Biological Wastes the Tool for Biosorption of Arsenic

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Abstract

Arsenic is now a recognized hazard of water, particularly in the groundwater. The problem of naturally occurring Arsenic in the groundwater is more or less a global reporting. Direct consumption of Arsenic contaminated water

remedial measure for Arsenic contaminated water. In light of the above, the problem was taken into consideration to

wastes, particularly the agrowastes were found to be potential enough; and they can be employed for biosorption of Arsenic.

B

Biosorp ion is he passi e p ake of hea me als b na ral ma erial or dead biomass. Biosorp ion is an inno a i e echnolog / hich o ers bes al erna i e for remo al of o ic me als from poll ed s reams. I in ol es he se of na ral ma erials s ch as agric l ral resid es [8], fores r / as e prod c s [9], microorganisms [10], casein [11] and s gar-bee p lp [12]. Na ral ma erials o er high capaci for hea me als decon amina ion. Me al-6 (a)Lang b[(d)12 6o4.9 (-6 39 ( )-5.9e p)12

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Received October 10, 2015; **Accepted** December 09, 2015; **Published** January 06, 2016

Citation: Srivastava S, Anil Dwivedi K (2016) Biological Wastes the Tool for Biosorption of Arsenic. J Bioremediat Biodegrad 7: 323. doi:10.4172/2155-6199.1000323

A

Some promising arsenic biosorben s ere inac i e, dead biological biomass, s ch as algae [23,24], asc lar plan s [25], f ngi [26-29], and bac erial ma erials [19]. Some biochars ere recen l foc sed for arsenic immobilisa ion from soils and adsorp i e remo al in aq eo s media [30-32] s a ed ha he phosphor la ion of biosorben res l s in o higher binding of arsena es o he cell all. Arsenic remo al from sol ion is also possible hro gh forma ion of comple es on cell s rface [33]. Plan s [20] heir par s or heir dried, sei ed, and chemicall rea ed seeds [25,34,35], and also he ind s rial or agric l ral resid e of asc lar plan s s ch as rice polish and orange as es [32,36] ere e al a ed as biosorben ma erial for arsenic remo al [25] repor ed chela ion of As (III) i h he OH gro ps for di eren fresh par s of he biomass of *Momordica charantia* follo ing Langm ir and Fre ndlich sorp ion models. e na re of sorp ion ere e al a ed from D binin Rad shke ich (D R) sorp ion iso herms and sed o e plain he he erogenei of s rface energies [25]. Fibres, lignins, cell lose, and o her cell alls binding s bs ance, s ch as phenols, c in, s berins and a es ha e also been s gges ed as a prominen ool for he p rpose [37]. Lignin and pec in, are s pposed o be connec ed i h he sorp ion of me al ions [38-41]. Plan bres are spacio s for sorp ion of me al ions and ha e been e al a ed for a er p ri ca ion [38]. Algina e, he o er cell all componen of bro n algae, Prokar o es cell alls, is made p of pol saccharides, pro eins, and lipids (holds ab ndan me al-binding f nc ional gro ps, s ch as carbo la e, h dro l, s lpha e, phospha e, and amino gro ps) and m shrooms, lamen o s f ngi, chi in, chi osan, and o her f ngi ha e been s died for arsenic re en ion [23,27,28,33,42]. Ho e er, no m ch a en ion has been gi en o nders and he mof e.EMC /Span 13(in)3 (a)19 ( )6e mog0La 0.6 (s)-8 (o)12 ((f e.EMC /Span 13(in)3 (a)19 ( )6e m13(ia[(c)6 (hi)3(o)12 (4s (h)0.[

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