

# GREENSPACE

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The environment in which we live and work and specifically the air we breathe and smell can have a profound beneficial effect on health, happiness, and work productivity. This can be termed a well-being environment. An environment that directly benefits the physical aspects of health through improving the quality of the air we breathe but also a deeply positive effect on mental wellbeing through the olfactory system. This is possible through the Green Space system and the use of high quality organic essential oils.

They have a vast spectrum of beneficial effects depending on their chemical structure, on correct dosing and correct blending. The science behind this is well proven and as experienced aromatherapists, we have made the correct choice of essential oils for our blends providing the desired effects on a number of levels.

The immediate effect of diffusing essential oils and the wonderful aromas produced is to create an incredibly pleasant environment. This underpins the GreenSpace concept. The fragrances of pine, orange, mint, and Eucalyptus staigeriana can instantly lift you through the effect on your limbic system, reduce stress and anxiety, and put you in a better, more positive place (1-3).

The beneficial effects of essential oils on promoting health, both directly and indirectly, have been extensively researched.

The direct effect of the BioPure oil on air quality, helping create a pure environment, is through the careful selection and blend of specific oils. These oils have a spectrum of antimicrobial effects, their ability to attack pathogenic (viral, bacterial and fungal) microorganisms, and this is dependent on the active chemical compounds within the oil. The major constituents between oils vary and this determines their effectiveness against different pathogens. The mode of action seems to be through disruption of the cell membrane of the pathogen, an increase in cell permeability causing leaking of vital cell constituents (4). Looking at these oils individually their combined benefit can be demonstrated. Eucalyptus globulus has been shown to possess antimicrobial effects, particularly against H. influenza and streptococcus, as well as anti-inflammatory effects (reduction of interleukins and neutrophil infiltrate) and immune-stimulating activity (increased phagocyte activity of monocytes and macrophages). In combination with tea tree oil (and its major constituent terpinen-4-ol), bergamot, thyme (thymol) and cinnamon, air quality can be further improved as all have been shown to be active against airborne influenza virus. Thyme, eucalyptus globulus, and tea tree oil provide an additional benefit to the airways with their positive effect on nasal ciliary action, an important part of the protective mechanism in the respiratory tract (5-8, 26, 28, 31). Cinnamon and thyme are particularly potent against bacterial respiratory tract pathogens in vapor form (9,10) and thyme also has an ability to inhibit biofilm formation, an important part of bacteria resistance (11). Eucalyptus staigeriana (cital) has recently shown inhibitory activity against novel COVID-19 protease, which may prove effective in helping against viral infection (12). The optimization of air quality through their spectrum of antimicrobial properties with a possible reduction in viral and bacterial load can be hugely beneficial in illness prevention. In addition, this is

supplemented by the direct effect these essential oils have on the respiratory system itself. The oils in the BioPure and particularly the 1,8-cineole, support the airways through anti-inflammatory, bronchodilatory, and mucolytic properties, which can be extremely beneficial in sinus conditions, hay fever, bronchial conditions and asthma (5, 26, 27,28).

Creating a pure environment of improved air quality and airway support has the advantages outlined above but an additional benefit of the BioPure blend is it also helps create a healthy environment.

Health is a barometer of how we live with physical fitness, mental well-being, good nutrition, and sleep being the key factors. Good quality sleep of 7-9 hours (13) is so important as it helps maintain a robust immune system and allows us to deal more effectively with life's stresses. This is critical as chronic stress can lead to disease and reduced efficiency at work. If we can reduce chronic stress levels and boost good quality sleep then there would be tangible benefits to people's health, illness reduction, workplace productivity, and general mood (14).

An environment diffused with a carefully selected fragrance can have a significant benefit on the wellbeing of individuals. The olfactory system is a powerful sensory organ and there are strong neural connections with the brain, particularly the limbic system. Certain fragrances can significantly influence affective and cognitive states in humans, improving calmness, alertness, and positive mood (1). Eucalyptus (1,8-cineole) has been shown to be very effective in reducing anxiety (15) and bergamot essential oil has been shown to be particularly effective in the management of chronic stress and anxiety (16, 33). Lemon reliably enhances positive mood (17,23) while the research on lavender has established its influence on mood and the autonomic system with a reduction in stress and anxiety and significantly improved sleep patterns (18,21,25, 30,32).

As the seasons change our environment changes. Immunity levels and mood can fluctuate with the differences in climate so our bodies need additional support to maintain a happy homeostasis. The GreenSpace system supplements the BioPure blend with 2 essential oils selected according to the season's demands. Autumn usually sees an increase in the frequency of respiratory illness so cedar and spruce essential oils help with optimization of the air quality through their antimicrobial properties and further support the airways with decongestant and mucolytic actions (19). As winter sets in additional cinnamon and its wide spectrum of antimicrobial effect on respiratory tract pathogens (9) helps protect and boost the immune system, which is usually weakened due to inactivity, diet, and lack of vitamin D. Essential oil of orange complements the warming effect of cinnamon and helps raise mood, which can be a particularly low in winter with seasonally adjusted disorder being prevalent (20,23).

The onset of spring is a time of awakening and the uplifting and mood-enhancing essential oil of lemon reflects the blossoming environment. This is accompanied by pine, which aside from its amazing fragrance ensures air quality is maintained (23,29). The summer blend utilizes the classic oils lavender and peppermint. Lavender has a whole spectrum of benefits including antimicrobial activity to help purify the air (21) and its well recognized relaxing effect, important in times of sympathetic arousal from ambient heat and humidity (18,21,25,30,32). The accompanying peppermint oil fragrance adds a welcome refreshing feel to the environment.

At certain times the environment requires a specific mood, independent of season. Work productivity and efficiency always benefit from enhanced concentration and alertness and the essential oil of rosemary facilitates this (22, 24), supported by the

invigorating fragrance of peppermint. This is BioPure Focus. Conversely, to provide a wholly relaxing environment BioPure Relax uses the well-proven calming and soothing effects of additional lavender oil (18,21,25,30,32) and supplemented by orange (20,23).

By carefully blending specific essential oils and enhancing them with additional oils, depending on the season and required mood, a true wellbeing environment can be created. One that improves the quality of the air we breathe positively affects mental well-being and physical health and creates a wonderful fragrant environment.

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