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Study of bio-chemical basis of adoptability of phalsa plants in salt affected soils

Himanshu Singh, S.N. Singh and A.K. Singh

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ABSTRACT : In sodic and saline soils, total nitrogen, phosphorus and potassium contents decreased with increasing sodicity and salinity levels in the leaves of Phalsa seedlings and Calcium and magnesium contents showed a decreasing trend with the increase in sodicity levels. Maximum status of these nutrients were observed in the plants grown in the normal soil conditions. In saline soil, Ca and Mg showed reverse trend and their contents increased with increasing salinity levels in the seedlings. Na contents in the leaves increased with increasing sodicity levels. Minimum Na content was observed in Normal. However, Na content decreased with increasing salinity levels. Chloride showed a reverse trend of Na, it decreased with increasing sodicity levels and increased with increasing salinity levels. Invariably, seedling plants contained slightly higher status of leaf nutrients. Total chlorophyll content in the leaves of seedlings decreased with increasing sodicity and salinity levels. Minimum chlorophyll content was observed in the plant at 32.00 ESP and 7.5 mmhos/cm salinity levels with maximum value in Normal. Free proline and total free amino acids status in the leaves of Phalsa seedlings increased with increasing sodicity and salinity levels. These chemical constituents also showed slightly higher content in the seedlings in comparison to budded plants.

Key Words : Phalsa (*Grewia subinaequalis*), sodicity, salinity, bio-chemical evaluation.