

Case Study - Mahidol University Microbiology Department Laboratory Test Results

Laboratory study of the effectiveness of tea tree oil gel against bacteria and fungi both in the air and on hard surfaces - July 2015

Purpose - GermXit Co., Ltd. is seeking to have its main product, GermXit Gel approved for use as a medical device. The road to this approval is demanding and thorough. A key requirement to approval is the product must be tested in a manner similar to how it would actually be used.



Description - The tests in this study were conducted under near real world conditions. Tests were done in a normally open room with a common split system air conditioning unit as the main air circulation source. Standard GermXit

brand gel containing tea tree oil was placed near the air conditioning unit and allowed to evaporate as it would in normal use.

Test procedure - Bio cultures were taken at various locations around the room - on a table, on the floor, high and low. Samples of air in the room were also taken at the same times and cultures done of the sample air. Time intervals between sampling were at time 0h, 6h, 24h, 48h and again at 15 days.

Final results - The results are most impressive - **between 89% and 95% reduction in bacteria** on surfaces and **between 81% and 90% reduction in the air** only 24 hours after GermXit Gel was introduced into the system. Effectiveness improved over time.

“The test demonstrates killing efficacy in the air and on surface[s]. The efficacy shows no significant difference in the - sampling location/culture plate placement location [within the room].” - Mahidol University Final Report

Cultures of various fungi were also sampled at the same time intervals and results were equally impressive. Reductions in fungi were seen of more than 46% at 24 hours and increased to over 74% reductions at 15 days.

“Overall, using volatile gel does add value to maintain cleanliness and healthiness of the environment as proposed by the company.” - Mahidol University Final Report

The report concluded that used as a passive indoor air quality treatment treatment, tea tree oil dispersed via evaporation of a volatile gel such as GermXit can be effective to significantly reduce bacteria and fungi both on surfaces and in the air of the treated areas. Further this effect and it penetration into the area increases over time.

NOTE: This paper is based on final results and official report and is the basis of GermXit Co., Ltd.'s application for governmental approvals of GermXit Gel as a medical device. If you would like more information, please email contact.us@germxit.com

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 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)

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