

عنوان مقاله:

Physiologic parameters of faba bean grown under saline condition, deficit irrigation and biochar

محل انتشار:

دوفصلنامه تحقیقات کشاورزی ایران، دوره 40، شماره 2 (سال: 1401)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Salinity and water stresses and also low fertile soils are the main constraints in the agricultural production of Iran. The purposes of this study were to examine whether the application of wheat straw biochar (with EC of ۹.۳ dS/m) can enhance faba bean's physiological characteristics and growth under greenhouse conditions. Hence, three levels of biochar (۰, ۱.۲۵ and ۲.۵ % w/w), irrigation regimes (۵۰, ۷۵ and ۱۰۰ % of crop water requirement) and irrigation water salinities (۰.۶, ۴ and ۸ dS/m) were applied using the factorial arrangement in a complete randomized design with four replications. The application of ۲.۵ % biochar under ۰.۶ dS/m saline water and ۵۰ % deficit irrigation significantly increased crop height, leaf area index, stomatal conductance by ۱۲, ۱۴ and ۱۱ %, respectively, and declined leaf temperature by ۳ % in comparison with that obtained at no biochar application. The addition of ۲.۵ % w/w biochar under ۸ dS/m and ۵۰ % deficit irrigation significantly decreased crop height and stomatal conductance by ۲۱ and ۲۹ %, respectively, in comparison with that obtained at no biochar application, ۸ dS/m and ۵۰ % deficit irrigation. Moreover, the application of ۲.۵ % w/w biochar together with ۰.۶ dS/m saline water and ۱۰۰% irrigation water led to having maximum fresh seed yield and ۱۰۰-seed dry weight. In conclusion, the application of ۲.۵ % w/w biochar with high .electrical conductivity was not appropriate for faba bean under saline conditions at any water regimes

کلمات کلیدی:

Fresh seed yield, Greenhouse condition, Leaf temperature, Protein concentration, Stomatal conductance

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