

عنوان مقاله:

ZnO affects soybean grain yield, oil quantity and quality and leaf antioxidant activity in drought stress conditions

محل انتشار:

مجله فرآیند و کارکرد گیاهی، دوره 8، شماره 34 (سال: 1398)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Sima joorabi - Lorestan University

Hamid Reza Eisvand - Lorestan University

Ahmad Ismaili - Lorestan University

Aliheidar Nasrolahi - Lorestan University

خلاصه مقاله:

Lack of available water in arid and semi-arid regions has a negative effect on the production of soybean (*Glycine max* L.). Nano zinc chelate (ZnO) has the potential to alleviate this issue through overcoming zinc deficiency and thereby improve plant function. Therefore, to evaluate the effectiveness of ZnO application on soybean in drought stress conditions, a split-plot experiment based on randomized complete block design was conducted. Irrigation treatments (۱۰۰%, ۸۰%, ۶۰% and ۴۰% water requirement) was the main plot and foliar application of nano-zinc (۲ml.L^{-۱} foliar treatment vs. no-application control) was the subplot. The results showed that drought stress had negative effects on plant yield and productivity. Under drought, grain yield, seed oil percentage, oil yield, palmitic acid, stearic acid, cis-oleic acid and linoleic acid were decreased. ZnO application significantly increased proline content, catalase and peroxidase activities. However, the percentage of palmitic acid, stearic acid, linoleic acid and α -linoleic acid decreased with the ZnO foliar spray. In general, results showed that, ZnO treatment, with enhancing antioxidant enzymes activity and changing physiological parameters decreased adverse effects of drought stress on soybean plants.

کلمات کلیدی:

Catalase, fatty acids, foliar spray, peroxidase

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1367375>

