

DESALINATION AND REMOVING SODIUM PERMANENTLY BY FLOODING METHOD IN SOUTH DASHT AZADEGAN

Hamid Shariati Behrouzi, Marjan Padidar

PhD students of department of Soil Science, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran

h.shariatib@yahoo.com

INTRODUCTION

The country of Iran due to climatic conditions and geographic location specific, sodium and saline soils are found on a wide scale and often saline soils in groundwater salinity is less than 2 meters in depth has been achieved. Due to limited soil and water resources and the need for optimum use of available resources and provide new resources for agricultural development, leaching studies and land reform in South Dasht Azadegan to improvement and proper utilization of the land estimate the amount of water required for leaching of soluble salts in the soil profile was performed.

MATERIALS AND METHODS

In order to draw salinity and sodium curves in the four areas in South Dasht Azadegan (Three base stations using an alternate method of flooding) and effects of amendments on leaching salts and sodium, leaching tests at four locations in the depths of 25-0, 50-25, 75-50, 100-75, 125-100, 150-125 cm was performed. The empirical formulas for use in estimating the water needed to refine target areas were developed.

RESULTS AND DISCUSSION

Soil texture in the layer of 50-100 cm is silt loam and in other layers is silty clay loam. Average soil infiltration rate and hydraulic conductivity of soil in situ experiment is 0.22 meters per day. Limiting depth at the test site was located at a depth of 3 meters and ground water in depth of 2.5 m was observed that relatively high. The average bulk density of soils is 1.3 g cm^{-3} . In the first leaching 10.62 cm of water leaching, infiltration mode is out of the soil profile. Therefore, the sum of 175 cm of water applied, 160.62 cm gravity through the layers of soil and leaching has caused. The results of soil analysis before and after testing, it can be inferred that the soil class was tested before S_4A_4 that after applying the 1.75 m water leaching S_2A_2 grade change is made exact amount of water per depth of soil salinity and sodium reduction is made possible through the curve. The water used in this experiment is light Karkheh river water and leaching of water was used in all tests. It should be noted the salinity of the water high limited, although the SAR and disadvantage caused by the risks of sodium is not restricted.

Keywords: Leaching, soil salinity, improve soil

REFERENCES

1. Gardner, W.R. and Fireman, M. 1985. Laboratory studies of evaporation from soil columns in the presence of a water table. *Soil*, 5:244-249
2. Gupta, R.K. M. Sharif Zia. 2002. Research and Extension Issues for Farm Level Impact on Productivity of Rice-wheat Systems in The Indo gangetic Plains of India & Pakistan a Resource Book



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