



وزارة التعليم العالي والبحث العلمي  
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**Impact of NaCl, ,  $MCl_2$ , and  $CaCl_2$  on seed germination,  
seedling growth on turnip**

**( *Brassica rapa rapa* )**

المشرف العلمي

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**Impact of NaCl, , MgCl<sub>2</sub>, and CaCl<sub>2</sub> on seed germination, seedling growth on turnip  
( *Brassica rapa rapa* )**

**ABSTRACT**

This study was conducted to compare the effects of NaCl, MgCl<sub>2</sub> and CaCl<sub>2</sub> on the germination of *B. rapa rapa* seed, seedling growth. three types of salts (NaCl, MgCl<sub>2</sub>, and CaCl<sub>2</sub>) at different concentration (25, 50, 75 and 100 mM) and deionized water as control will be used. A 15 sterilized seeds were placed in petri dishes containing 5 ml of deionized water or each salinity solution and kept in the growth chamber at 21 ± 1°C. The experiment is conducted in a completely randomized design with nine replicates. The number of germinated seeds will be recorded daily until day 10. On day 10, the length of the hypocotyl, radicle and the biomass of seedlings were measured. Germination percentage, seed vigor, salt tolerance were calculated. Data were analyzed using SPSS windows version 21. Data are subjected one way ANOVA p≤0. 05 to determine the significant difference between treatment and followed Tukey at p≤0. 05 for means comparison. Results show the response of *B. rapa rapa* seed on NaCl, , MgCl<sub>2</sub>, and CaCl<sub>2</sub> is significantly different. It indicates that the viability of (*B. rapa rapa* )seed to germinate relatively high in NaCl followed by CaCl<sub>2</sub> and MgCl<sub>2</sub>.