



Effects of Seed Priming on Germination Improvement and Seedling Vigor in *Zygophyllum Atriplicoides* under Temperature Conditions

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Abstract

Temperature is an important environmental factor in plant distribution and the most important factor in determining the success or failure of seedling establishment. The aim of this study was to investigate the effects of different levels of gibberellic, salicylic and ascorbic acid on improvement of germination indices of *Zygophyllum atriplicoides* under temperature stress in laboratory. Factorial test in the completely randomized design with four treatments was used for data analysis. Chemical stimulators used in this study include: 3 levels of gibberellic acid (125, 250 and 500 ppm), 3 levels of salicylic acid (100, 200 and 300 mg/l), 3 levels of salicylic acid (100, 200 and 300 mg/l) and 6 levels of temperature treatment (5, 10, 15, 20, 25, 30°C). The results showed that with increasing temperature, specifications for germination (germination percentage, speed of germination, root length, shoot length, seedling length, vigor or seed) also increased. When the temperature reached 25°C, the maximum amount of chemical stimulators is obtain and decreased with increasing temperature from 25 °C. All chemical stimuli increased germination compared to the control treatment. Chemical stimuli used in 250 ppm gibberellic acid was the most effective acid concentration to modulate the negative effects of temperature stress on *Z. atriplicoides* and is recommended.

Keywords: Priming, Germination, Temperature, *Zygophyllum atriplicoides*.

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