

Rehabilitation of saline soils in the semi-arid regions of Pernambuco, north-east Brazil

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In drylands salinity is often very prominent, caused by the input of sodium chloride and other salts and the lack of drainage. In this environment the excesses of soluble salts in the soils have a large influence on the ecosystems and productivity in extensive areas. Halophytes may serve to improve the ecosystem production. They are model plants for the understanding of the adaptation strategies in such habitats.

Aim of the presented study was to identify suitable plants for their reestablishment on saline soils in the semi-arid regions of Brazil. The investigations were carried out in two different sites of the Empresa Pernambucana de Pesquisa Agropecuária (IPA) and are located in the semi-arid region of the State of Pernambuco in northwest Brazil. The annual rainfall is in São Bento do Una 650 mm a⁻¹ and in Serra Talhada 895 mm a⁻¹. Using tropical halophytes is a possible way for soil protection and land rehabilitation. In screening experiment 13 of 24 were identified as suitable plants for the rehabilitation experiments. Further informations are needed about salt tolerance of other indigenous species and populations. Phytomelioration by plantings on saline soils helps to minimize the widespread negative effects of salt desertification. Studying natural halophytes and ecosystem processes are very important for all those regions where salinity has reached such a level that desalinisation techniques are much too costly.



Soil degradation in in the semi-arid regions of Pernambuco, north-east Brazil