



## **Biochars ability to sequester metals in contaminated mine spoils: A greenhouse study**

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Biochars are under consideration as an amendment to remediate contaminated mine spoils and improving plant growth cover. Scientists from the USDA-ARS, US EPA, and Colorado State University have conducted a greenhouse experiment using Miscanthus (*Miscanthus giganteus*) biochar produced at 700<sup>0</sup>C to reclaim mine spoils obtained from the Formosa mine site (near Riddle, Oregon, USA). Spoil at this site is acidic and has elevated total and plant available copper (Cu) and zinc (Zn) concentrations. Blue Wildrye (*Elymus glaucus*) was planted in mine spoil that was treated with Miscanthus biochar at 0, 1, 2.5 and 5% (w/w), lime, and N-P-K fertilizer. Mine spoil treated with biochar alone (no lime) along with samples (no lime or biochar) were also included. After almost 60 days of incubation, above ground and below ground wildrye samples were collected. Remaining spoils were then extracted with Mehlich 3 reagent and plant available Cu and Zn concentrations measured. Mehlich 3 extractable Cu and Zn concentrations decreased significantly only in the lime treated samples—their concentrations were not influenced by biochar. Our preliminary findings are that lime is an important amendment to reduce metal concentrations in mine spoils and that choice of biochar type must be carefully considered beforehand.