

STUDY OF ZINC SPRAYS AND IT'S INFLUENCE ON REDUCTION OF ADVERSE EFFECTS OF SALINE WATER ON YIELD OF SOLANUM TUBEROSUM CV.AGRIA

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INTRODUCTION: Catering food as the main human requirement has accompanied with different problems . so that a large number of population in the world are suffering from hunger . plants provide the major part of human food especially in low – salary countries . among them , potato is one of the tuberic products which plays on important role on nutrition of people all around the world and is one of the 18 major food plants of the world . by production of more than 100 million too in a year , this product has the 13th rank among the agricultural products of the world .

MATERIALS AND METHODS: One of the aims of doing this research is access to resistant varieties to salinity stress and reducing adverse effects of salinity by using zinc in order to reach the goals of agricultural development . in 1390 – 1391 , an experiment was done in farm –like condition at research station of azad university of golbahar in province khorasan in order to investigate the effects of zinc sprays on yield of solanum tuberosum cv.agria . the software 15 spss was used to statistical calculations and the software excel 2007 was used to drawing the graphs . the experiment was performed in a randomized complete block design with 4 salinity levels (2,4,8 and 12 DS) and 2 zinc sulfate levels (0 and 2/5 in 1000) in 3 repeats .

RESULTS AND DISCUSSION: the results of variance analysis in probability of 95% showed that the effects of salinity and zinc are meaningful in all of the studied traits . the results of duncans test indicated that the number of tubers per bush(herb) , yield of marketable tubers , yield of marketable tubers , yield of saleable tubers , total tuber yield .

Total dry tuber yield and bush height under salinity stress were reduced and after zinc sprays were meaningfully increased . percentage of dry matter in salinity stress condition was increased and after zinc spraying , only in control treatment , dry matter was increased and in treatments with higher levels of salinity , the percentage of dry matter was reduced . in all of the cases , the treatment salz2 is recommended as the best one .The percentage of dry matter increased in salinity stress condition which is considered as an advantage in food processing industry , because it preserving the product texture through processing . thus , in this case , treatment s4zl is preferred and by zinc spraying , only in control treatment , the percentage of dry matter increased and in treatments with higher level of salinity , it causes reduction in percentage of dry matter . due to this fact that reduction of dry matter percentage causes reduction in quality of product and damaging it's texture through processing , using zinc in salinity stress condition is recommended only in low levels and treatment slz2 is the best one in this way .

Key words : salinity stress , zinc element , potato (solanum tuberosum) , food products



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