

Supplementary Material

Improvement of salt and waterlogging tolerance in wheat: comparative physiology of *Hordeum marinum*-*Triticum aestivum* amphiploids with their *H. marinum* and wheat parents

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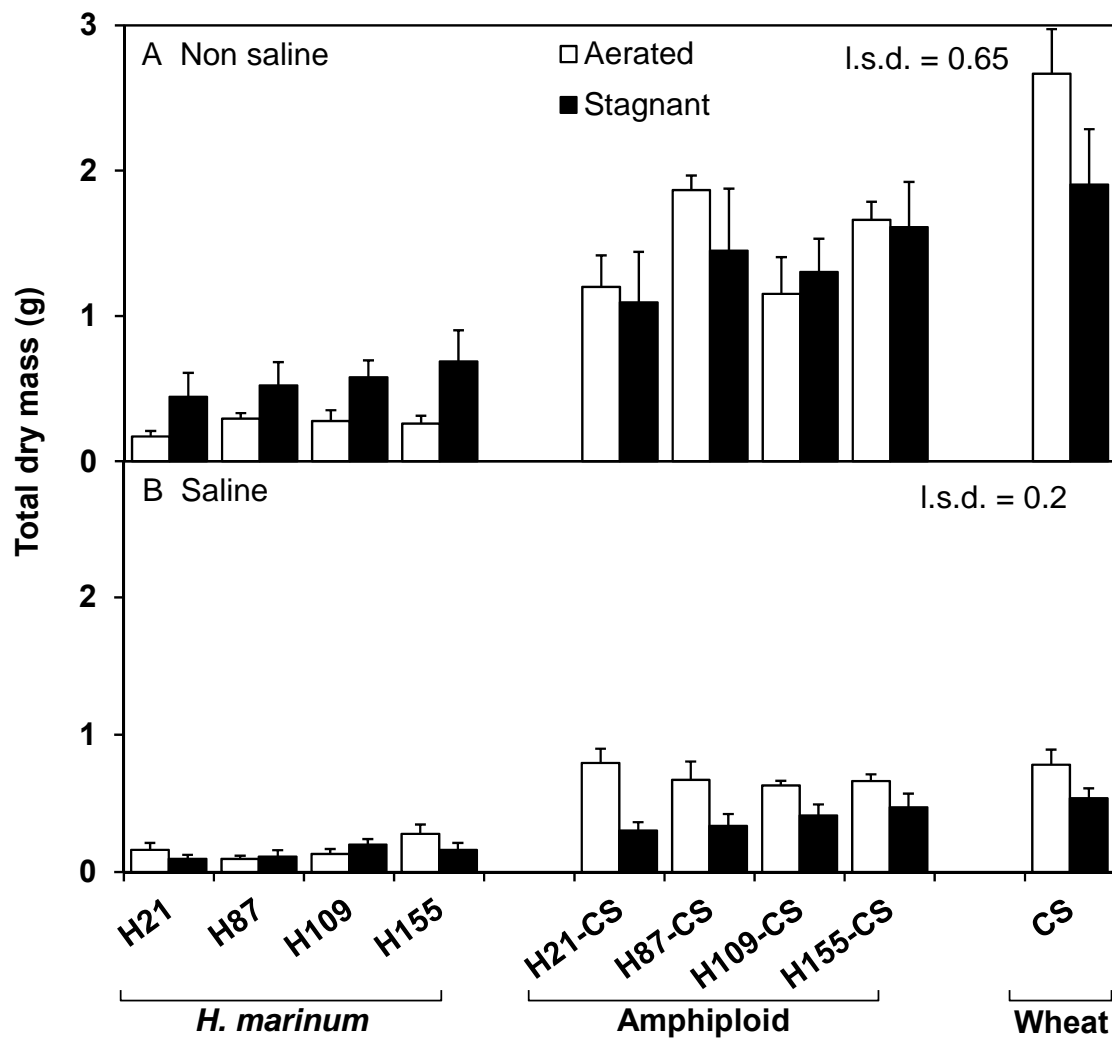


Fig. S1. Total dry mass of *H. marinum* accessions (H21, H87, H109 and H155), wheat (*Triticum aestivum* cv. Chinese Spring; CS) and their amphiploids grown in nutrient solution. Treatments were imposed when plants were 14 days old for *H. marinum*, and 11 days old for wheat and the amphiploids. Plants were treated for 26 days with aerated (control) or stagnant non-saline nutrient solution (A); or aerated or stagnant nutrient solution plus 200 mM NaCl (B). Each value is the mean of four replicates \pm s.e., and each replicate is a single plant grown in a different pot. The l.s.d. represents significant differences between genotypes at $P = 0.05$.

