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Attenuation of the heavy metals present in the mill tailings of kolar gold fields (kgf)

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Pollution of different environments is due to human activities in recent years. Heavy metals become toxic when they are not metabolized by the body and accumulate in the soft tissues.

Industrial exposure accounts for a common route of exposure for adults. The presence of heavy metals in our environment had been of great concern because of their toxicity when their concentration is more than the permissible level.

In Karnataka state KGFs are believed to be the 2nd deepest gold mines in the world; there are 32 million tones of mill tailings spread in the mine area. These dumps primarily contain the heavy metals and cyanide compounds which became our concern causing the health problems in the habitats and contaminating the ground water.

Flame Atomic Absorption Spectrometry (FAAS) technique was used for the determination of heavy metals in the mill tailings. Project protocol were - **Sample I**: Dump without plantation. **Sample II**: Dump with plants (Eucalyptus and Agave). **Sample III** : Raw material dumped.

The attenuation of arsenic (As) was seen as, 20% decrease from sample III to sample I and 86.8% from sample I to sample II. The attenuation of Lead (Pb) was seen as, 94.33%% decrease from sample III to sample I and 33% from sample I to sample II. The attenuation of Zinc (Zn) was seen as, 152.7% decrease from sample III to sample I and 158.3% from sample I to sample II. The attenuation of Nickel (Ni) was seen as, 0% from sample III to sample I and 28% from sample I to sample II. The attenuation of Cobalt (Co) was seen as, 16.66% decrease from sample III to sample I and 20% from sample I to sample II. It was also observed that the attenuation of these heavy metals took place with time along with vegetation.

Biography

Dr Muralidhar.S.Talkad has completed his Ph.D from Bangalore University, working as a professor, Post Graduate Dept of Biotechnology and Applied Genetics, Dayananda Sagar College of biological Sciences.

Bangalore. Aged 46 years and his field of expertise were Biotechnology, Pharmacology and Toxicology which renders a competitive organizational growth in Teaching, R&D & New Herbal Drug Development. He has published more than 10 papers in reputed journals and serving as an editorial board member of repute.