

Thesis Title	A Relationship of Species and Concentrations of Atmospheric Organic Acids on Acid Deposition
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Abstract

The organic acids have been investigated substantially in this cause of acid deposition study. The acid deposition includes both wet and dry. For the wet deposition, a total of 42 rainwater samples were collected over a period of 182 days at Chainat Meteorological Station. For the dry deposition, the air samples were collected using a 4-stage filter pack. Both, the rain and the air samples were analyzed to determine the types and concentrations of the organic acids. The study found that formic and acetic acids were predominant compounds among the carboxylic acid groups. They were accounted for 26% and 32% respectively. The study also showed a clear seasonal pattern at which the organic acid concentrations reached higher levels during the dry season than those in the wet season. This was attributed to a dilution effect of the heavy rainfall during the wet season and the accumulation of gaseous acid compounds in the atmosphere during the dry season that prolong their residence times and subsequently, in favor of the photochemical oxidation to carboxylic acids. Furthermore, the ratio of formic acids to acetic acids (F/A) is used as an indicator of the formation pathway of these organic acids. The ratio of formate/acetate in the gas phase larger than 1 indicated that the secondary formation of carboxylic acids was vital to the atmosphere in Chainat. An ion balance based on the ionic species that included the organic acids does reflect the ionic equilibrium of the wet deposition and demonstrated the validity of the results obtained.

Keywords: Acid deposition/Organic acid