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54 - Variability in salt stress tolerance of wild *Brassica rapa* seedlings originating from different Mediterranean areas

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Salinity is one of the main abiotic stress factors for plants that is steadily increasing at the global level. This study investigated the effect of salt stress (NaCl 50 and 150 mM) on three wild genotypes of *Brassica rapa* L, originating from Algeria, Italy, and France (*BR-A-CHLE-W*; *BR-I-GRAT-W*; *BR-F-FOUG-W*), whose seeds were obtained through the activities of the BrasExplor project (PRIMA 2019). The aim was to highlight potential differences in the response of functional, physiological and morphological traits. After 21 days of treatment, the following parameters were analysed: chlorophyll fluorescence (Fv/Fm), relative membrane permeability (RMP), biomass, shoot length and leaf area. CHLE showed good tolerance at 50 mM, though significant reductions in leaf area and shoot length at 150 mM; GRAT was sensitive already at 50 mM; FOUG exhibited atypical responses, with partial recovery at 150 mM. In all genotypes, Fv/Fm progressively decreased, while RMP increased, with FOUG displaying high values even under control conditions. Biomass responses were variable. These results highlight considerable variability in the response to salt stress among the analysed genotypes. In the context of increasing soil salinization in agricultural areas worldwide, studying such different responses represents an important step toward the possible future selection of tolerant lines, offering new perspectives for the genetic improvement of *Brassica rapa*.