

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION No. 749  
TO BE ANSWERED ON WEDNESDAY, DECEMBER 20, 2017**

**ACID RAIN**

**749. SHRI G. HARI:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether it is true that according to a research by the India Meteorological Department and Indian Institute of Tropical Meteorology, pollution is causing life giving rain to turn increasingly acidic in many parts of the country particularly in the last decade;**
- (b) if so, the details thereof;**
- (c) whether it is also true that the acid rain is a result of rain water in the atmosphere mixing with polluting gases such as oxides of sulphur and nitrogen emitted from power plants, automobiles and some industrial units; and**
- (d) if so, the details thereof?**

**ANSWER**

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND  
MINISTRY OF EARTH SCIENCES  
(SHRI Y. S. CHOWDARY)**

- (a) Yes Madam.**
- (b) Potential of hydrogen (pH) is a scale of acidity from 0 to 14. It tells how acidic or alkaline a substance is. More acidic solutions have lower pH. More alkaline solutions have higher pH.**

**Study during 1981-2012 has shown the decreasing trend in pH at all the ten global atmosphere watch (GAW) stations in India. This trend is more significant in the last decade. Decadal mean pH among ten stations for 1981-1990, 1991-2000 and 2001-2012 ranged between 7.31 to 5.76, 7.45 to 4.92 and 6.16 to 4.77, respectively.**

- (c) Yes Madam.**
- (d) Emissions from industries, automobiles, power plants and domestic burning activities are the important sources for these acidifying gases/aerosols in the atmosphere and showed more strong correlation with Nitrate (NO<sub>3</sub>) than with Sulphate (SO<sub>4</sub>).**

**Temporal variation at all the GAW stations showed an increasing trend for sulphate and nitrate which are major acidifying components oxidized from their precursor gases sulfur dioxide and nitrogen dioxide, respectively; and decreasing trend of calcium which is major alkaline component.**

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