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Short Communication

Environmental Bio-remediation: A Noble Foundation in the Discipline of Natural Sciences

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Abstract

Microbes are nature's fundamental garbage disposal, devouring the dead, decomposing and inert material that litters Earth's surface. They are so good at doing, in fact, that people have taken a growing interest in forcing our environmental mess to clean. Environmental Bio-remediation is an imperative sector of the green economy. Polluted by a millions of industrial activity or unintentional releases of contaminants, land areas and water bodies should be cleaned up to restore them to their natural state or to make them suitable for redevelopment. Bioremediation is completely safe and natural process of organic contaminants cleaning through the use of microbes. The bacteria involved in bioremediation processes are simply gluttons microbes. Germs of natural origin are placed in the contaminated site at which they will immediately begin to begin to decompose the organic pollutant. This "break "method consists of these microbes break the carbon chains that compose all organic molecules. As polluted sites continue to be identified, there will always be a demand for sanitation workers.

Keywords: Environmental remediation; Ground water; Contaminants; Pollutants

Introduction

Environmental cleaning is an important focus of the green economy. The sites that are polluted by industrial activity, the use of pesticides and fertilizers, or the release of other pollutants must be cleaned to redevelop or restore them to their natural state [1]. Prior to the development of modern environmental regulations, many companies simply release of hazardous materials into the environment. They dump chemicals and other pollutants on unused land or in lakes, rivers and streams. Sites would also become contaminated by accidents or equipment may not work properly. Environmental professionals use a number of technologies to clean up contaminated sites, a process known as environmental remediation [2].

Environmental remediation is the removal of pollution or water contaminants (both ground water and surface water) and the ground [3]. These wastes are eliminated to protect human health and to restore the environment. Restores brown field remediation or redevelopment or return to their natural state. Many of these sites, known as Superfund sites, fall under federal regulation and are supervised by the Environmental Protection Agency. Environmental Protection Agency oversees clean up of these sites, requiring the responsible party either for cleaning or reimburse the government for EPA-led cleanups [4]. Environmental sanitation is highly regulated and subject to a series of legal requirements, which are generally based on assessments of human health and the environment. Remediation projects can range from large, expensive projects, which many efforts are made to clean up contaminated sites, small less expensive projects, such as cleaning a road accident in which oil is spilled. In some cases, if a site is contaminated which cannot be closed and isolated as possible from the rest of the environment. Environmental Bioremediation projects usually begin with a site assessment to determine the project costs, and the technology that would be most appropriate for a particular site [5].

Environmental sanitation is carried on various media, with soil, sediment, groundwater and surface water. This article classifies remedies according to whether it is done on the water or soil. The Clean Water includes both groundwater and surface water, while the soil remediation includes topsoil, subsoil and sediments. Soil and water purification can be performed separately or together, depending on the type and extent of pollution. Water Sanitation is the process of removing contaminants from water. Surface water in lakes, streams, rivers, and can be directly contaminated by pollutants discharged directly into water or soil runoff. The majority of the population of the world depends on groundwater for drinking water and for agricultural use. Many regions have experienced groundwater pollution from wastes that have been disposed of or stored incorrectly on earth, where they percolate into the ground and were eventually transported downward into groundwater. Groundwater pollution has also occurred as a result of industry practices such as mining or drilling for natural gas and oil [6].

The soil remediation refers to the strategies which are used to cleanse and condition the ground. Soil contamination is caused by many of the identical factors that instigate groundwater contamination. Often, soil and water are contaminated from the same source and both must be cleaned simultaneously. Soil contamination may result from chemical spills, industrial activity and the exploitation of certain fertilizers and pesticides. Environmental sanitation can also be classified as in-situ or ex-situ. In-situ remediation process treat the contamination on the site without removing the ground, while the ex situ remediation includes the excavation soil or sediment and treat it before returning it to its original, also be classified state as in-situ or ex

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situ. Remediation methods in situ treat the contamination on the site without removing soil, while ex-situ remediation involves excavating soil or sediment and treating it, before returning it to original state. Clean Environment uses a variety of technologies and methods for cleaning contaminated areas [7].

Bioremediation is the use of micro-organisms for removing pollutants from soil or water. This is done either by the treatment of contaminated materials on site or removing contaminated materials, which are then processed elsewhere [8]. Different micro- organisms are used to remove contaminants and are usually suitable only for certain types of chemicals. These microorganisms may be fungi, bacteria, algae or certain plant species. Bioremediation is common to oil spills because microorganisms are extremely effective in breaking many chemicals present in the oil. This technique is often much less expensive than other technologies, but generally takes longer to decontaminate a site entirely [9,10].

Bioremediation techniques are currently used on hazardous waste sites. More specifically, they are applied in sites facilitating cleaning biodegradable contaminants. The majority of environmental risks in which bioremediation have proven them include those oil spills, contamination of gasoline, chlorinated solvents and other toxic chemical leaks [11,12].

Concluding Remarks

Environmental Bioremediation provides technical cleaning pollution by improving the natural biodegradation process. There is no doubt that bioremediation is currently paving a way to greener pastures. Whatever aspect of bioremediation is used, technology provides an efficient and cost effective way to treat contaminated water & ground. Its benefits generally outweigh the disadvantages, which is evident by the number of sites that choose to use this technology and its growing popularity. Once again thanks to bioremediation technology for cleaning the polluted environment and can therefore be used as a successive magical tool.

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