

Influence of Salicylic Acid on Submergence Stress Recovery in Selected Rice Cultivars (*Oryza sativa* L.)

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Abstract : Rice is susceptible to flooding due to its semi-aquatic characteristics, which enable it to thrive in wet or submerged environments. The development of aerenchyma allows for oxygen transfer, enabling faster lengthening of submerged shoot organs. Rice's germination and early seedling growth phases are highly intolerant of submersion, resulting in survival in low-oxygen environments. The research involved a study on rice plants treated with salicylic acid at different concentrations. Hypo was used for washing, while a reagent was used for submergence treatment. The plants were waterlogged for 11 days and submerged for 7 days, with control plants receiving distilled water. The study found a significant difference between Jirani Zawara's control and treated plants, with plants treated with 2 g/L of S.A. showing a 6.00 node increase per plant and Faro cultivars having more nodes. The study found significant differences between the control and treated plants, with the Jirani Zawara plant showing longer internode lengths and the Faro cultivar having longer internode lengths, while the B.G. cultivar had the longest. The research found that the Jirani Zawara cultivar treated with 3 g/L of S.A. produced tallest plants, with heights increasing from 14.43 cm to 15.50 cm in Faro cultivar S.A., and the highest height was 16.30 cm. The study reveals that salicylic acid significantly enhances the number of nodes, internode length, plant height, and root length in rice cultivars, thereby improving submerged stress recovery and promoting plant development.

Keywords : rice, submergence, stress, salicylic acid

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