Effect of paclobutrazol and benzyl aminopurine application at two growth stages on yield and breaking dormancy of potato minitubers

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Abstract

Due to production importance and potato minituber sleep, this research was carried out as factorial based on randomized complete blocks design with three replications at the Research Greenhouse of Ferdowsi University of Mashhad, Iran, in 2013. Treatments included foliar application of growth regulators at two physiological growth stages (stolen initiation and tuber initiation) and growth regulator level (control, 100 and 200 mg/L paclobutrazol, 100 and 200 mg/L benzyl aminopurine). Results showed that paclobutrazol treatments significantly reduced number of minitubers per plant, minituber weight, and length and diameter of minituber. Benzyl aminopurine didn't have significant effect on the mentioned traits. Also, the difference between paclobutrazol concentration levels in term of minituber yield was not significant. Application of 100 and 200 mg/L paclobutrazol at both the stolen and tuber initiation stages increased time of reaching the 5, 10, 50, 90 and 95% of maximum germination of potato minitubers, as compared to control, and most of this effect was at tuber initiation stage. In contrast, application of benzyl aminopurine treatments at tuber initiation stage reduced all germination traits significantly; but there was no difference between different concentrations.

Keywords: Number of minitubers per plant, Germination, Agria cultivar, Foliar application, Weight of minituber.

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