

ACID RAIN

Geographical Scenario - India

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Acid Rain - India

It has been found that potential neutralizer of the acidic components of rain water in Indian region is Calcium which is mainly naturally derived from the soil. As the soil of the most part of Indian land is Calcareous, it contains abundance of calcium. So, the Indian soil has as yet put a check on the acidification of rain water, but how long?

Acid Rain Studies in India

There have been many reports of acid rain in India in the past and that too have been only the episodic. Reported acid precipitations in India includes the acid rain in Chembur and Colaba industrial areas of Mumbai, in the vicinity of Singrauli Super thermal Power Plant (average pH value 5.3), at a rural site of Bhubaneswar (median pH value 5.0) and the Silent Valley (pH=5.3). Latest reports on acid rain are at Kalyan (pH=5.28), Chembur (pH=4.8), Sinhagad (pH=5.2), Delhi (pH<5.6) and very recently at Panipat (pH<5.6) of National Capital Region of Delhi. Although the pH value of rainwater at Pune has been reported to lie in the alkaline range, its value has shown decreasing trend from value of 7.5 in 1986 to 6.2 in 1998. The main reason is attributed to the decrease in the level of calcium ion and increase in sulphate and nitrate ions. Rain fall in Agra and Delhi regions have also shown decrease in pH value with the passage of time. Acid Rain studies are being carried out by IITM since last three decades. The pH values are higher (pH>7.0) in north & north-west parts of India. They are slightly lower ($6.0 \leq \text{pH} \leq 7.0$) in northeastern & southern parts of India. The higher pH is due to neutralization of acidic ions (SO_4 & NO_3) by soil originated cations (Ca, K & Mg) as well as by NH_4 . However, the pH values are acidic (pH ≤ 5.56) at some industrial, rural & remote locations which could be either due to anthropogenic emissions (Kalyan & Singrauli), acidic soil (Goraur & Mohanbari) or due to thick cover of vegetation that prevents soil erosion (Trivandrum, Silent Valley & Tungnath). This work is being carried out at IITM, Pune by a team of scientist led by Dr. P.S.P. Rao.

Spread of acid rain over India