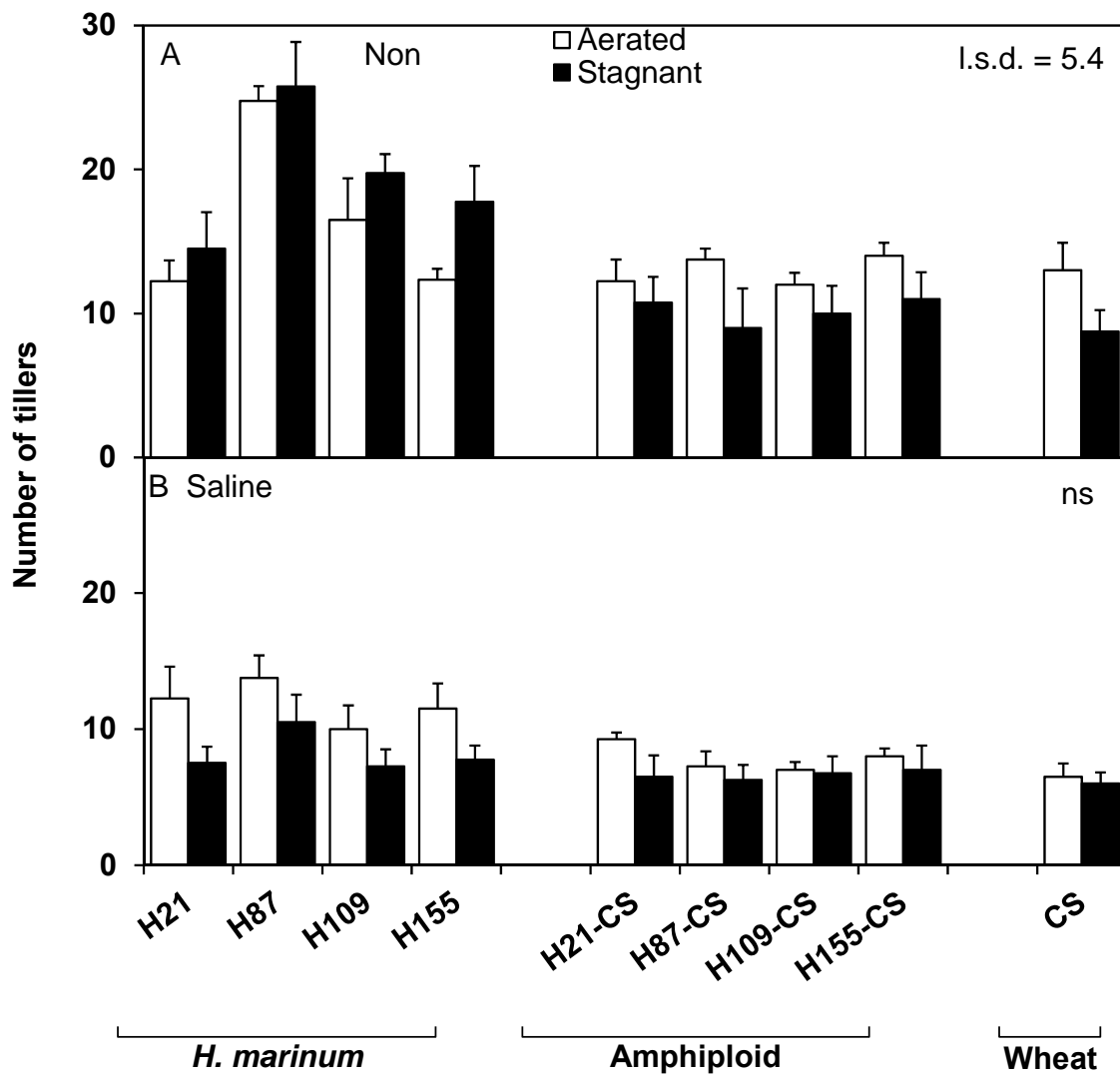


Fig. S2. Number of tillers of *H. marinum* accessions (H21, H87, H109 and H155), wheat (*Triticum aestivum* cv. Chinese Spring; CS) and their amphiploids grown in nutrient solution. Treatments were imposed when plants were 14 days old for *H. marinum*, and 11 days old for wheat and the amphiploids. Plants were treated for 26 days with aerated (control) or stagnant non-saline nutrient solution (A); or aerated or stagnant nutrient solution plus 200 mM NaCl (B). Each value is the mean of four replicates \pm s.e., and each replicate is a single plant grown in a different pot. The l.s.d. represents significant differences between genotypes at $P = 0.05$, ns = not significant.

