Winai Meesang 2014: Effect of Sea Salt Concentration to Decrease of Solar Radiation to Productivity of Plants at Phetchaburi Province. Doctor of Philosophy (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Assistant Professor Surat Bualert, Ph.D. 125 pages.

The aims of in this research were (1) to study various dried sea salt aerosols concentrations effects on solar radiation (2) distribution of sea salt component by wind direction and height (3) effects of sea salt aerosol concentration on solar radiation intensity and plants in Phetchaburi province, Thailand.

The results showed that (1) sea salt aerosol affected on amount of solar radiation by decreasing short-wave solar radiation and increasing long-wave solar radiation. (2) Horizontal distribution of chemical compositions by wind direction from the sea showed large quantity of sea salt composition nearby sea and it was decreased by increasing distance away from the sea. Considering vertical distribution of chemical compositions by height 4 meters and 7 meters and 10 meters, was found that at 10 meters showed the highest of sea salt compositions (Sulfate and Chloride) and they were decreased by height. Furthermore, Sweetness of rose apple (*Apple Phetchsairung*) was measured. It was found at Nong Sanoe, Phetchaburi rose apple is the most sweetest place. Therefore, the location was selected as the study area in the third phase. (3) Net radiation was reduced after vertically passed through rose apple tree (8 meters height). The net radiations were remained 6% and 3% at 4 and 1 meters height from ground respectively because leafs (with water contain as component) can absorb visible light for photosynthesis process. Meanwhile there is significantly increasing (compared to visible light radiation decreasing) of near infra-red radiation under the leaf shadow which can stimulate and effect on the flowering of rose apple.

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