

Occurrence of Acid Rains in the Northern Region of Sri Lanka

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In Sri Lanka, the only study that is available regarding occurrence of acid rains has been carried out during 1996-2003, covering all but the northern and the eastern provinces due to the ethnic-conflict during that period. It was reported that acid rains occur at several locations in the island. Hence, this attempt was made to record the occurrence of acidity of rains in the northern region of Sri Lanka. The trans-boundary air pollutants from neighbouring industrialized countries such as China and India could be possible. A study was conducted from 2013 to 2014 to determine the pH, sulphate, nitrate, calcium and magnesium ion concentrations in the rain water in five districts, namely Jaffna, Kilinochchi, Vavuniya, Mannar and Mullaitivu in the Northern Province. The rain samples were collected from 30/11/2013 to 01/02/2014 by North east monsoonal rain. The percentages of acid rains (pH < 5.6) was 8.3% and the average pH in rain water ranged from 6.2 to 8.5. The rain water with lowest pH of 5.17 was recorded at Vavuniya. The average electric conductivity ranged from 9.5 to 117.9 $\mu\text{S}/\text{cm}$ with minimum and maximum values of 1.08 and 492 $\mu\text{S}/\text{cm}$ in Mannar and Mullaitivu, respectively. The average concentration of sulphate ranged from 2.4 to 6.3 ppm. The average concentration of nitrate ranged from 2.1 to 10.6 ppm. It was found that acid rain occurs in the Northern region of Sri Lanka, especially in Vavuniya and Mannar possibly due to trans-boundary pollution during the north east monsoon period from November to February.

Keywords: Acid-rain, Air-pollutants, Northern Province, Trans-boundary