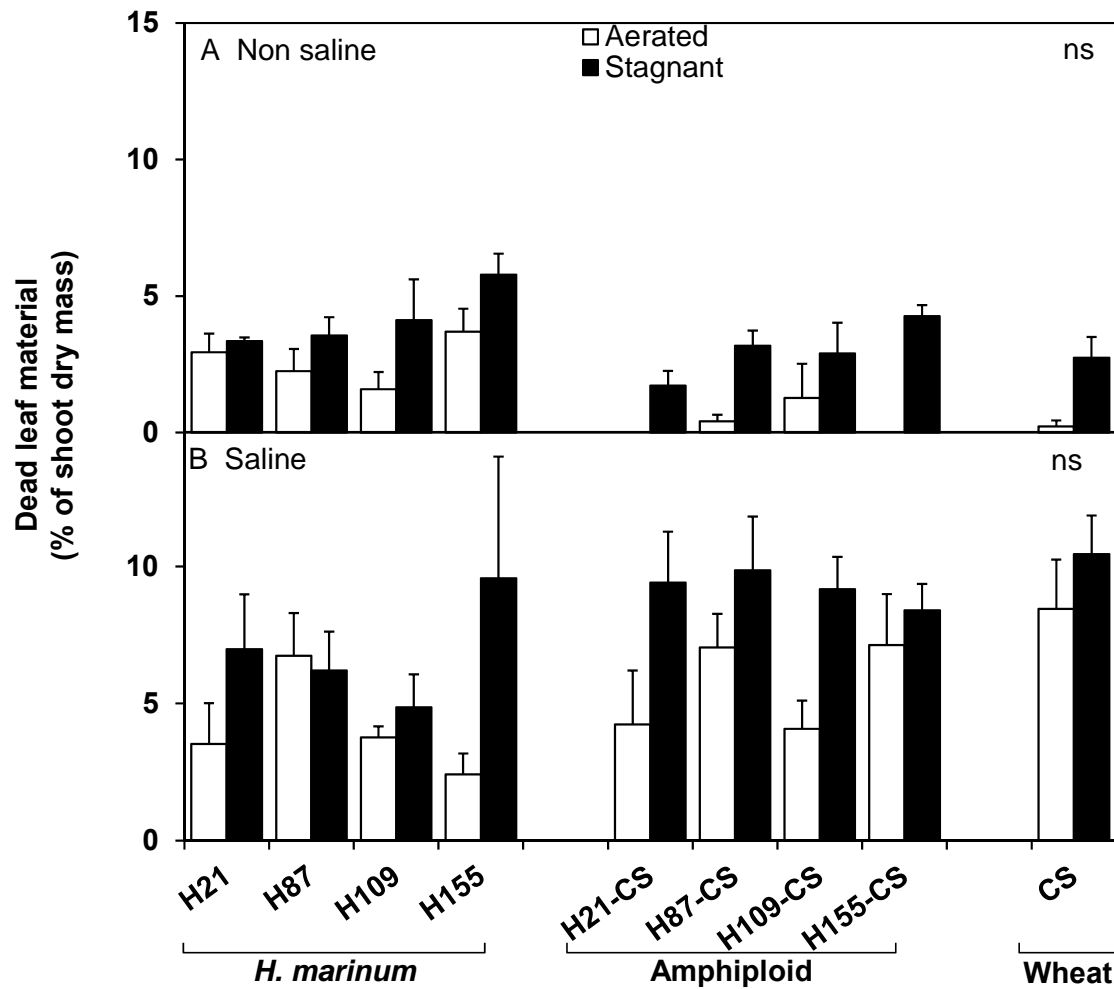


Fig. S3. Dead leaf material (as a percentage of shoot dry mass) in *H. maritima* accessions (H21, H87, H109 and H155), wheat (*Triticum aestivum* cv. Chinese Spring; CS) and their amphiploids grown in nutrient solution. Treatments were imposed when plants were 14 days old for *H. maritima*, and 11 days old for wheat and the amphiploid. Plants were treated for 26 days with aerated or stagnant non-saline nutrient solution (A), or aerated or stagnant nutrient solution plus 200 mM NaCl (B). Each value is the mean of four replicates \pm s.e., and each replicate is a single plant grown in a different pot. ns = no significant differences between genotypes at $P = 0.05$.

