

Interactive comment on “Phytoextraction and the economic perspective of phytomining of heavy metals” by Amjad Ali et al.

Anonymous Referee #1

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General Comments

The review manuscript entitled “phytoextraction and the economic perspective of phytomining of heavy metals” submitted to SE is well written. The way of presentation and given information are to the point and compatible to the title. It will provide new insights in studying the hyper-accumulator plants for phytomining of different heavy metals that will be more economical in comparison to the conventional and inexpensive phytoremediation approaches. As a reviewer I suggest some changes that should be refurbished before publishing of this paper. In the abstract section all the details should be made connected and relevant while in the introduction section kindly give more detail for the problem exist, how this problem will be solved. Include some benefits of phytomining, why phytomining is better to conventional methods. The authors focused on Pb and

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Cd, so provide information regarding its sources and effects on plants.

Specific comments: Be consistent either use “Cadmium” or “Cd” in the entire text. Be consistent either use “Lead” or “Pb” in the entire text. Be consistent either use “Mercury” or “Hg” in the entire text. Be consistent either use “Copper” or “Cu” in the entire text. Be consistent either use “Zinc” or “Zn” in the entire text.

Line 11-12, Page 3: Industrialization improved the living standard of man, meanwhile posed numerous health and environmental threats. Add “has” after industrialization.

Line 6-8, Page 4: Phytoremediation permanently remove the bioavailable fraction of 6 contaminants, minimal site disturbance and is well-suited with risk-based contaminated land management systems. Add “removes” in the sentence.

Line 21-22, Page 4: Phytoremediation indirectly increase soil carbon content, retain nutrients and improve soil biochemical processes. Add “increases” in the sentence.

Figure. 1. Natural and anthropogenic sources of heavy metals. Correct the spelling of “Corrosion”. Line 8, page 5: Arrange the given references date wise. Line 16-17, Page 6: The world rapid social and economic development increased the Pb concentration in urban and industrial areas. Add “has” before “increased” in the sentence.

Line 17-18, Page 6: In 1923, lead in the form of tetraethyl lead[(CH₃CH₂)₄Pb] was introduced as an anti-knock agent in fuel, which increased the lead 18 concentration in the atmosphere. Add anti-knocking agent in the sentence. Line 5-7, Page 8: The rise in Cd and Pb content in environment, caused by anthropogenic activities, stress the need for a sustainable indigenous remediation technology. Modify to “stresses”.

Line 1-3, Page 10: Phytoremediation involve the use of plants to extract, sequester, and detoxify environmental contaminants (heavy metals, radionuclides, pesticides and polychlorinated 2 biphenyls) from soil. Modify to “involves”.

Line 7-8, Page 10: Phytoremediation cost 25-100 US\$ per ton, 7 while conventional excavation/landfill cost is 150-350 US\$. Modify to “costs”.

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Line 17-18, Page 10:Phytoremediation provide an opportunity for food biofortification with micronutrients 17 (Fe, Zn) and ultimately provide an inorganic supplement for improving human health. Modify to “provides”.

Add “T” in the table 2 and serial number also table 2 and 4.

Line 1, Page 27:The efficiency of hyperaccumulator plants used in phytoextraction of HMs depend on... Modify “depends on”.

References: All references given in the text should be matched with literature cited section and vice-versa.

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2017-75>, 2017.

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