

An evaluation approach of salt stress tolerance in carrots

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Salinisation is a major problem in crop and vegetable production. Globally the soil salinity increases as a result of extensive irrigation of crops and vegetables. Many activities are carried out to develop salt stress tolerant cultivars in many crop species worldwide. Carrot has been described as sensitive to salt stress by several authors, but there are no statements to salt stress tolerance in broad carrot collections e.g. gene bank material, landraces and modern cultivars.

To create new salt stress tolerant carrot genotypes, a suitable evaluation approach

was necessary. Results of the methodological pre-experiments, the impact of salt solution to the germination of carrot seeds and the influence of different salt concentrations on agronomical and morphological characters as well as sugar compounds in roots were presented.

Finally, a method was established and more than 120 carrot genotypes from different geographic origin were evaluated for their ability to tolerate salt stress. A new carrot cultivar with an enhanced salt stress tolerance may lead to a sustained increase to the global carrot production.