

Seasonal And Interannual Evolution Of The Monoacids Organics In The Atmosphere Of The Humid Savanna Of Lamto (Côte d'Ivoire)

R. PÊLÈMAYO TOURÉ¹, G. KOUADIO¹, V. YOBOUÉ¹
AND C. ROMARIC BEUGRÉ²

¹Laboratoire de physique de l'atmosphère et de mécanique des fluides (LAPA-MF)
Université d'Abidjan- Cocody 22BP 231Abidjan22 Côte d'Ivoire

²Laboratoire de chimie-physique Université d'Abidjan-Cocody
22BP 582Abidjan22 Côte d'Ivoire
pelemayo@yahoo.fr

This work was made within the framework of the network IDAF (IGAC/DEBITS/Africa). It concerns the follow-up of the acidity of the atmosphere of an ecosystem of wet savanna from the organic fraction of the free acidity. It is a question of understanding the major factors which cause the variability of this organic acidity in the interannual and seasonal scales. During ten-year period (1995- 2004) 860 rainy samples were collected in the wet savanna of Lamto. By using Henry's law, we determined the contents in the air of major organic monoacids (HCOOH and CH₃COOH) from the concentrations of these acids measured in rains. The annual partial pressure of organic monoacids on the decade is extremely variable. It is $0,675 \pm 0,56$ ppb and of $0,413 \pm 0,14$ ppb respectively for the formic acid and for the acetic acid. This strong variability is bound to their various sources which are also very variable from one year to the next. The organic acidity varies from 40 % to 60 % on average and almost stable rest from a season to the other one. The seasonal analysis shows that generally the partial pressures of organic acids are of a factor twice as raised in dry season that in wet season. This difference is not inevitably connected to the quantity of haste registered from a season to the other one. But would more be connected to the biomass burning which contribute from 21 % to 51 % to the formation of organic acids in the wet savanna of Lamto.

[1] Yoboué V, C. Galy – Lacaux; Lacaux J.P, and S. Silué; 2005: Rainwater Chemistry and Wet Deposition over the Wet Savanna Ecosystem of Lamto (Côte d'Ivoire), *Atm Envi.* **52**, 117 – 141. [2] Kouadio, G., Jean Servant, Bernard Cros and Robert Delmas, 1991: Carboxylic monoacids in the air of Mayombe Forest (Congo): Role of the forest as source or sink, *J. Atmos. Chem.* **12**, 367-380