Title : Effect of seed soaking with various solution on growth and some biochemical changes of Chinese white radish seedling

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ABSTRACT

Seed soaking in various solutions before planting is a method used to promote seed germination and seedling growth. This study consisted of two experiments. Experiment 1, effects of seed soaking and seed watering of trehalose at different concentrations on growth of Chinese white radish seedlings were investigated. The treatments included trehalose solutions at concentrations of 0, 1, 5, 10, 20, and 50 mM. The results showed that seed watering with high concentrations of trehalose reduced seedling growth. Experiment 2, the effects of seed soaking with different solutions on growth and changes in some biochemical compounds in Chinese white radish seedlings aged 4–5 days were examined. Seeds were soaked in 10 mM trehalose, 50 mM KCl a combination of 10 mM trehalose and 50 mM KCl and distilled water as the control before being sown in find sand. The seedlings were watered daily with distilled water for 7 days. Growth parameters, including shoot height, root length, and fresh weight, were recorded from days 3 to 7. Additionally, chlorophyll content, total phenolic content, and antioxidant activity were measured on days 4 and 5. The results revealed that seedling height was greater on day 4 than on day 5, although not higher than the control. However, some physiological compounds tended to increase in seedlings from seeds soaking in 10 mM trehalose. This study indicates that seed soaking in a 10 mM trehalose solution before planting is a method to increase the accumulation of some biochemical compounds in the Chinese white radish seedlings.