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# The Effect of Salinity on Plant Growth in *Brassica napus*

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**Abstract**

*Brassica napus* is ranked at the second position among the sources of edible oil and biodiesel, the seed gives 35 % to over 45 % oil of its weight. Soil salinity is one of the major abiotic stresses reducing the crop production. Worldwide, about 20 % of the cultivated lands are suffering from increasing salinisation. One of the most suitable approaches to overcome this constraint is the selection for salt tolerant varieties. Our objectives are the investigation of salinity effect on plant growth at seedling stage in a double haploid (DH) population of winter oilseed rape (*Brassica napus*). This population will be used later to detect QTL for salt tolerance as a prerequisite for marker-assisted selection (MAS).

Therefore, 13 parents acting as the founders of about 7 DH mapping population have been tested looking for diversity in salt tolerance at seedling stage. Based on the results a DH population consists of 140 lines derived from a couple of these founders was considered in our study. The experiment was conducted in the greenhouse using 200 mM NaCl for stress and 0 mM NaCl for control under the favourable conditions for *Brassica napus* growth at 20 °C at day and 15°C at night. To test for salt tolerance differences between the DH lines; plant fresh weight, plant dry weight, relative water content (RWC), chlorophyll content, plant sodium and potassium content were assessed.

There was a clear and significant difference between the DH lines in this population, giving an indication that this population is suitable for QTL analysis. The analysis of variance (ANOVA) was carried out by PLABSTAT 3.0 software.

**Keywords:** *Brassica napus*, quantitative trait loci, relative water content, salt tolerance

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