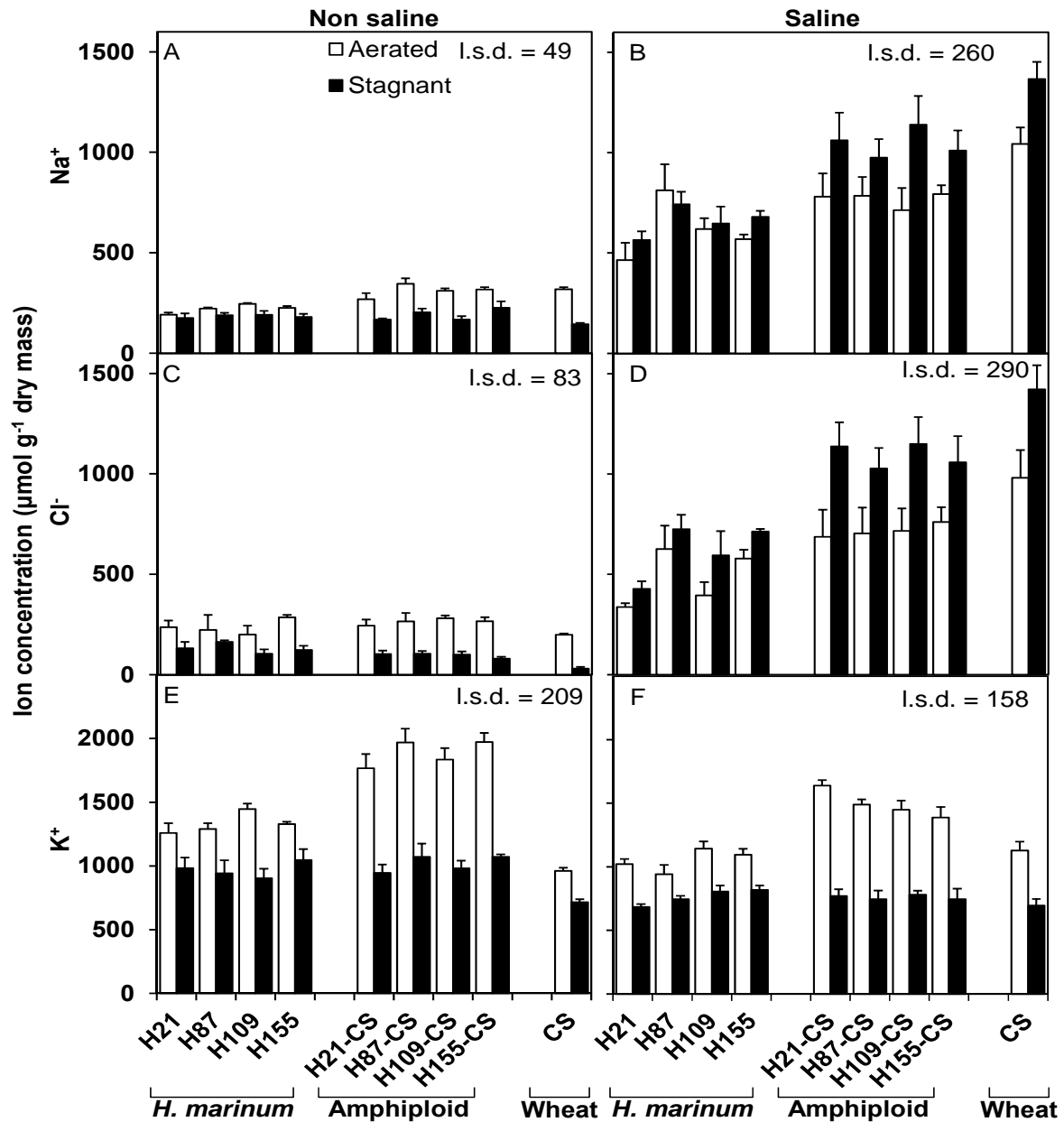


Fig. S4. Concentrations of Na⁺ (A and B), Cl⁻ (C and D) and K⁺ (E and F) in green leaves other than youngest fully expanded leaves of *H. marinum* accessions (H21, H87, H109 and H155), wheat (*Triticum aestivum* cv. Chinese Spring; CS) and their amphiploids when grown in nutrient solution. Treatments were imposed when plants were 14 days old for *H. marinum*, and 11 days old for wheat and the amphiploids. Plants were treated for 26 days with aerated or stagnant non-saline nutrient solution (A, C and E), or aerated or stagnant nutrient solution plus 200 mM NaCl (B, D and F). Note the different scales on the y-axis (E and F differ to the other parts). Each value is the mean of four replicates \pm s.e., and each replicate is a single plant grown in a different pot. The l.s.d. represents significant differences between genotypes at $P = 0.05$.