

ENHANCEMENT OF SALINITY TOLERANCE OF RED CABBAGE USING POTASSIUM NITRATE AND POTASSIUM SILICATE

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Executive Summary

A pot experiment was conducted in the Net House of Horticulture Farm of Sher-e-Bangla Agricultural University, Dhaka, during the period from October 2021 to March 2022 to study the performance of red cabbage in response to potassium nitrate and potassium silicate under different salinity levels. The two factors experiment was laid out in Complete Randomized Design (CRD) with three replications. The treatments consisted of 3 different salinity levels viz., S_0 = Control ($\pm 0.8 \text{ dSm}^{-1}$) EC, S_1 = 4 dSm^{-1} EC and S_2 = 8 dSm^{-1} EC and application of potassium silicate and potassium nitrate viz., C_0 = Control (Water), C_1 = 3 mM potassium silicate, C_2 = 4 mM potassium nitrate. Data on different growth, biochemical parameters and yield contributing characters of red cabbage were recorded. Considering the level of salinity, significant variation was recorded on yield per plant (g) of red cabbage due to different level of salinity. It was found that the head weight of red cabbage gradually decreased by the increase of salinity levels and this reduction rate was decreased by foliar application of potassium silicate and potassium nitrate. The highest head weight (807.7g/plant) was noticed from S_0 where as it was the lowest (621.8g) in S_2 . In the case of potassium silicate and potassium nitrate application, the maximum yield (734.90 g) was recorded from C_2 whereas the lowest yield (646.80 g) was recorded from C_0 . Regarding treatment combination, the lowest yield (590.80 g) was recorded from treatment combination of S_2C_0 , while the yield increased in S_2C_1 (634.40g) and S_2C_2 (640.20g). Considering the result of all growth, yield and biochemical parameters, It can be concluded that, both potassium silicate and potassium nitrate was found to be effective to enhance salt tolerance of red cabbage.

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