

عنوان مقاله:

Potato yield and tuber quality as affected by gibberellic acid and zinc sulfate

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خلاصه مقاله:

Abstract Obtaining high potato (*Solanum tuberosum* L.) tuber yield through increased number and weight of quality tubers is important for farmers while the quality factors are of interest for food processing industries. Potato processing industries require high quality tubers having the highest possible dry matter, starch and protein contents. A two-year field study was carried out as a factorial experiment in a randomized complete block design during ۲۰۱۳ and ۲۰۱۴. Gibberellic acid (GA₃ at ۰, ۱۰۰, ۲۰۰ and ۴۰۰ mg·L⁻¹ levels) and zinc sulfate (at ۰, ۵۰۰, ۱۰۰۰ and ۲۰۰۰ mg·L⁻¹ levels) were foliar sprayed on potato plants ۲۰ and ۵۰ days after tuber sprouting, respectively. There was no significant difference in all measured criteria between two years of experiment. Comparing to control, a ۳۸% increase in total tuber yield resulted from treatment with ۲۰۰ mg·L⁻¹ GA₃ and ۱۰۰۰ mg·L⁻¹ zinc sulfate. The greatest tuber dry matter content (۲۴.۳۳ g·۱۰۰g⁻¹ fw) obtained from ۲۰۰ mg·L⁻¹ GA₃ plus ۲۰۰۰ mg·L⁻¹ zinc sulfate treatment, while the highest starch contents (۳۲.۵۶ % tuber fresh weight) was obtained from sole application of zinc sulfate at ۲۰۰۰ mg·L⁻¹. Application of GA₃ at ۴۰۰ mg·L⁻¹ and zinc sulfate at ۲۰۰۰ mg·L⁻¹ resulted the highest tuber crude protein content of ۸.۳۷% tuber dry weight which was over twice as control treatment. Manipulating plant nutrition and fertilization could be used as a powerful tool to obtain desired quality and quantity of potato tuber.

کلمات کلیدی:

Keywords: Seed tuber, starch, tuber crude protein, tuberization

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