

Review Article

Bread and durum wheat tolerance under heat stress: A synoptical overview

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Abstract: Temperature and nutrition are two major components of environmental variation that provide significant limitations to a successful crop production. Increasing temperatures during grain filling interacts, at a metabolic level, with growth duration and filling rates, as well as with grain maturity and quality. At a nutritional level, temperature is also linked to uptake and translocation rates to roots and shoots tissues, which determines crop production. Nevertheless, these interacting effects are closely related to *Triticum* species and genotypes tolerance to heat stress, particularly during grain filling. In this context, the interactions of heat stress on the nutrient status and on the photosynthetic performance becomes determinant to the mobilization of photoassimilates to the grain and on the definition of its quality. In this review, an overview is presented on the tolerance of bread and durum wheat to heat stress, considering mineral nutrition, cellular membrane thermotolerance, the photosynthetic functioning, grain filling rate and duration and ultrastructure and biochemical traits of bread and durum wheat grains.

Keywords: Bread wheat, durum wheat, heat stress, thermotolerance.

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