

A PRELIMINARY STUDY OF THE EFFECTS OF ELECTROMAGNETIC SALINE IRRIGATION WATER ON GROWTH AND YIELD OF LEAF MUSTARD (*BRASSICA JUNCEA* L.): A POT EXPERIMENT

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Summary

Application of salt affected water in crop production leads to soil salinization. Using of magnetic irrigation water, which was treated by passing through a magnetic field, is an approach to overcome this challenge. A pot experiment was therefore, conducted to examine the effect of the electromagnetic treatment of saline irrigation water types on growth and yield of leaf mustard (*Brassica juncea* L.), soil salinity of salt-affected alluvial soils. The one factor research were arranged in a completely randomized design, 4 replications, including three types of irrigation water (tap water, 3‰ saline water (control) and 3‰ saline water treated with electromagnetic field). The electromagnetic treatment was applied by passing 2 cycles the 3‰ salt affected water through a 2000-4000 Gaus magnetic field at 2-3 m³ per hour flow rate. It was found that the electromagnetic treatment of 3‰ saline water improved significantly the quality of irrigation water regard to reducing EC value, solute Na⁺, SAR and total dissolved solids (TDS) in water. The preliminary results showed that irrigation with 3‰ saline water treated with electromagnetic field enhanced the plant height (6.2% increasing), width of leaf (12.1% increasing), led to improving fresh yield (51.6 g/pot) and biomass (3.10 g/chậu) of leaf mustard in comparison of those with control. Application of electromagnetic treated saline water didn't increase soil salinity (ECe, SAR, ESP) compared to the control. Hence, the 3‰ saline water treated with electromagnetic field could be used for irrigation when the fresh water becomes salty without increasing soil salinity and improving the growth and yield of leaf mustard.

Keywords: *Leaf mustard, electromagnetic water, salt affected soil, salt affected water, tap water.*