

عنوان مقاله:

Cadmium-induced Stress and Antioxidative Responses in Different Brassica napus Cultivars

محل انتشار:

مجله علوم و فناوری کشاورزی، دوره 14، شماره 4 (سال: 1391)

تعداد صفحات اصل مقاله: 9

نویسندگان:

T. Touiserkani - *Department of Agricultural Biotechnology, Imam Khomeini International University, Qazvin, Islamic Republic of Iran*

R. Haddad - *Department of Agricultural Biotechnology, Imam Khomeini International University, Qazvin, Islamic Republic of Iran*

خلاصه مقاله:

To estimate plant resistance to Cadmium Chloride (CdCl_2) stress for phytoremediation purposes, the effect of cadmium (Cd) phytotoxicity was assessed on total soluble protein, chlorophyll (Chl) content and antioxidant enzymes in the leaves of three different Brassica napus (*B. napus*) cultivars; Mohican, Reg.Cob and Okapi. Plants were exposed to three levels of CdCl_2 (0.75, 1.5 and 2.25 mM) in irrigation water. A reduction in protein and Chl content was noted for all treatments in the three cultivars. Generally, superoxide dismutase (SOD) and ascorbate peroxidase (APX) activities were increased with 0.75 mM CdCl_2 and then decreased at higher concentrations. SOD activity was enhanced up to 1.5 mM CdCl_2 concentration in Mohican cultivar. Moreover, APX activity of Okapi cultivar was increased at a much higher rate of CdCl_2 levels compared to Mohican and Reg.Cob cultivars. Different concentrations of CdCl_2 induced a reduction in the catalase (CAT) activity of Mohican and Reg.Cob. However, this activity was increased with 0.75 mM CdCl_2 in Okapi and then decreased with higher concentrations. These results indicate that *B. napus* cultivars have different tolerances to CdCl_2 stress and in consequence, different phytoremediation efficiencies. Moreover, because Okapi possesses a higher antioxidant enzyme activity than the other two cultivars, it is suggested that it is probably the most tolerant cultivar to CdCl_2 stress.

کلمات کلیدی:

Antioxidant enzymes, *B. napus*, Cadmium Chloride, Cultivars, stress

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1826998>

