Hydrol Current Res 2014, 5:4
http://dx.doi.org/10.4172/2157-7587.S1.015

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Hydrology & Meteorology
September 15-16, 2014 Hyderabad International Convention Centre, India

Bioremediation- A biotechnological tool for environmental sustainability

Garima Kaushik
Central University of Rajasthan, India

The environment is the most important constituent necessary for the coexistence of man and other biotic units. The degree of environmental sustainability reflects the basic status of its biotic and abiotic components. The best method of sustaining the environment is to return back all the components (wastes and by products) in a recyclable way so that the waste becomes useful and helps the biotic and abiotic relationship to maintain an aesthetic and healthy equilibrium that characterizes an ideal environment. One such tool is Biotechnological tool, that use the chemistry of living organisms through cell manipulation to develop new and alternative methods aimed at cleaner and more effective ways of producing traditional products and at the same time maintain the natural and aesthetic beauty of the environment. Today, biotechnology is being considered as an emerging science for environmental protection. The physico-chemical methods of pollutant treatment include high costs and the need to re-treat the products, which further increases the cost of treatment as these processes only change the state of pollutants rather than completely eradicating them. On the other hand biological methods involve degradation of pollutants, solving the problem permanently. In the biological treatment method, pollutants in wastewater can be resolved, detoxified, and separated by using mainly microorganisms. Due to the relatively low cost and the variations of work progress, bioremediation process has been most widely used all over the world. Bioremediation technology uses micro-organisms to reduce, eliminate or transform contaminants present in soils, sediments or water. In many cases these microorganisms or their products are integrated into the substrates which are used in many processes like, bioleaching (biomining), biodetergent, biofiltrations, biocatalysts, biomass fuel production, biomonitoring, and so forth. These are biotools (biotechnological tools), which could solve the problem of pollution and help sustain the environment.

garima4rinku@rediffmail.com

Role of meteorological parameters on thermal comfort in building

B M Suman
CSIR-Central Building Research Institute, India

The paper presents the role of internal and external meteorological parameters on indoor environment. Amongst internal parameters, indoor air temperature, wind motion and humidity are important and outdoor air temperature, solar radiation; wind speed and humidity are the key external factors. Humidity can be derived from dry bulb and wet bulb temperatures. A parameter known as sol air temperature depending upon short wave and long wave solar radiation, outdoor air temperature, surface heat transfer coefficients, emissivity and surface absorption coefficient; is proportional to the amount of heat flow from outside to inside through building components. Heat flow also depends upon thermo physical properties of building components. The external factors and thermo physical properties of building components are required to determine indoor air temperature. A comfort index developed at Central Building Research Institute Roorkee is the temperature of still air with 50% relative humidity which produces the same thermal sensation as the given environment. The paper describes the impact of humidity and air motion on thermal comfort condition of an enclosure. By considering 40% humidity with dry bulb and wet bulb temperature 40oC and 24oC respectively and wind motion 9 m/sec of an enclosure produces comfort thermal sensation and by increasing humidity up to 90% when dry bulb and wet bulb temperatures are 40oC and 38.5oC respectively with 9 m/sec wind motion produces discomfort thermal sensation. Result of this study shows that keeping dry bulb temperature constant, comfort condition can be achieved by increasing wind motion for a certain limit of humidity.

Biography

B M Suman has completed his PhD in 1999 at the age of 41 years from Meerut University and Postdoctoral research was focused on building heat transfer to achieve energy efficient and thermally comfort building at CSIR-Central Building Research Institute, Roorkee. He is the Principal Technical Officer and in charge of Heat Transfer Laboratory at the institute. He has published 65 papers in reputed journals and national and international conferences.

bs_ashishh@rediffmail.com