

## عنوان مقاله:

Effects of modified peanut biochar types on morphological and biochemical traits of sainfoin seedlings grown in soil containing heavy metals lead and zinc

## محل انتشار:

سومین کنفرانس بین المللی و ششمین کنفرانس ملی صیانت از منابع طبیعی و محیط زیست (سال: 1401)

تعداد صفحات اصل مقاله: 14

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## خلاصه مقاله:

The current research was designed and implemented as a pot experiment in the greenhouse and laboratory complex of Mohaghegh Ardabili University in ۲۰۲۰ and ۲۰۲۱. To evaluate the effects of modified peanut pod biochar on some morphological and biochemical traits of sainfoin seedlings grown in soil containing heavy metals, a pot experiment was conducted as a completely randomized design (CRD) in four replications. Experimental treatments were a control group (no use of biochar), two levels of simple biochar (۲.۵ and ۵%), two levels of biochar treated with phosphoric acid (۲.۵ and ۵%), and two levels of magnetic biochar (۰.۵ and ۱%). Sainfoin seeds (local variety) were obtained from farmers in the surrounding villages of Ardabil. A seedling growth test was performed after determining seed moisture percentage and germination. Based on the results, biochar application positively affected physiological parameters, such as the leaf greenness index, in addition to growth traits. The content of soluble sugars in leaves and roots increased by treating the pots with different types of biochar. The activity of guaiacol peroxidase and polyphenol oxidase enzymes significantly increased in the leaves and roots of control seedlings compared to biochar support treatments. The application of biochar reduced the amounts of lead in the leaves and roots of sainfoin seedlings and caused a decrease in the transfer factor of lead and zinc compared to the control treatment (no use of biochar). The lowest (۰.۱۴) and the highest (۰.۷۲) values of the lead transfer factor were obtained in the ۵% acid treatment and the control treatment, respectively.

## کلمات کلیدی:

modified peanut biochar, heavy metal stress, transfer factor, sainfoin seedlings

## لینک ثابت مقاله در پایگاه سیویلیکا:

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