

Essential oils to fight superbugs

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Essential oils could be a cheap and effective alternative to antibiotics and potentially used to combat drug-resistant hospital superbugs, according to research presented at the Society for General Microbiology's spring meeting in Edinburgh this week.

Professor Yiannis Samaras and Dr Effimia Eriotou, from the Technological Educational Institute of Ionian Islands, in Greece, who led the research, tested the antimicrobial activity of eight plant essential oils. They found that thyme essential oil was the most effective and was able to almost completely eliminate bacteria within 60 minutes.

The essential oils of thyme and cinnamon were found to be particularly efficient antibacterial agents against a range of *Staphylococcus* species. Strains of these bacteria are common inhabitants of the skin and some may cause infection in immunocompromised individuals. Drug-resistant strains, such as meticillin-resistant [Staphylococcus aureus](#) (MRSA) are extremely difficult to treat. "Not only are essential oils a cheap and effective treatment option for antibiotic-resistant strains, but decreased use of antibiotics will help minimise the risk of new strains of antibiotic resistant micro-organisms emerging," said Professor Samaras.

Essential oils have been recognised for hundreds of years for their therapeutic properties, although very little is still known about how they exert their antimicrobial effects in humans. Australian aborigines used Tea tree oil to treat colds, sore throats, skin infections and insect bites and the remedy was sold commercially as a medicinal antiseptic from the early 20th century. Various scientific studies have demonstrated that

essential oils are not only well tolerated, but are effective against a range of bacterial and [fungal species](#). Their therapeutic value has been shown for the treatment of a variety of conditions, including acne, dandruff, [head lice](#) and oral infections.

The Greek team believes essential oils could have diverse medical and industrial applications. "The oils - or their active ingredients - could be easily incorporated into antimicrobial creams or gels for external application. In the food industry the impregnation of food packaging with essential oils has already been successfully trialled. They could also be included in food stuffs to replace synthetic chemicals that act as preservatives," they said.

Provided by Society for General Microbiology

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