it fortifies the immune system's seasonal defence.

Disinfects Mould: Thymol is a powerful chemical that eliminates mould spores from homes. Ticks, fleas, lice, and mosquitoes are all successfully repelled by thyme oil.

Improves Mood: Thyme's carvacrol increases feel-good chemicals including serotonin and dopamine.

Promotes Oral Health: Antibacterial qualities strengthen antiseptic mouthwashes and stop tooth rot.

Reduces Inflammation: The body's inflammatory pathways are targeted and suppressed by active enzymes.

Fights Fungal Infections: Extremely efficient against strains of *Candida albicans* yeast.

Reduces Skin Acne: Compared to regular benzoyl peroxide, thyme tinctures have a greater ability to reduce acne.

Uses in Food (Silva et al., 2021)

Flavour enhancement & seasoning: The potential of thyme leaf powder to improve the flavour of a variety of items, including soups, sauces, and snacks, is well known. It can also be used as essential seasoning for savoury foods, particularly frozen and prepared foods. Products like crackers, chips, and dips are enhanced by its deep flavour, adding a gourmet touch.

Natural preservative properties: Thyme lessens the need for artificial preservatives by preventing spoiling. Thyme powder extends the shelf life of processed foods, particularly baked items, by preventing the growth of germs and fungi.

Flexibility in a Range of Food Types: Powdered thyme leaf can be added to herbal tea blends or infused into liquids to give broths and health drinks an earthy taste. Thyme powder adds a mild herbaceous aroma to baked items, especially artisanal bread, crackers, and savoury pastries.

Herbal Infused Oils and Vinegars: Gourmet culinary condiments are made by steeping thyme sprigs in either white wine vinegar or olive oil.

Encapsulated Thyme Essential Oils: To cover up strong flavours and offer antimicrobial protection, functional meals are supplemented with nano-carrier or microencapsulated oils (Hammoudi Halat *et al.*, 2022).

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