

Nutritional Value of Herbs

Source: *The Worlds Healthiest Foods* by George Mateljan, founder of Health Valley Foods. The accompanying website is www.whfoods.org

Peppermint- In the world of health research, randomized controlled trials have repeatedly shown the ability of peppermint oil to relieve symptoms of irritable bowel syndrome, indigestion, dyspepsia, and colonic muscle spasms. The menthol contained in peppermint may be a key reason for this bowel-comforting effect.

A Potential Anti-Cancer Agent- Interest in peppermint has extended well beyond the digestive tract, however. Perillyl alcohol is plentiful in peppermint oil. In animal studies, this phytonutrient has been shown to stop the growth of pancreatic, mammary, and liver tumors. It has also been shown to protect against cancer formation in the colon, skin, and lungs. ***These animal-based studies have yet to be matched by equally sound human studies, however.***

Essential oil of peppermint also stops the growth of many different bacteria. These bacteria include *Helicobacter pylori*, *Salmonella enteritidis*, *Escherichia coli* O157:H7, and methicillin-resistant *Staphylococcus aureus* (MRSA). It has also been found to inhibit the growth of certain types of fungus as well.

Peppermint contains the substance rosmarinic acid, which has several actions that are beneficial in asthma. In addition to its antioxidant abilities to neutralize free radicals, rosmarinic acid has been shown to block the production of pro-inflammatory chemicals, such as leukotrienes. It also encourages cells to make substances called prostacyclins that keep the airways open for easy breathing. Extracts of peppermint have also been shown to help relieve the nasal symptoms of allergic rhinitis (colds related to allergy). Peppermint is a good source of manganese, copper, and vitamin C.

Basil- Basil contains flavonoids such as orientin and vicenin, which have been found to protect cell structure and chromosomes from radiation and oxygen based damage. Lab studies have shown the effectiveness of Basil in restricting growth of numerous bacteria including *Staphylococcus aureus* and *Escherichia coli* as well as some bacterial strains found to be resistant to commonly used antibiotic drugs. This antimicrobial activity is thought to be due to its volatile oils such as eugenol, myrcene and limonene. Because of those volatile oils, Basil has been found to be an anti-inflammatory food. Eugenol is able to block the activity of the COX enzyme, which is how many over the counter NSAIDs work.

Thyme- has a long history of use in natural medicine in connection with chest and respiratory problems including coughs, bronchitis, and chest congestion. Only recently, however, have researchers pinpointed some of the components in thyme that bring about its healing effects. The volatile oil components of thyme are now known to include carvacol, borneol, geraniol, but most importantly, thymol.

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Thymol—named after the herb itself—is the primary volatile oil constituent of thyme, and its health-supporting effects are well documented. In studies on aging in rats, thymol has been found to protect and significantly increase the percentage of healthy fats found in cell membranes and other cell structures. In particular, the amount of DHA (docosahexaenoic acid, an omega-3 fatty acid) in brain, kidney, and heart cell membranes was increased after dietary supplementation with thyme. In other studies looking more closely at changes in the brains cells themselves, researchers found that the maximum benefits of thyme occurred when the food was introduced very early in the lifecycle of the rats, but was less effective in offsetting the problems in brain cell aging when introduced late in the aging process.

Thyme also contains a variety of flavonoids, including apigenin, naringenin, luteolin, and thymonin. These flavonoids increase thyme's antioxidant capacity, and combined with its status as a good source of manganese, give thyme a high standing on the list of antioxidant foods.

The volatile oil components of thyme have also been shown to have antimicrobial activity against a host of different bacteria and fungi. *Staphalococcus aureus*, *Bacillus subtilis*, *Escherichia coli* and *Shigella sonnei* are a few of the species against which thyme has been shown to have antibacterial activity.

