

Case Study - Monash University School of Applied Sciences Report

Lab Studies Biocidal Activity of Airborne Tea Tree Oil in a Model HVAC System

Abstract - The purpose of the test was to determine the effect of vaporized tea tree oil on organisms commonly found in HVAC systems. It has been commonly assumed that heating ventilation and air conditioning systems are a source of indoor bioaerosol contaminants. Monash University scientists were asked to study the efficacy of tea tree oil vapor - airborne tea tree oil - in a model AC duct system. Numerous studies^[1] had previously shown the effectiveness of tea tree oil in controlling various molds and biocontaminants when applied directly but this study proved that tea tree oil is highly effective when dispersed in the air as well.



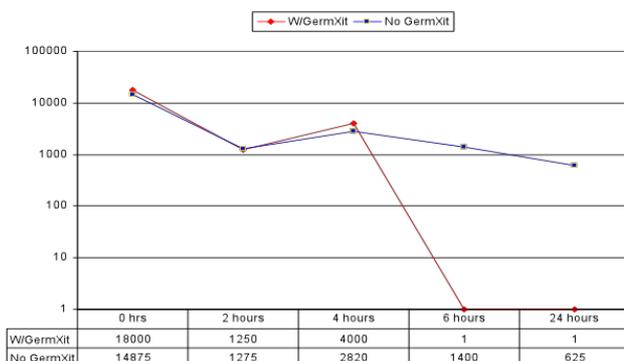
Test procedure - A model air duct was set up to allow for repeatable experiments. Test "filters" were contaminated with E.coli bacteria and a common yeast fungi called C.albicans. Various tests were conducted exposing the contaminated filters to airborne tea tree oil generated by airflow over the GermXit™ gel and also control tests without tea tree oil in the system.

Conclusion - Results clearly showed that tea tree oil is evaporated into the system by airflow and that airborne tea tree oil is effective in controlling microorganisms by being dispersed in the air.

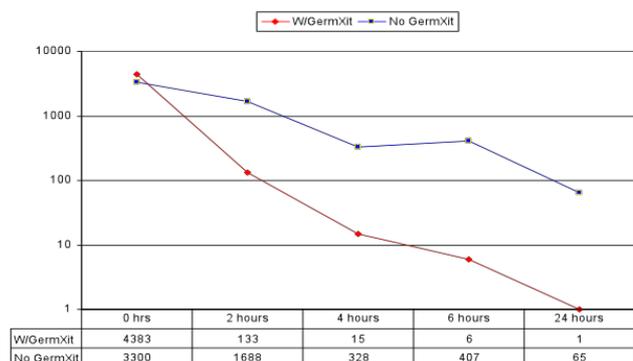
"Under the conditions of the experiment, [GermXit™]* gel had a measurable biocidal effect on E.coli [and C.albicans]" - Monash University Report^[2]

Previous to this scientific study the effectiveness of tea tree oil had only been laboratory tested using a direct contact method with the organism^[1].

"Furthermore the present study has demonstrated that [GermXit™]* gel has the potential to be a useful decontamination agent in HVAC duct systems" - Monash University Report



Air Susceptibility test E.Coli^[2]



Air Susceptibility test C. Albicans^[2]

To learn more about GermXit™ tea tree oil gel and how it will completely change the way you think about indoor air quality in your building or your home - please call us at numbers below or email to contact.us@germxit.com

Global use-

GermXit™ is now in use onboard a number of FSO ships and almost 100 oil and gas rigs and platforms around the globe. Additionally GermXit™ is used in hundreds of homes, factories, hospitals, hotels, shopping centers and schools throughout Asia, Africa and the Middle East.

About GermXit™ and Tea Tree Oil-

IAQ Technologies is a commercial ventilation cleaning service with offices in Melbourne, Australia and Bangkok Thailand. Regular cleaning of ducts and air handling systems is an essential maintenance item in any commercial building but IAQ wanted to go one step further. An effective air treatment system was needed to finish the job and keep working between cleanings so, GermXit™ was developed. Tea tree oil was chosen because of its proven effectiveness, it is all natural and it is renewable.

IAQ chemists infused tea tree oil in a water based gel designed to evaporate. As water in the gel evaporates; the tea tree oil itself is carried in an airborne vapor that permeates the entire area where it is deployed. Either forced air (fans, HVAC) or simple air movement circulates it. Within hours the tea tree oil is doing its job controlling germs, yeasts, molds, fungi and bacteria - which in turn controls odors, insects and other pests. There is even strong evidence showing tea tree oil controls a number of viruses. As long as GermXit™ is maintained in an area, undesirable organisms are controlled. The tea tree oil is always in the environment.

What is Tea Tree Oil?

By definition it is a broad spectrum antimicrobial, natural antiseptic, bactericidal anti viral, essential oil. Tea Tree Oil is effective against mold/mildew/bacteria/pollen/fungus/yeast.

What is Melaleuca Alternifolia?

It is the Latin name for the tree that produces the essential tea tree oil from its leaves.

How does Tea Tree Oil work?

It destroys the spores membrane - the spore (mold/mildew/bacteria/pollen/ fungus/yeast, becomes inert.

United States National Institute of Health - nih.gov

- www.ncbi.nlm.nih.gov/pubmed/10735256 (What it does)
- www.ncbi.nlm.nih.gov/pubmed/16854063 (How it does it)
- www.ncbi.nlm.nih.gov/pubmed/10399193 (What it is effective against)
- www.ncbi.nlm.nih.gov/pubmed/9791953 (What it is effective against-expanded)

More information -

<http://www.teatree.org.au> (educational)

<http://www.ncbi.nlm.nih.gov/pubmed?term=tea%20tree%20oil> (for 446 labs/white papers)

[Full text of the report from Monash University](#)

*NOTE: For marketing reasons the product brand name was changed to GermXit™ after these tests were conducted.

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