

EFFECT OF INDUCED SALINITY ON THE GERMINATION AND SEEDLING GROWTH OF TWO CULTIVARS OF *Cicer arietinum* L.

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ABSTRACT

Two cultivars, viz.: CM-72 and NIFA-88 of *Cicer arietinum* L. were tested under 2.5, 5.0, 7.5, 10.0, 12.5, and 15 dS/m concentration of NaCl, Na₂SO₄, MgCl₂, and MgSO₄. The percent germination, plumule and radicle growth of both the cultivars generally reduced at and above 5.0 dS/m concentration. Similarly, fresh and dry weight of the cultivars declined only in NaCl treatments. While moisture contents of seedlings of both the cultivars almost remained unaffected or were slightly more in the test compared to their control. However, further studies in field are required to see their behavior in nature.

INTRODUCTION

Pakistan is losing nearly 40 thousand hectares of land to salinity (12). Growing crops in such soils might be a possible approach for utilizing such unproductive lands. Salinity affects growth and germination of crops and a successful salt tolerant species might be an asset for such lands. Studies have shown that *Brassica* (2, 7, 14, 21), sunflower (4), wheat (11, 22), tomatoes (1), soybean (16), chickpea (19), corn (23), rice (3, 20) and some other crops (6, 19) can be cultivated on saline habitats due to their tolerance for salts. Two gram-blight resistant cultivars, viz.: CM-72 and NIFA-88 of *Cicer arietinum* L. have been recommended for cultivation on dry lands of N.W.F.P. Chickpea is a source of pot herb and protein for human use. It serves as fodder for animals. It also provides organic matter and increases nitrogen contents due to N-fixing root system.

The present study was done to see if both these cultivars can tolerate various levels of salinity under laboratory conditions. The findings would help in making further studies in the field.

MATERIALS AND METHODS

Seeds of Cv. CM-72 and Cv. NIFA-88 of *Cicer arietinum* L. were obtained from Agricultural Research Station, Sarai Nauring, District Lakki Marwat. Six levels of