Research shows that both thyme and basil contain constituents that can both prevent contamination and decontaminate previously contaminated foods. In these studies, published in the February 2004 issue of *Food Microbiology*, researchers found that thyme essential oil was able to decontaminate lettuce inoculated with *Shigella*, an infectious organism that triggers diarrhea and may cause significant intestinal damage. In addition, washing produce in solution containing either basil or thyme essential oil at the very low concentration of just 1% resulted in dropping the number of *Shigella* bacteria below the point at which they could be detected.

Thyme is an excellent source of vitamin C, a very good source of vitamin A, and a good source of iron, manganese, copper, and dietary fiber.

Rosemary- contains a wealth of antioxidant phytonutrients, including flavonoids and phenolic compounds carnosol, rosmanol and rosmarinic acid. Rosemary extract has shown the capacity to scavenge the peroxynitrite radical, one of the molecules responsible for causing lipid per oxidation, cell death and aging. Rosmarinic acid has been found to modulate the production of inflammatory molecules, promoting a reduced inflammatory state. Studies have found that inhalation of it's volatile oils help to enhance recall and increase alertness. Rosemary and it's phytonutrients have been found to enhance the action of liver enzymes responsible for metabolizing and detoxifying chemicals. It is also a concentrated source of traditional nutrients such as bone building calcium, heart healthy dietary fiber and energy producing iron.

Parsley- known for refreshing breath, relieving digestive upset and it's diuretic properties, it is also a concentrated source of traditional vitamins and minerals. Parsley

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contains volatile oils such as myristicin, limonene, eugenol and alpha-thujene that have been shown to inhibit tumor formation in animal studies. Parsley thus qualifies as a chemoprotective food. It can help neutralize carcinogens such as benzopyrenes that are found in cigarette smoke and charcoal grill smoke. Parsley also contains flavonoids like apiin, apigenin, crisoeriol and luteolin. These flavonoids function as antioxidants that prevent oxygen based damage to cells. Animal studies have shown that extracts from parsley help increase the antioxidant capacity of the blood. Parsley is a concentrated source of energy producing iron, bone building calcium and magnesium, as well as heart healthy potassium and dietary fiber.

Oregano- You may have seen a bottle marked "oil of oregano" in a health food store. There are good reasons why! It is an Effective Anti-Bacterial. The volatile oils in this spice include thymol and carvacrol, both of which have been shown to inhibit the growth of bacteria, including *Pseudomonas aeruginosa* and *Staphylococcus aureus*. In Mexico, researchers have compared oregano to tinidazol, a commonly used prescription drug to treat infection from the amoeba *Giardia lamblia*. These researchers found oregano to be more effective against *Giardia* than the commonly used prescription drug.

Oregano has potent Antioxidant Activity with phytonutrients like thymol and rosmarinic acid—that have also been shown to function as potent antioxidants that can prevent oxygen-based damage to cell structures throughout the body. Additionally, on a per gram fresh weight basis, oregano has demonstrated 42 times more antioxidant activity than apples, 30 times more than potatoes, 12 times more than oranges and 4 times more than blueberries.

Oregano qualifies as a good source of fiber, an excellent source of vitamin K, a very good source of manganese, and a good source of iron and calcium.

Sage- Sister herb of Rosemary. It contains a variety of volatile oils, flavonoids (including apigenin, diosmetin, and luteolin), and phenolic acids, including the phenolic acid named after rosemary—rosmarinic acid.

Rosmarinic acid can be readily absorbed from the GI tract, and once inside the body, acts to reduce inflammatory responses by altering the concentrations of inflammatory messaging molecules. The rosmarinic acid in sage and rosemary also functions as an antioxidant. The leaves and stems of the sage plant also contain antioxidant enzymes, including SOD (superoxide dismutase) and peroxidase. When combined, these three components of sage—flavonoids, phenolic acids, and oxygen-handling enzymes—give it a unique capacity for stabilizing oxygen-related metabolism and preventing oxygen-based damage to the cells. Increased intake of sage as a seasoning in food is recommended for persons with inflammatory conditions (like rheumatoid arthritis), as well as bronchial asthma, and atherosclerosis. Sage is an outstanding memory enhancer.