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Šećerni profil kao pokazatelj uticaja tetraoksana na metabolizam kukuruza u ranim fazama rasta i razvića

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U ovom radu ispitan je uticaj serije 1,2,4,5-tetraoksana na metabolizam klijanja u ranim fazama rasta i razvića kukuruza. Primenom visoko-efikasne jonske hromatografije sa amperometrijskom detekcijom analiziran je sadržaj šećera u korenu i izdanku kukuruza, čija semena su bila potopljena u rastvore tetraoksana koncentracija 1×10^{-6} M, 1×10^{-9} M i 1×10^{-12} M. Sadržaj analiziranih šećera ukazuje na različit odgovor biljke na prisustvo svakog od ispitivanih tetraoksana. Uočeno je da dolazi do povećanja sadržaja gotovo svih šećera u tretiranim uzorcima, u odnosu na kontrolne, a naročito šećera koji povećavaju toleranciju biljke na abiotski stres, kao što su glukoza, saharoza, rafinoza, trehaloza i arabinoza. Za svaki od ispitivanih tetraoksana mogu se definisati optimalne koncentracije koje bi imale najveći uticaj na pravilan rast i razviće kukuruza.

Sugar profile as a tool for the assesment of influence of tetraoxanes on germination and starting growth phase of maize seeds

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The influence of the series of 1,2,4,5-tetraoxanes on metabolism of germination and starting growth phase of maize seeds was examined. Sugar content in shoot and root of seeds immersed in tetraoxane solution of different concentration, 1×10^{-6} M, 1×10^{-9} M i 1×10^{-12} M, were determined by High-Performance Anion-Exchange Chromatography with Pulsed Amperometric Detection. The content of all analysed sugars revealed different responce of the plant to the presence of each of the tested tetraoxanes. It has been observed a higher content of almost all sugars in the treated samples, compared to control, and especially sugars which increase the tolerance of the plant to abiotic stress, such as glucose, sucrose, raffinose, trehalose and arabinose. The optimal concentration of each tested compound that would have the greatest effect on proper growth and development of maize, could be defined.