

Siriporn Suntiworapong 2014: Effects of Solar Radiation on Vertical Bioaerosol.
Master of Science (Environmental Science), Major Field: Environmental Science,
Department of Environmental Science. Thesis Advisor: Assistant Professor
Thitima Rungratanaubon, Ph.D. 95 pages.

This research study on the effect of natural solar radiation to reduce amount of concentration of microorganisms in air in natural area sample The Royal Initiated Laem Phak Bia Environmental Research and Development Project (LERD Project) Ban Laem District, Phetchaburi Province and in urban area at Chulalongkorn University. The results showed that study of natural phenomena including the height of the sample wind speed and solar radiation intensity is correlated with the concentration of microorganisms in the air statistically significant. Specifically, the intensity of solar radiation that has been shown to decrease the concentration of microorganisms in the air. The three different time periods is 8.00 a.m., 13.00 p.m. and 17.00 p.m. In 13.00 p.m. concentration of microorganisms is minimal because the concentration of solar radiation measurements has the greatest value 671.34 watts per square meter has concentration of microorganisms 317.24 ± 17.28 Colony forming units per cubic. Due to solar ultraviolet B (UV-B) and ultraviolet type A (UV-A) down to the surface. By ultraviolet B (UV-B) radiation with shorter wavelengths have more energy than ultraviolet A (UV-A) with energy greater than the impact biomolecules of the world, such as can be induced. lead to abnormalities in DNA to destroy organic channels within cells, including damage the genetic material (DNA) directly caused thymine dimer and cause mutations. In addition the nature of the weather that affects a variety of microorganisms and environmental conditions of the area, it affects a variety of microorganisms as well.

Student's signature

Thesis Advisor's signature