عنوان مقاله:

Effect on germination parameters and early growth in barley (Hordeum vulgare L.) seeds exposed to chitosan and silicon dioxide (SiO2) nanoparticles

محل انتشار:

پنجمین کنفرانس ملی و اولین کنفرانس بین المللی کشاورزی ارگانیک و مرسوم (سال: 1396)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Plants need to be included to develop a comprehensive toxicity profile for nanoparticles (NPs). In this experiment, theeffects of chitosan silicon dioxide (SiO2) NPs with concentrations 0 (control), 30, 60 and 90 ppm was assessed onbarley seeds. For starting the experiment, the barley seeds were separately placed in petri dishes. Then, 5 mL of theboth NPs concentration were added to them. Results showed that the treated seeds with different concentration of NPsshowed significant effects on barley germination and growth parameters. Applications of both NPs in 90 ppm,especially SiO2 NPs, displayed adverse effects on the studied traits; whereas, using both NPs with 30 or 60 ppm had notsignificant effects on majority of the studied traits in barley plants. In general, the usage of these NPs in highconcentration (90 ppm) could curb the undesired growth and germination of barley plants.

کلمات کلیدی:

Vigor Index, Chitosan, Seedling length, Toxicity, SiO2