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On the Cover: Climate-change-driven stresses, such as salinity, drought, and heat, jeopardize global food security. The extensive research on plant responses to single abiotic stresses has underlain major physiological and molecular mechanisms. However, under field conditions, these stresses usually occur simultaneously and the ability to predict plant responses to a combination of stresses based on single stresses is very limited. In this issue, Shaar-Moshe et al. (pp. 421–434) investigated the transcriptional patterns and morpho-physiological acclimations of the cereal model plant, *Brachypodium distachyon*, to single salinity, drought, and heat stresses, as well as their double and triple stress combinations. Comprehensive morpho-physiological analyses demonstrated a gradual decrease in plant performances as more stresses were combined, as well as dominance of a specific stress treatment that shaped plant acclimations. The cover image shows the severe reduction in plant growth under combined stresses. A comparison between common stress- and combination unique genes revealed specific transcriptional signatures and functional processes, within each gene subset. Photo was taken by Lidor Shaar-Moshe.

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